Federal Reserve Bank of New York

Quarterly Review

Winter 1985-86 Volume 10 No. 4

The Quarterly Review is published by the Research and Statistics Function of the Federal Reserve Bank of New York. Remarks of E. GERALD CORRIGAN, *President of the Bank, on bank supervision in a changing environment begin on page 1. Among the members of the staff who contributed to this issue are* JOHN WENNINGER *and* LAWRENCE J. RADECKI *(on the monetary aggregates in 1985, page 6);* DOROTHY CHRISTELOW *(on Japan's intangible barriers to trade in manufactures, page 11);* DANIEL E. CHALL *(on housing reform in New Jersey and the* Mount Laurel *decision, page 19); and* FRED C. DOOLITTLE *(on adjustments in Buffalo's labor market, page 28).*

Other staff members who contributed to In Brief—Economic Capsules are LYNN PAQUETTE *(on credit card balances—debt or convenience use?, page 38); and Two Capsules on the Auto Sector . . .* ETHAN S. HARRIS *(on forecasting automobile output, page 40); and* JOANN MARTENS *(on projecting consumer expenditures on automobiles, page 43).*

An interim report on Treasury and Federal Reserve foreign exchange operations for the period August through October 1985 starts on page 45.

Bank Supervision in a Changing Financial Environment

Good afternoon, ladies and gentlemen. I am delighted to have this second opportunity to address the Mid-Winter Meeting of the New York State Bankers Association and I want to use this occasion to discuss recent and prospective initiatives by the Federal Reserve aimed at strengthening (1) the supervision of banking organizations and (2) the operation of the payments system. These subjects are closely related, not only because banks are the dominant institutions through which payments are made, but more fundamentally because the safety and integrity of the banking system and the safety and integrity of the payments system are inseparable, with both ultimately resting on that great intangible—public confidence.

By way of background, allow me to highlight some of the recent developments which seem to me to underscore the need for further efforts in these areas. The last several years have seen our banking and financial markets buffeted by a complex interaction of cyclical and secular forces. Some of these forces reflect changes in the economic environment; some are prompted by technological considerations; others stem from an intensely competitive environment in the financial marketplace fostered in part by deregulation; and still others reflect changing structural characteristics of our domestic and international economy. In the end, however, all of these factors blend together in a manner that makes it very difficult to distinguish causes from effects and actions from reactions. Yet, whatever the cause-and-effect relationships may be, the manifestations of the interaction of these forces in the marketplace are plain to see. For example:

Remarks of E. Gerald Corrigan, President, Federal Reserve Bank of New York, before the 58th Annual Mid-Winter Meeting of the New York State Bankers Association on Thursday, January 30, 1986.

- Most measures of the quality of financial assets in bank portfolios and elsewhere are at disturbingly low levels given where we are in the business cycle. Some of this is the inevitable fallout of imbalances in economic performance and policies here and abroad, but some may also be due to aggressive and short-sighted behavior of individual financial institutions.

- Businesses and households continue to accumulate debt at very rapid rates despite what look like very high real rates of interest.

The safety and integrity of the banking system and the safety and integrity of the payments system are inseparable, with both ultimately resting on that great intangible—public confidence.

- Isolated but often sensational problems in individual financial institutions—almost always growing out of bad or abusive management practices—inevitably raise questions about the strength and stability of institutions more generally.

- The explosion in new financial market practices and instruments—many of which are not reflected on conventional accounting statements—strains the mental dexterity of even the best and the brightest among us.

- The apparent thinness of spreads and margins on individual financial transactions raises questions as to whether pricing adequately reflects risks.

- The internationalization of banking and financial markets has brought about a quantum leap in the degree of financial interdependence and in the structural complexity of the financial marketplace.

It is not uncommon for the value of large dollar computerized payments processed by the New York Federal Reserve Bank and by the New York Clearing House to exceed $1 trillion in a single day.

- Finally, and reflecting all of the above, the volume, speed, and value of financial transactions are growing at a very rapid rate. For example, here in New York City, it is not uncommon for the value of large dollar computerized payments processed by the New York Federal Reserve Bank and by the New York Clearing House to exceed $1 trillion in a single day. To try to put that in perspective, $1 trillion is:

  - $35 million per second over an eight-hour day.

  - Forty times the reserve balances held at the 12 Reserve Banks by all banks.

When we pull together these various elements one message emerges rather powerfully: namely, that events have undercut the effectiveness of many elements of the supervisory and regulatory apparatus historically surrounding banking and finance. If it can't be done onshore, it's done offshore; if it can't be done on the balance sheet, it's done off the balance sheet; and if it can't be done with a traditional instrument, it's done with a new one. That is not to say that these developments are bad. To the contrary, taken together they are symptomatic of a vital and adaptive financial marketplace. Yet, as this process unfolds, we must recognize that the historic regulatory/supervisory apparatus associated with banking—whatever its limitations—was a source of restraint and discipline on individual institutions and on the system as a whole. If, therefore, I am correct in postulating that events are undermining that source of restraint, a key question that arises is what, if anything, should replace it?

In response to this, some—perhaps many—would say "let market discipline do the job". It's very hard to argue with that since all of us are powerfully attracted to the concept and the reality of the marketplace as the optimal vehicle for resource allocation. But, if in banking and finance we are to accept that concept in its fullness, we had better take market discipline out of the closet and take a good close look at it and its implications. For example, if we really want unfettered market discipline, then we must be prepared to accept the ultimate discipline of the market—outright failures regardless of their implications for other institutions and markets. Now, if that's what we want, several things seem to me, as a matter of logic, to go with it: we probably don't need the discount window; we don't need the Fed effectively guaranteeing large dollar payments; we don't need deposit insurance at the $100,000 level; as a matter of fact, we probably don't need much at all by way of rules or regulations, much less supervisory and examination programs.

Now at this point, I'm sure all of you are saying "that's a straw man; that's not what we really mean by market discipline". And you would be right, it was a straw man, but a straw man with a purpose: namely, to make the point that I have no sense that any of us are prepared to dismantle the public safety net associated with our banking—and to a lesser extent—other financial institutions. On the other hand, I do have the clear sense that all of us recognize the need to adapt the safety net in ways that are more responsive to market realities of the day and more sensitive to the need to avoid penalizing the strong and prudent because of the mistakes and misfortunes of the weak and the reckless. Above all, I have the sense and the conviction that we need to adapt the safety net in ways that continue to protect the system as a whole from the misfortunes of the few.

However, it is easier to say these things than to do them, especially in the context of an intensely competitive and tightly integrated financial market within which sophisticated electronic payments systems provide the linkages by which billions of dollars can move domestically or internationally with the blink of an eye.

But, if in banking and finance we are to accept that concept in its fullness, we had better take market discipline out of the closet and take a good close look at it and its implications.

To summarize to this point: if financial integration and complexity have increased dramatically; if events and technology have undercut much of the restraint and discipline associated with historic forms of financial regulation and supervision; if we are not prepared to accept unfettered market discipline as the sole or even the dominant source of restraint on the system as a whole; if the strong should not be penalized by the problems of the weak; and if we care about the stability of the system as a whole, then the case for strengthening the infrastructure supporting the operation of our financial institutions and markets is overwhelming.

In the first instance, the primary responsibility for enhancing that infrastructure lies with the directors and officers of individual banking organizations. And, the events of the past several years have provided clear and unmistakable evi-

dence that individual institutions recognize this responsibility and have risen to its challenge. Nowhere is that more evident than in the attitude of bankers toward strengthening capital and reserve positions. For example, between year-end 1982 and the third quarter of 1985, the primary capital of the 25 largest banking organizations in the United States grew by $26.5 billion, or 57 percent. Over the same time period the total capital of these institutions rose by $38.5 billion, or by more than 70 percent. And, these truly impressive increases in capital were recorded despite historically high levels of charge-offs. That enormously expanded capital base will be a source of great strength for the future but as large as it is, it does not reduce the need for conservatism in capital building efforts and in banking practices generally.

On the other hand, I do have the clear sense that all of us recognize the need to adapt the safety net in ways that are more responsive to market realities of the day and more sensitive to the need to avoid penalizing the strong and prudent because of the mistakes and misfortunes of the weak and the reckless.

However, just as bankers have responsibilities to adapt to the new environment, so too do the public authorities, including the Congress and the bank supervisory agencies. In that regard, some of you may recall that at this time a year ago I said that the case for broad-based and progressive federal banking legislation was urgent and I spelled out in some detail the specifics of a near-term legislative agenda which seemed to me both essential and pragmatic. In the interest of time, I'm not going to repeat that agenda today, but I do want to repeat—with an even greater sense of urgency—that if we don't get progressive federal legislation, and get it soon, events may result in a helter-skelter of circumstances that will make none of us very happy.

As I see it, that danger was driven home all too vividly in the Supreme Court ruling in the so-called "nonbank bank case" two weeks ago. In that opinion, the Court seemed to me to be saying that while it had sympathy for the substance of the Federal Reserve position, the proper remedy was legislative, not judicial—which, of course, has been the Fed's position all along. Hopefully, the Court's ruling will serve as a catalyst for federal legislation, not just to deal with the definitions of banks and thrifts but also to make progress regarding product and geographic expansion, the appropriate role of the states in banking structure and supervisory matters, and in simplifying some of the supervisory provisions of the Bank Holding Company Act.

However, even in a framework in which banks themselves are adjusting to the new environment and one in which appropriate federal legislation is forthcoming, it seems to me essential that we continue the process of adapting our system of prudential supervision to the realities of the new environment. The Federal Reserve and the other banking supervisors have been hard at work in that effort for some time and over the balance of my remarks today I would like to share with you some thoughts on several aspects of that process which seem to me particularly important. Before turning to some of the particulars, however, let me say a few words on the principles which I personally believe should guide this effort:

- *First*, the primary responsibility for the safety and soundness of individual institutions lies with the directors and management of each institution, not with the supervisors.
- *Second*, no system of official, prudential supervision can be, or should be, fail-safe. If that's what we want, we might as well nationalize the banking system.
- *Third*, disclosure has a place—an important place—but it's not a panacea, and taken too far it can be destabilizing.
- *Fourth*, no set of rules, reporting requirements, guidelines, or disclosure requirements can substitute for the on-site examination and inspection process.
- *Fifth*, supervisory initiatives must be sufficiently flexible so as not to penalize the strong because of the mistakes and misfortunes of the weak.
- *Sixth*, to the extent possible, supervision should take account of function rather than form.
- *Seventh*, supervisory efforts must take greater account of the increased credit and operational interdependencies among banks and between banks and other major financial institutions, domestically and internationally.

If we don't get progressive federal [banking] legislation, and get it soon, events may result in a helter-skelter of circumstances that will make none of us very happy.

Against that background, the Federal Reserve has undertaken a number of major initiatives aimed at strengthening the bank supervisory process over the past year or so. While time does not permit me to go into all of the initiatives, there are several areas which seem to me to merit special attention.

First, the Fed has adopted a new approach regarding the scope and frequency of on-site examinations for large institutions and for problem institutions. Specifically, all problem and potential problem institutions of $500 million or more will be subject to one full scope and one limited scope examination per year. In addition, for institutions with more than $10 billion in assets, the alternate year examination program with New York State will be dropped in favor of annual joint examinations. Finally, for all institutions over $10 billion in assets, there will be one full scope examination per year *and* one special or targeted examination per year.

Thus, the Fed will begin using the special or targeted examination but not at the expense of eliminating or reducing the frequency of the comprehensive overall examination, which I firmly believe must remain as the cornerstone of our examination efforts. Insofar as the special or targeted examinations are concerned, we expect that the point of emphasis will vary from institution to institution. For example, depending on the institution, the emphasis might be on a detailed look at operational systems, or off balance sheet activities, or particular points of interest in the loan portfolio, or patterns of worldwide funding activities. And, because these targeted examinations can be highly specialized, we have in mind augmenting our teams of examiners with specialists drawn from other areas of the Federal Reserve Bank of New York to assist in these efforts. While the combination of the comprehensive and the specialized examination will entail some greater effort on our part and on the part of affected institutions, we are confident that the mutual benefits will far outweigh the costs and potential burdens of this approach.

A second area of particular emphasis has been in regard to prudential standards. Specifically, the events of the last several years have made it clear that bank holding companies, as corporations in their own right, cannot always depend on an uninterrupted flow of dividends and other income from their bank and nonbank subsidiaries, or on bank-like liability management practices to fund medium- and longer-term assets. Thus we are placing new emphasis on holding company cash flow and liquidity in the inspection process.

Thus, the Fed will begin using the special or targeted examination but not at the expense of eliminating or reducing the frequency of the comprehensive overall examination, which I firmly believe must remain as the cornerstone of our examination efforts.

In accordance with this emphasis we have developed, field tested, and implemented revised and expanded examination guidelines relating to holding company cash flow and liquidity. The revised cash flow guidelines focus on cash flow in relation to operating expenses, debt service requirements, and dividends to shareholders. The holding company liquidity guidelines focus on contractual and actual maturities of the parent's assets and liabilities, the liquidity available in advances to subsidiaries, and the need for management policies and contingency plans regarding the parent company's liquidity. Of course, the holding company cash flow guidelines are broadly germane to the guidelines issued late last year by the Federal Reserve and the Comptroller of the Currency regarding circumstances in which the curtailment or elimination of dividend payments by banks or bank holding companies might be appropriate. We are also taking a fresh look at examination and supervisory guidelines as they pertain to loan concentrations and standards for judging the adequacy of loan loss reserves.

The single most important initiative on the table, however, is the proposed risk based capital adequacy guidelines which were issued for public comment by the Board of Governors in mid-January. The proposed guidelines are a response to events in the marketplace—such as the growth of off balance sheet activities—which simply could not be ignored. More importantly, these proposed guidelines are fully compatible with the concept that supervisory norms should take account of characteristics of individual institutions rather than painting with such a broad brush so as to treat all institutions more or less alike.

Because of its importance, the Federal Reserve has provided for a 90-day public comment period on this proposal. Needless to say, I would hope that all affected institutions would give us the benefit of their views on this subject. In framing those comments, I believe it is important to keep in mind that the approach is not intended to capture all of the nuances of risk and risk management in banking operations. Rather, it is a general framework designed to help bankers and bank supervisors better gauge overall risks and capital adequacy on the basis of four broad categories of relative risk. Thus, while there will be a natural tendency to quibble as to whether a particular item belongs in one category or another, excessive fine-tuning must be resisted in part to avoid undue administrative complexities but also to guard against the dangers of expecting more from such an approach than it can deliver.

Another area of particular concern to the Federal Reserve has been efforts to strengthen our examination and supervisory personnel. In part, that has entailed stepped-up efforts to recruit individuals with more diversified skills and to provide more intensive and sophisticated training programs for our examination personnel. In addition, we are increasingly looking to people drawn from areas of the Bank such as open market operations, foreign exchange trading, computer systems, legal, and research to help in framing supervisory policies and, in some cases, even to participate in field examination work. We have also been exploring ways in

which supervisory personnel can quickly and flexibly be used to assist in dealing with particular problems when they arise. For example, last year in the context of the problems with state chartered thrift institutions in Ohio and Maryland, large numbers of Federal Reserve examiners from all over the country were utilized on-site to help contain and ultimately stabilize those situations. The importance of all of these efforts cannot be overstated because in the end, supervisory policies are only as good as the people who administer those policies. Achieving that needed blend of technical skills, professionalism, and good old common sense in our examination personnel was never easy but has never been more important.

The single most important [supervisory] initiative on the table, however, is the proposed risk based capital adequacy guidelines which were issued for comment by the Board of Governors in mid-January. The proposed guidelines are a response to events in the marketplace—such as the growth of off balance sheet activities—which simply could not be ignored.

These initiatives—and others I have not mentioned—are, in my view, broadly consistent with the principles I cited earlier that should guide our efforts. But, as important as they are, they do not begin to capture all that needs to be done. For example, I have not even mentioned the case for greater international coordination of supervisory efforts and standards—a need that arises on both prudential and competitive grounds. Looked at in that light, the initiatives I have mentioned should be viewed as stepping stones in the continuing and very difficult process of seeking to keep the supervisory process attuned to a rapidly changing market environment.

In closing, allow me to make a few brief comments about the operation of the payments system and particularly large dollar electronic payments systems. The speed and efficiency of those systems are one of the marvels of our times. But, speed and efficiency can bring vulnerability and, in the case of large dollar electronic payments systems, those vulnerabilities can take many forms ranging from computer problems to credit problems. Recognizing this, the banking industry, in close cooperation with the Federal Reserve, has been actively exploring ways in which greater elements of discipline and control can be built into the operation of these systems. As a result, caps or limits on intra-day extensions of credit on Fedwire and on the major private wire transfer systems have been or are being established by users of these systems. As best we can judge, this process of establishing caps on the basis of self-appraisal is going well and we are already seeing signs that it is having the desired effect of focusing even greater top management and directors' attention on the subject. We are also aware that a few problems and glitches have surfaced and, where possible and appropriate, we are working with individual institutions to help remedy these problems. All in all, however, the process seems to be proceeding in a generally satisfactory manner.

In saying this, let me emphasize that these efforts are but a first step in strengthening this vital element of the payments mechanism. I say they are a first step because daylight overdrafts are the symptom, not the cause. Looked at in that light, current efforts—while necessary—can probably do little more than stabilize the situation. Since the object of the exercise should be to enhance the reliability of the system and ultimately reduce risk and exposure, we are going to have to get at the underlying problems, not just their symptoms.

That more penetrating effort will have to entail considerations relating to (1) possible approaches to achieving a higher level of operational reliability in the system; (2) more comprehensive procedures to be followed in emergency situations; and (3) a greater willingness to reconsider market practices in an effort to reduce daylight exposure and payment risk. Of course, in exploring these avenues for enhancement, we must take care so as not to undermine the liquidity and efficiency of our markets. Achieving that balance will not be easy, but we must try.

The speed and efficiency of those systems are one of the marvels of our times. But, speed and efficiency can bring vulnerability and, in the case of large dollar electronic payments systems, those vulnerabilities can take many forms ranging from computer problems to credit problems.

The agenda for the future is long and imposing, but my colleagues and I at the New York Fed enthusiastically welcome the opportunity to play our part in helping to meet these challenges. Indeed, as the arm of the Central Bank located in the largest and most important financial center in the world, we believe we have a special role to play in that regard. That special role reflects not just a physical presence in the market, but rather a broad-based operational presence. We examine banks, we buy and sell securities, we operate in the foreign exchange markets, we are direct parties to billions of dollars in electronic payments daily, we clear checks; in short, we too are a bank. Thus, what we bring to the arena of public policy is not just an intellectual point of view, but a point of view that is tempered and conditioned by our day-to-day presence in the marketplace. We think that's important and we hope you share that view. Thank you.

The Monetary Aggregates in 1985

The monetary aggregates gave conflicting signals in 1985. The growth of M1 (fourth quarter to fourth quarter) accelerated sharply from its 1984 pace, while M2's growth held fairly steady and M3's slowed considerably. As a result, M1's growth exceeded M2's and M3's by a large margin, an infrequent occurrence. Moreover, M1's velocity posted a decline in 1985 about as large as the record drop in 1982. M2's and M3's velocity, however, did not fall last year as sharply as M1's, nor were their declines nearly as large as in 1982. Clearly, M1's behavior was very unusual. In this article, we explore how the strength in M1 was part of a general shift by the household sector toward more liquid bank deposits, caused by the substantially lower interest rates on time deposits.

The relative performance of the monetary aggregates

M1 grew a rapid 11.6 percent (up from 5.2 percent in 1984), while M2 increased a more moderate 8.6 percent (only a little stronger than the year before), and M3's growth was 8 percent (down from 10.4 percent).[1] Last year's spreads between M1's growth rate and the growth rates of the broader aggregates turned out to be far from ordinary (Table 1). On average, the growth rates of M2 and M3 have exceeded M1's by three to four percentage points, but in 1985 the opposite was true (Table 1, first two columns). While some variation from the average spreads is normal and to be expected, the spreads fell beyond two standard deviations, a commonly used measure of "normal" bounds (Table 1, last two columns).

Of course, an extremely wide spread between the growth of M1 and M2 or M3 does not necessarily imply that M1 is the aggregate displaying unusual behavior. The income velocities (ratios of GNP to each monetary aggregate) of the monetary aggregates, however, do suggest that M1 was the aggregate out of line with past experience (Table 1, bottom half). M1's velocity was over two standard deviations below its long-run average growth rate of about 3 percent. Hence, normal year-to-year volatility in M1's velocity cannot account for its behavior in 1985. M2's and M3's velocities, while weak, were considerably closer to average than two standard deviations. This means that the growth rates of the broad aggregates were generally in line with the performance of GNP.

The velocities of the monetary aggregates, however, have been positively correlated in the past (in part because a broader aggregate contains a narrower aggregate). As a result, it is possible that the aberration in M1's velocity growth last year (7.9 percentage points below average) has been overstated somewhat, given that the velocities of M2 and M3 were also below average. In the regressions on page 7, the annual (fourth quarter to fourth quarter) growth rates of M1's velocity (VM1) are regressed alternatively on the growth rates of M2's velocity (VM2) and M3's velocity (VM3). (For the sake of comparison, M2's velocity is also regressed on M3's velocity.)[2]

[1] M1 consists primarily of currency and checking account deposits (NOWs and demand deposits). M2 includes M1 plus savings deposits, money market deposit accounts (MMDAs), noninstitutional money market mutual funds (MMMFs), small time deposits, overnight repurchase agreements (RPs), and Eurodollars. M3 equals M2 plus term RPs and Eurodollars, institutional MMMFs, and large denomination ($100,000 or more) time deposits. This study was prepared before the Board staff's annual benchmark and seasonal factor revisions.

[2] The regressions were also run with the non-M1 (or non-transactions) components of M2 and M3 as the independent variables, respectively, in equations (1) and (2). The estimated correlations were smaller, but significant, and the 1985 forecast errors remained over two standard errors.

Basically, the first two equations say that M1's velocity growth would be expected to be stronger (or weaker) than its average of about 3 percent when M2's or M3's velocity is stronger (or weaker) than its average. But even after allowing for the weakness in M2's or M3's velocity in 1985, M1's velocity was still 6.4 or 7.3 percentage points below expected (far right column), well over two standard errors.

Table 1

Comparison of M1, M2, and M3 Growth

In percent

	Annual rates (fourth-quarter to fourth-quarter)			
	Long-run average*	1985	Difference	Standard deviation†
M2 growth less M1 growth	3.0	−3.0	6.0	2.2
M3 growth less M1 growth	4.0	−3.7	7.7	2.3
M3 growth less M2 growth	1.0	−0.6	1.6	1.9
M1 velocity growth	2.8	−5.2	8.0	2.4
M2 velocity growth	−0.1	−2.6	2.5	2.7
M3 velocity growth	−1.0	−2.0	1.0	2.5

* 1960-84.

† Computed from annual rates, 1960-84.

Table 2

Composition of M3 Growth

In percentage points

	Contribution to M3 by component (fourth-quarter to fourth-quarter)		
	1984	1985	Difference
M1	1.0	2.2	1.2
Non-M1 components of M2:			
Small time	3.9	−0.2	−4.1
Savings	−0.7	0.5	1.2
MMDA	1.0	3.5	2.5
Noninstitutional money funds	0.9	0.5	−0.4
Other M2 components	0.2	0.4	0.2
Subtotal	5.3	4.7	−0.6
Non-M2 components of M3:			
Large time	3.2	0.9	−2.3
Institutional money funds	0.5	0.2	−0.3
Other M3 components	0.4	0	−0.4
Subtotal	4.1	1.1	−3.0
Total	10.4	8.0	−2.4

		R^2	Durbin-Watson statistic	Standard error	1985 forecast error
(1) VM1 =	2.8 + 0.62 (VM2) (7.7) (4.5)	0.46	1.4	1.8	−6.4
(2) VM1 =	3.3 + 0.60 (VM3) (7.9) (3.7)	0.38	1.5	2.0	−7.3
(3) VM2 =	0.7 + 0.82 (VM3) (1.9) (5.9)	0.60	1.8	1.7	−1.7

Estimation period: 1960 to 1984.

The components of the monetary aggregates in 1985

One reason why M1's velocity dropped so steeply might be that households were shifting funds into M1 from other M2 or M3 components. Such shifts would cause M1 to accelerate and its velocity to decline, while M2 and M3 growth would be unaffected and their velocities would be more stable. Hence, it seems worthwhile to look more closely at the components of the broad aggregates.

Table 2 shows the contributions to M3 growth from its major components in 1984 and 1985. The center part of Table 2 shows that overall the non-transactions (or non-M1) components of M2 added about the same amount to M3's growth in both years. But individually, they differ markedly. The least liquid of these components, small time deposits, showed the largest reduction of any individual component in its contribution to M3 growth. On the other hand, many of the more liquid components of M3 (NOW accounts, MMDAs, and even passbook savings accounts) supplied considerably more growth to M3 in 1985. This reveals a stronger preference by individuals and firms for highly liquid bank deposits.

Finally, the components of M3 not included in M1 or M2 also brought about M3's weaker growth (Table 2, bottom half). In particular, large time deposits contributed a much smaller fraction of M3 growth in 1985 versus the previous year. Apparently, the weaker demand for loans and the ability to attract "retail" deposits led banks to issue fewer "wholesale" deposits, basically large negotiable CDs. Therefore, the deceleration in M3 growth was caused by slow growth of large time deposits. The acceleration in M1 growth, in contrast, resulted from an increased demand for liquidity which did not affect M3 because most of the shifting was among M3 components.

The fall in interest rates helps to explain this greater preference for highly liquid deposits (including checkable deposits in M1). Table 3 compares the current and maturing yields for two popular small time deposit maturities, six months and one year. During the first quarter of 1985 the yield on new six-month certificates was 2.5 percentage points below maturing six-month certificates. And in the third quarter, the yield on new one-year certificates was 3.6 percentage points below maturing certificates, and the difference remained quite large (at almost 2.4 percentage

points) in the fourth quarter. Certainly, with such large declines in these yields, investors accustomed to double-digit rates would balk at rolling over these deposits. Apparently, they put the funds into more liquid accounts, such as MMDAs, Super NOW accounts, or conventional NOWs, either on a permanent basis or temporarily while they shopped for alternative investments.

Table 4 shows the rate spreads between time deposits and these liquid deposits over the past two years. The spreads were widest in the third quarter of 1984, when time deposit rates exceeded the rate on Super NOWs by three and one-half to four percentage points, conventional NOWs by about six percentage points, demand deposits by eleven to eleven and one-half percentage points, and MMDAs by about one and one-half percentage points. One year later, the rate spreads between time deposits and NOWs had declined by over one-half, between time deposits and demand deposits about one-third, and between time deposits and MMDAs by one-third to one-half. Clearly, such a marked narrowing in these spreads would induce many individuals to put their maturing certificates into M1 balances (particularly NOW accounts) or MMDAs, thereby gaining liquidity with only a small sacrifice in yield. Likewise, new savings that at higher spreads would have gone into time deposit accounts would be placed in these more liquid accounts.

Developments in 1985 were considerably different from what would have occurred prior to the extensive deregulation of interest rates on bank deposits. As long as the interest rate ceilings on the components of M2 were binding, the relative rates on various M2 deposits could not change,

Table 3
Current versus Maturing Yields on Small Time Deposits
Annualized yields (in percent)

	Six-month certificates			One-year certificates		
Date	Current	Maturing	Spread	Current	Maturing	Spread
1985-I	8.7	11.2	−2.5	9.3	10.0	−0.7
1985-II	8.2	10.0	−1.8	8.8	10.8	−2.0
1985-III	7.6	8.7	−1.1	8.0	11.6	−3.6
1985-IV	7.7	8.2	−0.5	8.1	10.5	−2.4
1986-I		7.6			9.3	
1986-II		7.7			8.8	
1986-III					8.0	
1986-IV					8.1	

Source: *Bank Rate Monitor.*

Table 4
Selected Interest Rate Spreads
In percentage points

	Six-month certificates less:				One-year certificates less:			
Date	Super NOWs	NOWs	Demand deposits	MMDAs	Super NOWs	NOWs	Demand deposits	MMDAs
Difference in yield								
1984-I	2.0	4.2	9.5	0.7	2.5	4.7	10.0	1.2
1984-II	2.9	5.1	10.4	1.1	3.3	5.5	10.8	1.5
1984-III	3.6	6.0	11.2	1.5	3.9	6.3	11.6	1.8
1984-IV	2.5	4.7	10.0	0.7	3.0	5.2	10.5	1.2
1985-I	1.7	3.4	8.7	0.6	2.2	4.0	9.3	1.2
1985-II	1.6	3.0	8.2	0.7	2.1	3.5	8.8	1.3
1985-III	1.5	2.4	7.6	0.7	1.9	2.8	8.0	1.1
1985-IV	1.6	2.5	7.7	0.8	2.0	2.8	8.1	1.2
Percentage change in yield spread from one year earlier								
1985-I	−18.0	−19.6	−8.8	−8.3	−10.8	−15.7	−7.4	2.9
1985-II	−45.2	−42.1	−20.8	−38.1	−34.9	−36.2	−18.6	−17.6
1985-III	−59.1	−60.5	−32.2	−52.9	−51.6	−55.8	−30.5	−38.2
1985-IV	−36.6	−47.8	−22.6	13.8	−34.2	−45.4	−22.6	−0.4

Source: *Bank Rate Monitor.*

even when market rates fluctuated widely. In the current environment, however, banks have set the rates offered on time deposits in line with market rates, resulting in significant movements in the rate spreads between these deposits and more liquid deposits, including those in M1.[3] This suggests that the responsiveness of the demand for M1 to market interest rates could have increased in recent years because individuals now have incentives to shift funds between nontransactions M2 and M1. M2's interest elasticity would not increase in a similar fashion because these shifts are contained within M2. Indeed, since the rates paid on a large share of M2 deposits now move with market rates, households have less incentive to substitute between M2 deposits and short-term market instruments. Disintermediation has been greatly reduced, and M2's interest rate responsiveness has probably declined somewhat.[4]

[3] In the case of Super NOWs, the narrowing of the spread reflected not only the reduction of the rates on time deposits as market rates fell but also the consideration that banks were slow to adjust the Super NOW rate downward.

[4] Disintermediation is the diversion of savings from accounts with low fixed interest rates to direct investment in high-yielding instruments.

The liquid components of M3

In part, M1 appeared so strong in 1985 compared with M2 and M3 because of the way the various types of deposits are grouped in the monetary aggregates (Table 5). M1 contains currency and checking deposits, but M2 includes deposits (or similar assets) with varying degrees of liquidity. A large portion of M2 consists of immediately available deposits or overnight investments: M1, savings deposits, MMDAs, MMMFs, and overnight RPs and Eurodollars. But another sizeable portion of M2 (35 percent) is less liquid deposits, *i.e.,* small time deposits. M3 contains M2 (which makes up about 80 percent of M3) plus time deposits of $100,000 and over, institutional MMMFs, and term RPs and Eurodollars. So M3 like M2 is comprised of both highly liquid and less liquid assets. Therefore, shifts in liquidity preferences have little effect on the growth rates of M2 and M3. As the aggregates are now defined, only M1 would be much affected by such shifts.

Table 6 compares the growth rate of the liquid components of M3 (as defined in Table 5) with the monetary aggregates. The liquid components of M3, like M1, accelerat-

Table 5
Components of M3
In billions of dollars

	Definitions of monetary aggregates	Volume		Components grouped by liquidity	Volume	
	M1	617.9		M1	617.9	
+	Savings deposits and MMDAs	810.6	+	Savings deposits and MMDAs	810.6	Immediate
+	Overnight RPs and Eurodollars	69.6	+	Overnight RPs and Eurodollars	69.6	availability
+	Noninstitutional MMMFs	176.4	+	Noninstitutional MMMFs	176.4	or overnight
+	Small time deposits	873.9	+	Institutional MMMFs	64.1	maturity
=	M2	2,548.4*	=	Liquid components of M3	1,738.6*	
+	Institutional MMMFs	64.1	+	Small time deposits	873.9	Longer than
+	Large time deposits	437.4	+	Large time deposits	437.4	overnight
+	Term RPs and Eurodollars	152.6	+	Term RPs and Eurodollars	152.6	maturity
=	M3	3,202.5*	=	M3	3,202.5*	

* Components do not add exactly to the total due to consolidation components. Dollar volumes are as of the fourth quarter of 1985.

Table 6
Recent Growth Rates of the Monetary Aggregates
Annual rates of growth (in percent)

Date	M1	M2	M3	Non-M1 components of M2	Non-M2 components of M3	Liquid components of M3*	Liquid components of M3 not in M1*
1983-IV to 1984-IV	5.2	7.7	10.4	8.6	11.7	5.4	5.5
1984-IV to 1985-IV	11.6	8.6	8.0	7.7	7.1	14.0	15.4

* See Table 5 for definition.

ed sharply in 1985. Indeed, the acceleration was even more pronounced than for M1. This suggests that individuals and firms responded to the recent drop in interest rates and narrower spreads by building up their liquid assets.

Summary

Seen in this light, the acceleration in M1 in 1985 looks less puzzling. The contrasts in the growth of the narrow and broad monetary aggregates stemmed in part from the different behavior of the less liquid and more liquid components of M2 and M3 as relative yields changed. In a regulated environment, the relative yields on the components of M2 (or M3) did not change when interest rate ceilings were binding—even when market rates fluctuated significantly. Hence, the distinction between the less and more liquid components of M2 and M3 was less important in understanding how the monetary aggregates responded to changes in market rates. Individuals reacted by moving funds between M2 (or M3) deposits and short-term market instruments. In a deregulated structure individuals at times still have incentives to shift funds, not only between market instruments and the monetary aggregates but also between M2 (or M3) components. This can contribute to growth in M1 that appears very unusual compared with GNP or M2 and M3, as it did in 1985.

John Wenninger and Lawrence J. Radecki

Japan's Intangible Barriers to Trade in Manufactures

Mounting U.S. trade deficits over the past three years have greatly intensified political and economic pressures for trade protectionism. These pressures have subsided somewhat following the recent decline in the dollar but will most likely continue to be strong over the near-term. Japan has born the brunt of the criticism because our bilateral trade deficit with Japan—the largest with any country—has been growing very rapidly and now accounts for about one-third of our total trade deficit. While Japan's tariffs and quotas, at least on manufactured products, are recognized as being similar to or lower than other major industrial countries, many suspect that what are sometimes called "intangible" barriers to imports contribute to Japan's trade surplus.

Intangible barriers are mainly systems and regulations applying to both domestic and foreign producers which, by accident or design, work to the special disadvantage of imports. In Japan those barriers provoking the most foreign complaints have been product standards and testing procedures, the wholesale and retail distribution systems, and government procurement. Intangible trade barriers are found in many countries and have attracted increasing international criticism as tariffs and quotas have gradually been negotiated downward. In fact, reductions of some barriers were included in the Toyko Round of multilateral trade agreements that became effective in 1980. As a signatory, Japan has adopted a series of measures designed to substantially reduce its intangible barriers. Because the changes are being phased-in gradually between 1983 and 1988, and because the trade response will take time, the results will emerge slowly.

This article briefly describes the nature of intangible barriers to imports of manufactures, the products principally affected, the liberalization moves already made and those planned for 1986-88, and systemic changes that could also ease entry of foreign products. Finally, it offers rough estimates of the long-run trade consequences of greatly reducing those barriers.

We find that these intangible barriers have probably been important for a significant number of products. These include computers, sophisticated telecommunications equipment, and other industrial machinery for which several industrial countries compete strongly with Japan. It is also true of chemicals and some other products for which Japan is at a comparative disadvantage. We estimate, very roughly, that other things being equal, reduction of intangible trade barriers, as defined here, for affected products to the level prevailing in the United States and the European Community (EC), could ultimately raise Japan's imports by as much as 7 percent, or about $9 billion from the 1983 level. However, because only partial barrier removal can be expected, the actual increase in imports over the next five to ten years would be smaller. About half of any gain would accrue to U.S. exports to Japan.[1]

Japan's import policy in perspective

Japan's markets are sometimes perceived as relatively closed to foreigners. But as far as tariffs and quantitative restrictions on imports of manufactures are concerned, this is certainly not true. In the early postwar years, Japan imposed high tariffs and stringent quotas to allow war-ravaged industries to rebuild and to protect infant industries such as automobiles as well as the relatively inefficient agriculture sector. However, as basic industries like steel regained their

[1] This is somewhat higher than differently derived estimates by W.F. Bergsten and William R. Cline in *The United States-Japan Economic Problem,* Institute for International Economics (October 1985).

footing and as the automobile and consumer electronics industries became strong competitors in world markets, Japan joined with other nations in mutual reduction of tariffs and quotas on imports of manufactures. Before the latest round of tariff reductions in 1980, Japan's trade-weighted average tariff on manufactured goods was around 10 percent, nearly identical to the EC average and slightly higher than that of the United States.[2] When the Tokyo Round cuts are fully implemented, which in Japan's case has already occurred, Japan's average tariff on manufactures, at 2.9 percent, will be one and one-half to four percentage points lower than the also low averages for the other industrial countries.[3]

In the area of quantitative restrictions, Japan maintains 22 quotas on imports of agricultural products, rivaling the EC in the protectionist thrust of its trade policy. But for manufactures, its use of such restrictions is more limited: there are quotas only on leather products and coal briquettes. And Japan is a member, along with the United States and the EC countries, in the multi-fiber agreement which limits exports of textile products from developing countries to industrial countries. However, unlike the United States, Canada, and the EC countries, Japan has not requested that its trading partners impose other "voluntary" restraints on their exports to Japan.

While quantitative restrictions apply to a limited range of Japan's imports of manufactures, the scope of intangible barriers is broader. Foreign countries have complained that restrictive product standards and related inspection and certification procedures, the wholesale and retail distribution systems, and government procurement procedures make Japanese markets for many manufactured products difficult to penetrate. These barriers have included clear and specific elements of discrimination against imports. But beyond this, some have limited market access to all newcomers, domestic and foreign, and thus may have also served to restrict imports. Pressures on the Japanese government to eliminate these intangible barriers to imports have mounted sharply as the country's trade surplus has widened. The following three sections will describe these intangible barriers, the Japanese government's moves to reduce them, and systemic changes working in the same direction.

[2] Gary Saxenhouse, "Evolving Comparative Advantage and Japan's Imports of Manufactures", in K. Yamamura, ed., *Policy and Trade Issues of the Japanese Economy* (University of Washington Press, 1982). The averages included mine products.

[3] Alan V Deardorff and Robert M. Stern, "The Economic Effects of Complete Elimination of Post-Tokyo Round Tariffs", in W. R. Cline, ed., *Trade Policy in The 1980s* (Institute for International Economics, 1983).
In those areas where industrial countries' tariffs are still protective (notably apparel and footwear, where imports from developing countries are considered a threat) Japan's tariffs are fully as high as those of all major industrial countries except the United States. But for those products where Japan has a clear competitive advantage, Japan's tariffs are significantly lower than in other industrial countries. This reduces its average tariff relative to other industrial countries.

Product standards

Product standards are frequently mentioned as Japan's most important intangible barrier to trade. Established by the central government to cover most domestic and imported manufactures, standards are of two kinds. First, there are awards for excellence. The Japanese Industrial Standards Committee awards the "JIS" mark to products made in factories where production methods and quality controls meet committee standards. Similarly, the Ministry of Agriculture, Forestry, and Fisheries awards the "JAS" mark (Japanese Agricultural Standards) to processed foods and forestry products from factories meeting its standards. The standards underlying the JIS and JAS marks are so rigorous that many small- and medium-sized firms do not apply for them. But the marks greatly increase product saleability and in many cases have become mandatory for sales to public bodies. Second, most products must meet *required* minimum standards. These are set by various government departments, with the advice of industry committees, and are designed to protect the health and safety of consumers and to assure overall product quality.

For foods and pharmaceuticals, where health and safety are involved, Japanese and U.S. approaches to setting required minimum standards are generally similar. But for other products, Japanese standards-setting is more concentrated in the central government and more comprehensive. In the United States, standards-setting is often left to local governments (*e.g.*, local plumbing and wiring ordinances) or trade associations (*e.g.*, standards for electrical appliances). There is also greater reliance in the United States on competition and consumer response, rather than elaborate standards requirements, to assure quality—and perhaps stronger industry resistance to central government standards-setting.

Until recently, the Japanese system of standards overtly discriminated against foreign suppliers. This was recognized in an official report of 1981,[4] and the barriers were described in some detail in a 1980 report of an unofficial group drawn from United States and Japanese business firms and government agencies.[5] The major discriminatory features identified were the following:

- The coveted JIS and JAS marks were not available to foreigners.
- Exporters to Japan were not members of the advisory standards-setting committees and had no direct channels for making their views known to the authorities since they were required to work through Japanese importers.

[4] Report of the Japan-United States Economic Relations Group (1981).

[5] United States-Japan Trade Study Group, *A Special Progress Report* (April 1980).

- The standards themselves were often "non-transparent"—*i.e.*, vaguely worded, hard to understand, and frequently not published in a readily available source.

- Testing requirements were more burdensome and expensive for imports than for domestically produced products. Japanese producers could choose among three methods of meeting standards: "type approval", based on factory inspection and product testing; "lot inspection", *i.e.*, testing samples from each lot; or individual inspection of each product. For the large producer, "type approval" is usually the cost-efficient choice. But until 1983, exporters to Japan could not use this method. Instead they were required to pass "lot inspection" or even individual inspection, and to work through a Japanese agent.[6]

Foreign exporters claiming to have been unfavorably affected by one or more of these restrictions have included foreign suppliers of plywood products, pharmaceuticals, agricultural chemicals, cosmetics, forest products, automobiles, electrical appliances, telecommunications equipment, and some types of industrial machinery.

These discriminatory features did not conform to the standards agreement under the General Agreement of Tariffs and Trade (GATT) that became effective in 1980. That agreement specified that standards should avoid unnecessary obstacles to trade, be transparent, conform to international standards where appropriate, and provide "national" treatment to foreign suppliers (*i.e.*, treat foreign suppliers the same as domestic suppliers). Although Japan initiated limited moves toward compliance in 1980, major efforts began only in 1983. At that time 16 statutes were amended in order to provide national treatment for foreign suppliers. Following the 1980-83 changes, foreigners were permitted to apply for the JIS and JAS plant approval marks, to elect the "type approval" route to meeting required standards, to become members of advisory committees, and to present their views directly to official standards-setting bodies.

Despite these changes, product standards remained a major irritant in Japan's trade relations. As foreign and domestic suppliers became subject to the same requirements, foreign pressures for change shifted to the standards themselves. Complaints were focused on the complexity of Japanese standards and their dissimilarity to international standards (where such existed), or to those in the supplier's own country. Objections were also raised to Japanese government inspection of factories outside Japan, and to the need for product testing in Japan rather than by approved foreign certification agencies. These aspects of Japanese standards requirements did not always violate national treatment precepts. However, they may have put a greater financial burden on foreign entrants to Japanese markets than they did on Japanese producers. If so, they may have discouraged imports of products for which foreign producers had a comparative advantage.

The Japanese authorities had made a start at addressing these complaints in 1983. But in 1985, spurred by a widening trade surplus and mounting tension with trading partners, they initiated a new broad-scale program scheduled to take effect gradually between 1985 and 1988. To meet the criticism that standards were unnecessarily complicated, some standards were to be eliminated altogether and many others were to be simplified. Instead of requiring Japanese inspection of foreign factories, Japan decided to accept approved foreign tests for many products and permit self-certification by suppliers of numerous products. The government also agreed to step up its study of international standards and to consult with other interested countries and international standards-setting bodies. For a few products, Japan also agreed to accept a few international standards in 1985 and 1986. (Details of the 1985 program are given in the appendix.) Since many aspects of the 1985 program remained to be spelled out, official U.S.-Japan trade groups continued to meet, hammering out specifics acceptable to both sides.

The distribution system as a barrier to imports

As with product standards, the Japanese distribution system has presented two types of barriers to imports: clear discrimination against imports in a few areas, and more pervasive systemic barriers to new entrants, foreign or domestic. Both sorts of barriers are crumbling—the discriminatory ones at the insistence of foreign suppliers and the systemic ones as part of a slow evolution.

The outstanding case of deliberate discrimination against imports, *per se*, in the distribution system has been that practiced by the government-owned Japan Tobacco and Salt Public Corporation (JTS). In addition to monopolizing the purchase of raw materials and the manufacture of tobacco and salt products, JTS controlled the *distribution* of tobacco products until 1985. By limiting the number of retailers permitted to sell foreign cigarettes and restricting advertising expenditures, it limited imports to about 2 percent of total sales. In April 1985, JTS was "privatized", becoming Japan Tobacco (JT), a "special corporation" under government jurisdiction.[7] In response to political pressure from Japanese tobacco growers, it will continue to monopolize purchases of tobacco and the manufacture of cigarettes and other tobacco products. But it has relinquished its con-

[6] *Operations of the Trade Agreements Program*, 35th Report (1983) and United States International Trade Commission (June 1984).

[7] In the foreseeable future, JT will not become privately owned, as the word "privatized" (used in the official description of the change) might suggest. The details of the privatization and market prospects for JT and foreign suppliers are discussed in "The Tobacco Monopoly Goes Private", *Economic Eye, a Quarterly Digest of Views from Japan*, Japan Institute for Social and Economic Affairs (June 1985).

Table 1
Distribution of Sales by Japan's Retailers and Wholesalers by Number of Persons Engaged per Establishment
In percent of total sales

Number of persons engaged *	1954	1960	1974	1982
Retailers				
One to four	58.8	48.3	34.1	32.8
Five to forty-nine	32.4	38.6	44.8	47.0
Fifty and over	9.1	13.1	21.2	20.0
Wholesalers				
One to four	7.8	5.7	4.0	5.3
Five to forty-nine	56.5	50.6	39.0	41.3
Fifty and over	35.7	43.9	57.0	53.4

Percentages may not add to 100 due to rounding.
* Includes proprietors, family members, and corporate officers.
Source: *Japan Statistical Yearbooks.*

trol over the *distribution* of tobacco products and will allow foreign cigarettes and other tobacco manufactures to compete freely by allowing them unlimited access to wholesale and retail distribution channels.

A wider-spread problem for foreign suppliers of many consumer goods has been the barrier to new entry, domestic or foreign, created by exclusive dealer arrangements. Such arrangements thrived in the highly fragmented distribution system of the early postwar years but are losing importance as the distribution system changes.

In the early postwar period, the small store was predominant in Japanese retailing (Table 1). In 1960, for example, nearly 50 percent of all retail sales were made in establishments of one to four employees and only 13 percent in stores with 50 or more employees. Linking manufacturers to retailers was a network of national, regional, and local wholesalers, which also tended to be small. Producers of manufactured consumer goods easily dominated this fragmented distribution system, either by direct ownership of some wholesalers or by exclusive dealer arrangements. Wholesalers in turn often made exclusive agreements with retailers. Given their small size, most retailers had little ability or incentive to resist such arrangements.

However, changes in the Japanese economy gradually forced changes in the size of the distribution unit. As the ownership of automobiles and refrigerators, rare in the 1950s and early 1960s, became common later in the 1960s and after, the need for small retail stores close to home diminished. At the same time, increasing competition in labor markets in the 1960s increased the need for larger, more labor-efficient distribution units. The government contributed to the shift to larger distribution units by making low-interest loans to wholesalers and retailers for relocating and modernizing. By the mid-1970s, only 34 percent of all retail sales were made in establishments with one to four employees and sales of stores with 50 or more employees had risen to 21 percent of the total. The scale of wholesalers increased correspondingly.[8]

Since the mid-1970s, however, the trend toward larger retailers and wholesalers has slowed. At least part of the explanation lies in changing government policy. As the growth of employment opportunities in manufacturing diminished, government policy shifted from fostering more efficient operations to protecting the small retailer and employment in retailing by limiting the size of retailers. A 1974 law required Ministry of International Trade and Industry approval for construction of any retail store of 1,500 square meters or more (3,000 square meters in ten large cities). Since then, several prefectures have enacted even more stringent regulations.

However, changes in the scale of retailing that had occurred before the mid-1970s and the continued increase in the proportion of mid-sized retailers were enough to loosen the grip of exclusive dealer arrangements in some areas. Many larger retailers, especially in consumer electronics, have gone into high-volume discount sales, bypassing wholesalers altogether and dealing directly with a number of competing manufacturers.[9] Wholesalers, fighting for their existence, are also beginning to avoid exclusive marketing agreements and are offering a wider variety of products.[10]

Developments of this sort should ease entry for all new market participants, including foreign suppliers. However, these trends seem to be strongest in consumer electronics, where few if any foreign suppliers are competitive. In retail areas where imports should be competitive, some distribution difficulties persist. A recent government survey of distribution markups for domestic and imported products found that for whiskeys, candies, edible oils, men's overcoats, and footwear, markups on imports were double those on domestic products.[11] Even after allowing for the inclusion of tariffs in the markup on imports, the discrepancy between markups for imports and those for domestic products remained large. The difference in markups suggests the presence of exclusive distribution arrangements. The resulting high price for imports has probably limited the sale of imported products.

8 This description of the evolution of the Japanese distribution system draws heavily on Edward J. Lincoln, "The Zebra Stripes or a Tale of Distributus Japanicus and the Economists", in M. Harvey and R. Lusch, eds., *Marketing Channels: Domestic and International Perspectives* (University of Oklahoma Press, 1982). However, Lincoln focuses on the efficiency of the system.

9 "Home Electric Appliances: High Volume Retailers are Changing Distribution Patterns", *Daiwa Bank Monthly Research Report* (December 1985).

10 "Wholesalers Struggle to Ride Out Stormy Rationalization in Distribution", *Mitsubishi Bank Review* (May 1985).

11 A report by Japan's Council on Price Stabilization, summarized in *Japan Economic Journal* (November 23, 1985).

Government procurement

In Japan as in other industrial countries, government procurement has favored domestic producers. To reduce this discrimination, the Tokyo Round included an agreement on government procurement, which Japan and most other industrial countries have accepted. This requires that foreigners be permitted to bid on government contracts valued at SDR 150,000 (about $165,000-U.S.) or more, and that bidding procedures be "transparent".

Interest in the Japanese government's procurement of industrial products has been focused on Nippon Telephone and Telegraph (NTT) which has purchased annually about $2-3 billion of telecommunications equipment in recent years. Following the Tokyo Round agreement and a special bilateral agreement with the United States in 1981, NTT opened its procurement to foreign bidders. The modest rise in its foreign purchases that followed proved disappointing to foreign suppliers. Judging from complaints registered with GATT in 1983, Japan was especially remiss in its reliance on single tendering, but was also criticized for short bid deadlines, short delivery times, maximum price specifications, and complex qualification requirements. Somewhat similar criticisms were made of other countries as well.[12]

In its market-opening package of 1985, Japan attempted to meet these complaints. It promised to review single tendering (acknowledging that this method should be used only exceptionally), to increase bid times (from 30 to 40 days), and to simplify qualification procedures. It also expanded the number of government agencies and corporations which would open their procurement to foreign bidding. However, there are still some important omissions such as the National Space Development agency, the sole government purchaser of communications satellites.

In the meantime, however, the opportunities for marketing sophisticated telecommunications equipment and computers have shifted to the private sector. This shift is partly because NTT was "privatized" [13] in 1985, thus moving a major purchaser of computers and sophisticated telecommunications equipment from the public to the private sector. But it is also because the telecommunications industry has been transformed by breaking the NTT monopoly over telecommunications and permitting the entry of foreigners.

In Japan the telecommunications industry is now divided into two branches: common carriers and services known as Value-Added Networks (VANs). The latter include data processing, computer linkages, teleconferencing, and videotex. Foreign firms may hold no more than one-third interest in common carriers but are permitted 100 percent ownership of VANs. A number of large U.S. firms have entered or are about to enter the VANs area, alone or with Japanese partners including NTT. Since VANs were slow to develop in the period of the NTT monopoly, experienced foreign firms may have at least a temporary technological advantage.

Both common carriers and VANs (domestic and foreign) constitute a rapidly expanding market for sophisticated telecommunications equipment, computers, and software. NTT has pledged to conform to the procurement policies to which it had been committed as a government corporation under the GATT agreement on government procurement. Further, since private firms, including NTT, are now permitted to buy foreign communications satellites, a market for the U.S. product has been opened. In view of the importance of standards for computers and software in the competitive and rapidly growing telecommunications market, a U.S.-Japan committee was organized to negotiate the development of standards. As a result, standards and standards procedures originally proposed by Japan have been simplified.[14] Manufacturer-generated test data will be accepted and standards will be limited to insuring that the equipment does not harm the Japanese telecommunications network.[15] Bilateral negotiations with the United States covering these and other points were successfully concluded in January 1986.

Trade consequences of eliminating intangible barriers to imports

Now that Japan's intangible barriers to imports of manufactures are falling, the natural question is how much of an increase in imports of manufactures can be expected as a result. We start with a very rough estimate of the maximum increase in Japan's imports of specified manufactured products that could ultimately come from reducing intangible barriers to the levels prevailing in the United States and the EC countries. These estimates are based on the presumption that, in the absence of trade barriers or subsidies to domestic output (or with uniform low trade barriers and subsidies across countries), countries with roughly similar comparative advantage in producing a given product will have similar propensities to import it.[16] These propensities are measured as

12 Italy, France, and the United States were faulted for short bid deadlines, and Italy for publishing few tenders. The United States was criticized for proliferation of "Buy American" requirements. United States International Trade Commission, *op. cit.*, page 89.

13 The NTT Act of December 20, 1984 made NTT a private company as of April 1, 1985. However, the government still holds all of NTT's stock issued on that date. It will be sold to the public gradually, beginning in 1986, but foreigners will not be permitted to purchase it.

14 *Operation of the Trade Agreements Program*, U.S. International Trade Commission, Publication 1725 (July 1985), pages 148-149.

15 *Annual Report on National Trade Estimates*, The U.S. Trade Representative, Executive Office of the President (1985), page 119.

16 It might be argued that Japan's imports should not be expected to conform exactly to our basic assumption (*i.e.*, that countries with similar comparative advantage in trade of a given product will have similar propensities to import that product) since Japan's higher propensity to import raw materials might lead to lower propensities to import manufactures. However, these basic international differences in resource endowment are at least partially reflected in Japan's exceptionally high comparative *dis*advantages relative to other countries for raw materials, and its exceptionally high comparative advantages in some manufactured products.

Table 2

Comparative Advantage Indicators* for Japan, the United States, and the European Community

Selected industrial product groups

Products grouped according to Japan's comparative advantages relative to the United States and the European Community	Japan	United States	European Community
Much stronger			
Consumer electronics	5.6	0.6	0.4
Road vehicles	3.9	1.3	1.2
Roughly similar or somewhat weaker			
Office and data processing machinery	2.9	3.0	0.8
Electrical machinery not elsewhere specified	1.9	1.5	1.3
General industry machinery	1.4	1.7	2.2
Professional, scientific, and control instruments	1.2	3.0	1.5
Much weaker			
Chemicals	0.5	1.7	2.2
Pharmaceuticals	0.5	1.7	2.5
Essential oils and cosmetics	0.2	1.4	3.0
Fertilizers	†	1.2	0.8
Cork and wood products	0.2	0.6	0.5
Clothing	0.2	0.1	0.9
Beverages	0.1	0.2	4.4
Tobacco and manufactures	†	2.6	0.4

* Ratio of share in OECD imports of given product group to share in OECD imports of all products. Based on data for 1983 as published in OECD, *Foreign Trade by Commodities, Volume II, Imports*. Intra-European Community trade has been excluded from the OECD imports total and the European Community share.

† Less than 0.05.

the ratio of imports to GNP. We approximate comparative advantage in each product group by the ratio of the country's share in *supplying* world imports of the product in question to its share in *supplying* world imports of all products.[17] A ratio significantly higher than one denotes comparative advantage.

Table 2 provides a rough snapshot indicator of the comparative advantage of Japan, the United States, and the EC in 1983 for those product groups affected by Japan's intangible trade barriers described in the preceding sections.[18]

For consumer electronics and road vehicles, it is clear that Japan has an overwhelming comparative advantage relative to the United States and the EC. For office machinery (including computers), the comparative advantages of Japan and the United States are quite similar. For electrical machinery, a product group which includes both sophisticated telecommunications equipment and consumer electrical appliances, Japan's comparative advantage is slightly greater than the United States'. For general industrial machinery and professional, scientific, and control instruments, Japan has a weaker comparative advantage than the United States and the EC. For chemicals, wood products, clothing, beverages, and tobacco products, Japan has a decided comparative disadvantage while the United States and the EC have a strong comparative advantage in some of them.[19]

Table 3 shows strikingly lower import propensities for Japan than for the United States and the EC in virtually all product groups. This is true not only in cases where Japan has a strong comparative advantage but also in cases where similar comparative advantage would lead one to expect similar propensities. It is also true in the case of products for which Japan has a comparative disadvantage while the United States and/or the EC have a comparative advantage. Since tariffs and quota restrictions are low in all of these countries for most affected product groups, this asymmetry between comparative advantage and propensity to import in Japan suggests that its intangible barriers are in fact restrictive.

Table 3 also gives an estimate of the potential long-run increase in Japan's manufactured imports from a lowering of its intangible barriers for the products shown in the table to the level prevailing in the United States and the EC. Total manufactured imports could rise by 27 percent while total imports could rise by 7 percent. (This would raise Japan's total manufactured imports by about three-quarters of a percent of GNP.) Over half the increase should come in chemicals (including pharmaceuticals), computers, data processing equipment, and electrical machinery (including sophisticated telecommunications equipment). On the basis of current trading patterns, the United States' share of the overall gain should be at least half.

The foregoing estimate is a maximum in the sense that it represents the rise in imports of specified products that could be expected if Japan's intangible barriers to those imports were reduced to the generally lower U.S. or EC levels. Since barrier reductions now in prospect are not complete, their import consequences are likely to be lower than these maximum estimates.

Conclusion

We have found that although Japan's tariffs and quantitative restrictions are lower than in other industrial countries, its

17 This measure was developed by Bela Balassa in "Trade Liberalization and 'Revealed' Competitive Advantages", *Manchester School of Economic and Social Studies* (May 1965).

18 As a matter of convenience, OECD imports from all sources are taken as a proxy for world imports. The year 1983, the latest for which the desired data were available, has the advantage of being the year Japan seriously embarked on reducing its intangible barriers to trade. Processed foods, though affected by intangible barriers to imports, are omitted for lack of OECD trade data.

19 For wood products, clothing, and footwear, Japan, the United States, and the EC are all at a comparative disadvantage (Japan more than the others)—which may explain their universally high tariffs in those areas. Comparative advantage in these areas belongs to the developing countries.

intangible barriers have remained significant. Such barriers—product standards, the distribution system, and government procurement—have included elements of discrimination against imports as well as systemic impediments to all newcomers, domestic and foreign. As a result of heavy pressure from its trading partners, Japan has already reduced measurably many discriminatory features of standards-setting and government procurement and is in the process of doing more. In two programs announced in 1983 and 1985, the Japanese government has undertaken to greatly reduce systemic barriers in standards by simplifying the standards themselves and the certification procedures required to meet them. Moreover, a natural evolution of the wholesale and retail distribution system—mainly a move toward larger, more enterprising, and independent retailers—is gradually reducing systemic barriers in that area.

Other things remaining the same, reduction of intangible barriers to U.S. or EC levels for affected products could

Table 3

Estimating the Long-Run Consequences of Eliminating Intangible Barriers to Japan's Imports

Products grouped according to Japan's comparative advantage relative to the United States and the European Community	Japan's imports in 1983 In millions of dollars	Imports as percent of GNP			Ratio of estimated/ actual imports for Japan	Japan's estimated imports In millions of dollars	Estimated change induced by lowering intangible barriers		
		Japan	United States	European Community	Japan (estimated, intangible barriers lowered)*			In millions of dollars	Percent of total 1983 imports	Percent of 1983 imports of manufacturers
Much stronger	**1,083**						**1,083**	**0**		
Consumer electronics	464	0.038	0.352	0.284	0.038	1.00	464	0		
Motor vehicles	619	0.052	1.138	0.444	0.052	1.00	619	0		
Roughly similar or somewhat weaker	**5,178**						**8,834**	**3,656**	**2.9**	**11.6**
Office and data processing machinery	1,068	0.090	0.211	0.416	0.211	2.34	2,504	1,436	1.1	4.6
Electrical machinery (not elsewhere specified)	2,051	0.174	0.392	0.382	0.209†	1.2 †	2,461	410	0.3	1.3
General industrial machinery	1,004	0.085	0.150	0.231	0.150	1.76	1,771	767	0.6	2.4
Professional, scientific, and control instruments	1,055	0.089	0.063	0.177	0.177	1.99	2,098	1,043	0.8	3.3
Much weaker	**9,096**						**13,965**	**4,869**	**3.9**	**15.4**
Chemicals	7,008	0.593	0.341	0.660	0.858	1.45	10,140	3,132	2.5	9.9
Cork and wood products	172	0.015	0.045	0.083	0.045‡	3.00	516	344	0.3	1.1
Clothing	1,511	0.127	0.316	0.369	0.210‡	1.66‡	2,508	997	0.8	3.2
Tobacco products	93	0.045§	0.023§	0.066§	0.086	1.91	177	84	0.1	0.3
Beverages	312	0.026	0.089	0.028	0.052‡	2.00‡	624	312	0.2	1.0
Total of above	**15,357**						**23,882**	**8,525**	**6.8**	**27.0**
Memorandum:										
Imports of manufactures‖	**31,532**									
Total imports	**125,017**									

Calculated percentages may not add to totals due to rounding.

* The basic assumption, that in the absence of barriers, countries with similar comparative advantage have similar import propensities (defined as imports as a percent of GNP), is taken to imply the following:

- Products for which Japan has a strong comparative advantage: no change in import propensities.
- Products for which Japan's comparative advantage or disadvantage is roughly similar to that of the United States or the EC: Japan's import propensity would rise to that of whichever has the more similar comparative advantage.
- Products for which Japan's comparative advantage is decidedly lower than that of the United States and the EC: Japan's propensity is raised to 1.3 times the higher of the United States and the EC propensities. This seems conservative in light of differences in import propensities for products where competitive advantages are similar.

Exceptions to this procedure are footnoted separately.

† In this heterogenous product group (which includes consumer and sophisticated industrial equipment) the difference in income propensities to import is too large to be explained by Japan's slightly higher comparative advantage. Japan's import propensity is therefore raised by 20 percent.

‡ Some of the discrepency between Japan's propensity to import and the propensities of the United States and the EC are due to higher tariffs, in the case of wood products and alcoholic beverages, and to strict import restraints under the multi-fiber agreement for clothing. The increase in imports assumed to follow from elimination of intangible barriers only is therefore somewhat arbitrary, but smaller than the increase that could be expected if all trade barriers were eliminated.

§ Tobacco and tobacco products. Trade in tobacco products not available separately.

‖ Standard International Trade Classifications 0.5, 0.6, 0.7, 0.8, 0.11, and 0.122. Processed foods omitted because trade data unavailable.

raise imports by 7 percent in the long run. However, barrier reductions on this scale do not seem likely.

These estimated long-term gains are not inconsequential. But they are too small to suggest that intangible barriers are the primary or even a major source of Japan's external trade surpluses—$56 billion total, and $42 billion of it with the United States in 1985.[20] Weak domestic demand growth and a high savings ratio, especially relative to the United States, and the strong dollar appear to have been much more important forces behind Japan's rising trade surplus over the past several years. Nevertheless, the gradual reductions of intangible barriers now in view should contribute modestly over time to reducing Japan's external trade surpluses, both total and bilateral with the United States.

[20] Both balances are f.o.b. Japan.

Dorothy Christelow

Appendix: Measures Introduced in 1985 to Liberalize Standards and Testing Requirements in Japan*

Industry	Conformance to international standards	Standards eliminated	Standards simplified	Approved foreign tests accepted	Self-certified
Flame-retardant material	†	1986 (20%)	†	1986	†
Special log construction methods	†	†	†	†	1986
Laminated lumber, strand board, and wafer board	†	†	1985	†	†
Medical equipment for animals	†	†	†	1986	1988
Drugs for animals	1987‡	1986	1985	1985	†
Feed	1988‡	1986	†	1985	†
Fertilizers	1985	1986	1985	1988	1986
Chemicals	1988	1986	1988	†	1988
Pharmaceuticals	1985	†	1985	1985	1988
Medical equipment	†	1988 (25%)	1985	†	1988
Cosmetics	†	†	1988	†	1988
Food color and additives	1985‡	†	†	†	1988
Carbonated beverages	†	†	†	†	1988
Electrical appliances	1988	†	1988	1985	1988
Radio equipment	†	†	†	1986	†
Telecommunication terminals	†	†	1985	†	1986
Cellular and cordless phones and pagers	†	†	1986	†	†
Microwave ovens	†	†	†	†	1985
Boilers and high pressure gas equipment	1986‡	†	†	1986	1986
Small boilers and steam cleaners	†	1985	†	†	†
Dust respirators	1986‡	†	1986	†	1985
Fire fighting equipment	1985	†	1986	†	1986 (10%)
Measuring instruments	†	1986	1987	1985	†
Motor vehicles (all)	1985‡	†	†	†	1986
Motor vehicles up to 1000 units per type per year	†	†	1986	†	1986
JAS§ mark of factory approval for agricultural and forestry products	†	†	†	1985	1985
JIS‖ mark of factory approval for other manufactured products	†	1988 (10%)	†	1986	†

* Actions usually apply to only some items in product groups specified. Percentages, when given, indicate affected proportion of items in product group. Years indicate the maximum time frame within which Japan will act. Years are the fiscal year beginning in April.
† No action planned.
‡ Consultation or study.
§ Japanese Agricultural Standards.
‖ Japanese Industrial Standards.

Housing Reform in New Jersey: The *Mount Laurel* Decision

New Jersey is in the process of establishing a unique and complex approach to providing low-income housing on a large scale. As a result of a State Supreme Court decision called *Mount Laurel II,* and as modified by the recently enacted Fair Housing Act, many municipalities throughout New Jersey could be obligated under a complex set of procedures and conditions to change their land use laws to encourage the provision of low-cost housing for many thousands of lower-income households.

The ramifications of the *Mount Laurel* decision are difficult to understand because of the multiplicity of issues and objectives—legal, economic, and social—that have evolved over the past 13 years. These issues and objectives include the social policy objectives behind building low-income housing in affluent suburbs, economic questions of financing such housing, technical issues of determining housing needs and assigning "fair share" obligations, and judicial methods for enforcing them. No comprehensive review of these various dimensions of *Mount Laurel* and the Fair Housing Act has yet been published. This article provides an overview of this diverse set of issues and objectives so that all the implications of *Mount Laurel* can be more fully understood.

In 1972, a trial court found that the zoning laws of the township of Mount Laurel excluded housing for poor people, and thereby violated the state constitution.[1] In 1975, the New Jersey Supreme Court ruled that not only Mount Laurel but *all* "developing" municipalities have an obligation to provide for their "fair shares" of the surrounding regions' lower-income housing needs. The *Mount Laurel* decision led to a great deal of litigation but little housing, so in 1980 the complaint reached the New Jersey Supreme Court again, in a case quickly labeled *Mount Laurel II*.[2]

After two years of deliberation, the Court handed down a unanimous decision supporting the challenge to exclusionary zoning practices. The opinion spanned 150 pages, and its emotional language clearly reflected the Court's dissatisfaction with municipal compliance with the rulings of *Mount Laurel I*. Finding strong measures necessary, the Court imposed a detailed enforcement mechanism intended to reduce the length of litigation and to encourage the provision of housing.

While the decision imposed a strict judicial remedy, the Court expressed a preference for legislative enforcement. In July 1985, New Jersey's Fair Housing Act was signed into law.[3] It set up an administrative process for resolving *Mount Laurel* complaints outside the courts.

The intense controversy over *Mount Laurel* arises chiefly from the magnitude of the obligations it imposes. But the policy debate, complicated by the multiplicity of issues and objectives, is far from resolved. While implementation of the legislative remedy has not yet begun, judicial and legislative

The author would like to thank William Fischel, James Jager, Karen Jezierny, Alan Mallach, Beth Pollack, Jerome Rose, Carolyn Sherwood-Call, and Mary Winder for their comments and suggestions on earlier drafts of this article.

1 Southern Burlington County N.A.A.C.P. v. Township of Mount Laurel, 67 N.J. 151 (1975) (*Mount Laurel I*). In this article Mount Laurel in normal type refers to the Township; in italics it can refer to the court cases, the mandated housing, or the general doctrine.

2 Southern Burlington County N.A.A.C.P. v. Township of Mount Laurel, 92 N.J. 158 (1983) (*Mount Laurel II*). Five other cases were combined with the Mount Laurel suit, and the Court indicated its belief that similar violations were widespread. As of the last published count, 135 Mount Laurel-related cases were on Court dockets, involving some 75 municipalities. New Jersey Administrative Office of the Courts, Press Release (June 10, 1985). There were other related State Supreme Court rulings, which are not discussed here.

3 Public Law 1985, Chapter 222.

action continues. Legal challenges have been raised to some provisions of the legislative approach, and constitutional amendments have been proposed in the legislature that would abridge the State Supreme Court's power to order *Mount Laurel* remedies. The Governor's recent State of the State address indicated his support for such an amend-

Box 1: Definitions and Details

To encourage compliance with the *Mount Laurel* mandate, and to reduce the scope of testimony and dispute, the Court tried to specify municipal obligations closely. Accordingly, it sought unequivocal definitions to the often-repeated language of the *Mount Laurel* mandate, a realistic opportunity for the construction of a municipality's "fair share" of the present and prospective need for lower-income housing in the surrounding housing region:

- A *realistic opportunity* is defined as one that is "at least sensible for someone to use" (page 261). The opinion warned that simply providing developers an opportunity to build low-income housing would not be satisfactory if builders would still choose to build higher-income housing on the property (page 260, footnote); under those circumstances affirmative measures would be required.

- *Lower-income housing* must be "affordable", defined as costing no more than 25 percent of income (page 221).*

- *Lower-income* actually refers to two groups, called low- and moderate-income. Income cutoffs for these groups are defined as 50 percent and 80 percent, respectively, of the area's median income, with adjustments for household size (page 221).† The relative proportions of low- and moderate-income units must be appropriately balanced, as determined by expert testimony.

- *Housing need* refers to low- and moderate-income households currently housed in "dilapidated" or "overcrowded" units (page 243), and to the projected growth of households in these income classes.

- *Present and prospective* refers to the obligation to provide not only for existing lower-income housing need, but also for the housing need projected into the future. It is the *regional* need that must be projected: the Court specified that the objective is not to gauge a municipality's likely future low-income housing needs with population projections based on its own past growth (pages 257-258). Such a procedure would invalidly reward a municipality for its past successful exclusion.

- A municipality's "*fair share*" of these regional needs, although a fundamental concept of the *Mount Laurel* doctrine, is never defined in the opinion. Employment growth (especially if accompanied by growth in tax base) was cited as an example of a "favored" factor (page 256). Factors (not specified) that would allow a community to benefit from past successful exclusion would not be approved. Beyond this characterization, "fair share" is left to determination in trial court based on expert testimony.

- The *housing region* specifies the urban areas from which a municipality derives its housing responsibility. The opinion noted that in earlier cases, the arguments over the specifics had prolonged litigation (page 256). The *Mount Laurel II* decision provided no definitive criteria for regional delineations, but the Court believed that the trial judges hearing these cases would soon reach consensus.

- The determination of *land appropriate for development*, that is, the communities that must grow to accommodate a portion of its region's housing needs, is based on designation of "growth area" in the State Development Guide Plan.†† In *Mount Laurel I* the test of suitability for new lower-income housing was based on whether the municipality was "developing". Even though there were six explicit characteristics of a developing municipality, the Court found that this previous test neither eliminated uncertainty nor guaranteed development only in accordance with "sound planning" (page 224).

* In the trial courts the income percentages used to gauge affordability have been 28 percent and 30 percent for owner-occupied and rental housing, respectively.

If provision of housing at these prices is not feasible, municipalities must still provide an opportunity for the provision of "least-cost housing", defined as housing produced at the lowest possible price consistent with sound planning principles and public health and safety. The opinion portrays this measure as a last resort and a remedy which would not be granted lightly.

† These definitions are used by the U.S. Department of Housing and Urban Development to define "low" and "very low" income. Still, the opinion allowed that "other specifications may be more reasonable".

†† New Jersey Department of Community Affairs, Division of State and Regional Planning, *State Development Guide Plan* (July 1980). The plan was not created expressly for use in *Mount Laurel* assignments. The decision did not determine which municipalities falling under the jurisdictions of the Pinelands Commission and the Division of Coastal Resources have any obligations.

Litigants can challenge the "growth area" designation only on limited grounds: they must show that the designation is arbitrary and capricious, or that circumstances have changed to render the designation inappropriate. Moreover, the maps must be revised every three years (the first deadline expiring January 1985), or a municipality's designation can be changed based on its actual behavior.

ment. The shift of majority power in the State General Assembly, and strong support in nonbinding referenda for such an amendment indicate that a political battle is certain.

The next section of this article describes the provisions of the *Mount Laurel II* opinion and analyzes its basic objectives. Following that is a similar treatment of the Fair Housing Act which focuses on the similarities and differences with the objectives of the judicial remedy.[4] The final section summarizes the remaining questions about implementing *Mount Laurel* and the ensuing economic and social consequences.

Mount Laurel II Court Rulings

The *Mount Laurel II* decision went far beyond previous rulings in the detail and severity of its enforcement measures. It called for determination of precise municipal obligations based on specific definitions and formulas, which apply even if exclusionary practices have not been identified in a municipality. In general, the Court ruled that every municipality must provide for its "fair share" of the surrounding region's lower-income housing needs as follows:[5]

- Every municipality in the state must provide "a realistic opportunity for decent housing" for the poor people within its borders living in dilapidated housing (page 214).[6] A major exception is made for those municipalities in which the concentration of lower-income housing need exceeds that of the surrounding region. These generally urban areas need not provide for all of their "indigenous poor" living in substandard housing.

- In these cases, some other (generally suburban) municipalities in the same housing region are obliged to provide realistic opportunities to build housing for some of those ill-housed poor. Only those municipalities containing land labeled by State land-use policy as "growth areas" have any obligation beyond their "indigenous poor" obligation (page 215).

- Municipalities are obliged to provide not only for their "fair share" of the region's "present" housing needs but also for "prospective needs"—those projected to exist in the future (pages 215-216, 218-219).

- All the lower-income housing under these rulings must be "affordable" to lower-income households (page 221, footnote).

Constitutional motivation

The New Jersey Supreme Court found that the Township of Mount Laurel violated the State Constitution by using its zoning power to exclude poor people.[7] Noting that a municipality's zoning laws are a police power of the State (albeit delegated to the municipality), the Court ruled that they must be exercised not just for the interest of the municipality's residents, but rather for the *general* welfare:

> "When the exercise of that power by a municipality affects something as fundamental as housing, the general welfare includes more than the welfare of that municipality and its citizens: it also includes the general welfare—in this case the housing needs—of those residing outside of the municipality but within the region that contributes to the housing demand within the municipality. Municipal land-use regulations that conflict with the general welfare thus defined abuse the police power and are unconstitutional. In particular, those regulations that do not provide the requisite opportunity for a "fair share" of the region's need for low- and moderate-income housing conflict with the general welfare and violate the state constitutional requirements of substantive due process and equal protection" (pages 208–209).[8]

The *Mount Laurel* rulings applied only to low- and moderate-income housing; municipal exclusion of middle- or upper-income housing was explicitly left untouched by this decision. While recognizing that these income groups may also have problems finding housing because of suburban land-use restrictions, the Court wrote that it was the lower-income households that were totally excluded (page 212).

Enforcement and implementation

In *Mount Laurel II* the call for precise obligations came not because the Court believed underlying obligations could be precisely known, but because it believed their specification would best implement the goals of *Mount Laurel* (page 257). Uncertainty in determining municipal obligations, the Court found, weakened the constitutional doctrine (pages 252-253), permitting "paper, process, witnesses, trials and appeals" (page 199) to delay compliance. It was the

[4] Comparison of the goals of *Mount Laurel II* and the Fair Housing Act should not be taken as legal analysis or as an opinion on the constitutionality of the Act. Rather, its purpose is to identify the public policy implications of both measures.

[5] The details and definitions implementing these general characterizations of the rulings are discussed in Box 1.

[6] Page references in the text refer to the *Mount Laurel II* opinion unless otherwise noted.

[7] The practice of using land-use regulations to restrict or eliminate lower-income housing is generally called "exclusionary zoning", which the Court's opinion defined as "zoning whose purpose or effect is to keep poor people out of a community" (page 201, footnote). These practices may include minimum lot or house sizes and prohibitions of apartment buildings and trailer parks.

[8] This finding generated a great deal of resentment on the part of municipalities in part because of the conflict between the principles of "equal protection" and "home rule". The zoning power is delegated to municipalities, and many local government officials argued strongly for the right to set their own policies. Even the *Mount Laurel II* opinion recognized the "fundamental legitimate control of municipalities over their own zoning, and indeed, their own destiny" (page 214).

Court's intention to begin a process that would eventually eliminate this uncertainty (pages 252-253).

To this end, the Court called for assigning "a precise region, a precise regional present and prospective need, and a precise determination of the present and prospective need that the municipality is obliged to design its ordinance to meet" (page 257).[9] Even the very existence of a remedial obligation could not be readily challenged.

The detail required to specify the obligation without ambiguity demonstrates the complexity of the enforcement problem (Box 1). Nevertheless, under *Mount Laurel II,* determinations of "fair share" remained substantially dependent on expert testimony. The Court relied on the eventual attainment of judicial consensus on the controversial issues.

Sale or rental of *Mount Laurel* units at prices "affordable" to lower-income households, in most instances, will require substantial subsidies. The Court suggested several ways that these housing units might be financed. It noted that government was becoming a less likely source of funds (page 263) and called attention to the devices which did not require explicit government subsidies. The Court's suggestions included:

- *Providing density bonuses to builders.* A density bonus permits a developer to build middle- and upper-income housing at higher densities (either with multifamily buildings or with more single-family units to the acre) than zoning laws would otherwise allow—in exchange for providing additional lower-income housing units, sold or rented below cost (page 266). In practice such arrangements have typically called for one lower-income unit for every four higher-density market-price units. Where market-price units are scarce (due to zoning or other reasons), permission to build such units increases the value of the land; these gains are used to help finance the lower-income units.[10] In the language of *Mount Laurel* implementation, the "density bonuses" are used to generate "internal subsidies" for the "*Mount Laurel* units".

- *Using mandatory set-asides.* If a density bonus does not provide developers sufficient incentive to choose lower-income housing over a middle-income development, the Court ruled that the inclusion or "set-aside" of lower-income units can be required within a land-use zone (page 267).

- *Providing tax abatements.* The ruling expressly permitted a trial court to order tax abatements for lower-income housing (page 264).

- *Obtaining Federal subsidies.* Municipalities can actively seek grants and take actions required for private groups to obtain Federal aid (page 264).

Judicial enforcement measures

The Court also spelled out three judicial procedures to expedite litigation. First, to speed consensus on the many technical issues, New Jersey was divided into three judicial regions, with a single trial judge hearing all *Mount Laurel* cases in a region. Second, *Mount Laurel* cases are generally to be heard with one trial and one appeal. Before *Mount Laurel II,* rulings on technical issues (such as whether the municipality was "developing") were contested individually, leading to many appeals and remands.[11] Third, when a technical issue (such as the levels of present and prospective need in a region) is decided, the finding will have "presumptive validity" for other cases in the same region (unless circumstances are substantially different). Municipalities will be allowed to join in cases that would affect their own litigation, but the Court believed that most municipalities will be willing to stay out and abide by the findings.[12]

The Court also took an action which would increase the amount of *Mount Laurel* litigation. One of the most controversial provisions of the *Mount Laurel II* rulings, the "builder's remedy", was adopted to promote challenges to exclusionary zoning ordinances. Under its terms, a court orders that a municipality approve a specific development plan (usually including some kind of density bonus) put forth by a developer-plaintiff. The court may order such a remedy even if the municipality can demonstrate that another site is more appropriate for such a project (as long as the imposed remedy is consistent with sound planning principles [page 280]).[13] The "builder's remedy" attempts to give develop-

9 This overturned a ruling from the Court's earlier *Madison* decision, which required only a realistic opportunity for *some* low- and moderate-income housing, and in which precise formulas were deemed unnecessary (page 216). Also see Oakwood at Madison, Inc. v. Township of Madison, 72 N.J. 481 (1977). The reversal of this and related provisions was emphatic, as the Chief Justice wrote that "*Madison* has led to little but a sigh of relief from those who oppose *Mount Laurel*" (page 252).

10 This mechanism is described in a slightly different context in the opinion (page 261, footnote).

11 If a trial court finds a municipality's zoning invalid, it can order that the code be revised (generally within 90 days). To facilitate this revision the judge can appoint a special master. The master would not have powers beyond making recommendations, expressing opinions, and otherwise assisting the court. After the 90-day period elapses, the court determines whether the new ordinances meet the constitutional test, based in part on the master's testimony.

12 *Mount Laurel II* also provided some incentive for municipalities to expedite the litigation. When a court finds that a municipality provides for its "fair share" of regional lower-income housing need, it can grant a six-year repose from *Mount Laurel* litigation, barring a "substantial transformation" of the municipality. This is a broader application of the *res judicata* doctrine than usual, since it is less sensitive to changing circumstances in a municipality. This is another example of the Court making a special case of *Mount Laurel* (pages 291-292).

13 The opinion warned, however, that the "builder's remedy" should not be construed as an alternative to municipal procedures for seeking zoning variances (pages 280-281).

Box 2: The Review and Mediation Process

The administrative process begins with the municipality filing its "fair share plan" (as part of a "housing element") and a zoning ordinance to implement it, and then seeking the Council's approval or "substantive certification". If no person files an objection within 45 days, the Council reviews the municipality's plan (Section 14). Substantive certification shall then be issued if the Council finds that the municipality's plan and ordinance are consistent with the Council's rules and criteria as well as the provisions in the Act, and that achievement of the municipality's "fair share" is "realistically possible". If approval is denied or conditionally withheld, the municipality has 60 days to revise its petition in a manner satisfactory to the Council.*

If any person does object to subjective certification within the 45 day period, however, the Council must first attempt to mediate a resolution of the dispute between the parties (Section 15). If mediation is successful and the Council finds that its criteria have been met, then it issues a substantive certification.

If the Council's mediation attempts are unsuccessful, however, the matter is transferred to the Office of Administrative Law. The Fair Housing Act stresses expeditiousness, and requires that the evidentiary hearing be held and the initial decision issued no later than 90 days after the transmittal of the matter (unless the Director of Administrative Law extends the time for "good cause shown"). The administrative process ends with the ultimate decision made by the Council, with appeals taken to the Appellate Division of the Superior Court.

* Once certification is granted, the municipality has an additional 45 days in which to adopt the proposed "fair share" housing ordinance approved by the Council.

ers common interests with civil rights groups, making them willing to bear the costs of litigation that the latter groups cannot afford. Without this device, developer-plaintiffs had no assurance that *their* land would be rezoned, even after a successful challenge.[14]

Other social objectives of Mount Laurel

In addition to enforcing the underlying Constitutional obligation, the *Mount Laurel II* remedies incorporated other explicit and implicit objectives. First, the rulings embodied an explicit policy that poor people should live in adequate housing. Although the Court did not find that exclusionary zoning was solely responsible for the inadequate housing of poor people, it did rule that municipalities collectively must provide at least "a realistic opportunity" for decent housing for *all* lower-income households in the state.

Second, *Mount Laurel* also has the aspect of an income distribution policy. The opinion graphically depicts the disparity of lifestyle between the suburban well-to-do and the urban poor (pages 209-210); the remedy is to require decent housing to be provided at prices far below those typically paid by lower-income households, and generally well below cost.

The most important social policies implemented by *Mount Laurel*, however, explicitly involved land-use. Decrying "roads leading to places they never should be", the Court wrote that "[s]tatewide comprehensive planning is no longer simply desirable, it is a necessity recognized by both the federal and state governments" (page 236). To that end, municipal obligations were designed to be consistent with published state land-use policies. Moreover, allocation of regional need to municipalities was characterized as a problem of "conventional fair share analysis" (page 244), preferably determined by administrative planning agencies (page 250).

Perhaps the most controversial aspects of *Mount Laurel* seem to incorporate land-use policies based on social equity. In fact, "fair share" appears to be fundamentally a socioeconomic concept. For one thing, it refers to the social fairness of the geographic allocation of housing, rather than to the equitable assignments of financial costs. The opinion explicitly referred to the fairness of the land-use implications of assigning lower-income housing obligations to municipalities:

> "As for those municipalities that may have to make adjustments in their lifestyles. . . they should remember that they are not being required to provide more than their *fair* share [emphasis in the original]" (page 219).

In contrast, the opinion clearly states that "fair shares" of lower-income housing do *not* result in fair assignments of financial costs:

> "There may be inequities between and among these municipalities located within growth areas, as there undoubtedly are between all of them and municipalities outside of growth areas, for the tax and other burdens . . . *will not be fairly spread* [emphasis added]" (page 239).[15]

To implement its social objectives, the Court ruled that "socioeconomic" zoning, permitting only low-income housing *per se,* may be required if "social goals are to prevail

[14] To encourage challenges to exclusionary zoning, the Court also stressed the importance of a "liberal approach" with regard to allowing nonresidents to sue. In other contexts it would be necessary first for a nonresident to demonstrate injury resulting from the acts of a municipality. This demonstration was often difficult because of the lack of a direct relationship with the municipality. In *Mount Laurel* cases, however, the Court found that exclusionary zoning by its very nature hurts nonresidents and prevents these direct relationships with the municipality from forming (page 337). A summary of the issues appears in William A. Fischel, *The Economics of Zoning Laws,* (Baltimore: Johns Hopkins University Press, 1985), pages 54-55. Also see *Housing for All Under Law,* (Cambridge, Massachusetts: Ballinger Publishing Co., 1978), pages 98-103.

[15] The Court found that these inequities were the consequence of state land-use policies, and therefore compensation should be determined by the legislature, not the courts.

over neutral market forces" (page 274, footnote). The opinion attributes to municipalities an affirmative responsibility to counter the destructive effects of economic segregation.[16] Accordingly, the Court ruled that "if sound planning of an area allows the rich and middle class to live there, it must also realistically and practically allow the poor" (page 211). To this end, the decision calls for affirmative measures when simply removing restrictions on multiunit structures would result in the construction of only high-priced middle-income housing (page 261). The Court similarly tied a municipality's acceptance of factories to an obligation to provide housing for workers (pages 211, 256).[17]

Nowhere does the opinion suggest that these social goals approximate the outcomes that would have prevailed in the

[16] For example, the Court wrote that "[z]oning ordinances that either encourage this process *or ratify its results* are not promoting our general welfare, they are destroying it [emphasis added]" (page 211, footnote).

[17] The Court, in giving special attention to tax base growth (Box 1), may have sought to assign obligations based on "ability to pay". But the Court's description of the unfairly distributed costs argues against that notion (see above text). The Court may instead have sought to attack the zoning practice of encouraging fiscally profitable land uses at the expense of unprofitable uses, such as lower-income housing. In fact, the Court may have sought to provide fiscal incentives to *encourage* the construction of lower-income housing, by tying a housing obligation to all desirable commercial and industrial development.

Box 3: Legislative Policy on "Fair Share"

Under the terms of the Fair Housing Act, the Council on Fair Housing is responsible for specifying the criteria and guidelines by which municipal housing elements will be judged, subject to several qualifications:

Housing regions, determined by the Council, will consist of two to four contiguous counties that exhibit significant similarities. The regions should approximate Primary Metropolitan Statistical Areas (Sections 4b and 7a).*

The Act also carefully defined the methods for *projecting prospective need* (Section 4j). Estimates are to be made of "reasonably likely" growth based on approvals of development application, real property transfers, and economic projections provided by the State Planning Commission. The governor's conditional veto message (which added this language) stressed the need to avoid abstract or speculative theories.

The Act does not define "fair share", but specifies how these shares must be "credited" and "adjusted" and how they may be "limited", "transferred", and "phased in". "Fair shares" must be computed after *crediting* on a one-to-one basis each current unit of (affordable) lower-income housing of adequate standard (Section 7c). Further, "fair shares" must be *adjusted* to assure suitability of development, including consistency with the designations of the State Development and Redevelopment Plan.† Adjustments would be required if providing the full "fair share" obligations would drastically alter the pattern of community development, or if vacant and developable land or adequate public facilities and infrastructure capacities are not available.

The Council also is permitted to place a *limit* on "fair share" allocations (Section 7e), based on a percentage of the housing stock, employment opportunities, or any other criteria it deems appropriate.

A municipality may propose the *transfer* of up to half of its "fair share" to another municipality—probably a central city—by means of a voluntary contract (Section 12).†† That is, it can satisfy part of its obligation by paying for housing built in another part of its housing region. This "regional contribution agreement" is subject to Council approval and must be in accordance with "sound comprehensive regional planning" and must provide for "a realistic opportunity for low- and moderate-income housing within convenient access to employment opportunities". If the agreement is subject to the scrutiny of a court, the Act requires challengers to provide "clear and convincing evidence" it is not a valid part of a "fair share" zoning ordinance.

The Act also provides for *phase-ins* of housing obligations provided in inclusionary developments (*i.e.*, those containing a substantial proportion of housing units affordable to a reasonable range of low- and moderate-income households) (Section 23e). Municipalities are given up to 20 years (for 2,000 lower-income units or more), and at least six years (for fewer than 1,000 units), to meet their obligations. "Fair shares", whether or not provided in inclusionary developments, can be phased in with the timing based on the size of the share, infrastructure considerations, available land, likely absorption rates, development priorities, and past performance in providing lower income housing. Trial courts must consider these criteria as well, but retain the right to their own determinations.

* This provision takes a stand on a controversial issue. For example, litigation involving the Township of Warren led to the use of an 11-county area proposed by the challengers.

† Additional factors affecting suitability of development include historic and environmental preservation, and the need for adequate land for open space, recreation, conservation, and farmland.

†† The recommended compensation for the receiving municipality was a weighted average of the costs of rehabilitation and new construction. Payments may also include an amount to pay for infrastructure or other costs generated by the development.

absence of past exclusion.[18] The Court's rulings instead seem to aim for specific land-use allocations that might never have otherwise occurred, even in a non-exclusionary housing market.

Mount Laurel II also allows municipalities some leeway in setting their own socioeconomic land-use policies. The opinion describes the state constitutional obligation to foster the "general welfare" as a regional concept (page 237). Municipalities must provide for a "fair share" of the housing needs of poor people only from the surrounding region, and are explicitly permitted to exclude others under the provisions of *Mount Laurel II*. That is, once a municipality has met its numerical obligation, it may zone with explicit regard to its fiscal situation (pages 259-260).[19] Although numerical obligations are imposed to promote enforcement, once they are met *Mount Laurel II* grants municipalities wide latitude in using their zoning power to influence the socioeconomic pattern of land use. This provision is not just a side effect of *Mount Laurel II*; it plays an important role in its implementation.[20]

The legislative response

Mount Laurel II expressed the Court's desire for legislative rather than judicial enforcement of the State's constitutional responsibility, and its dissatisfaction with prior legislative inaction (page 213). In July 1985 (over two years later), the Fair Housing Act provided a legislative response to this call.

An administrative alternative to litigation

The Act created the *Council on Affordable Housing* to administer a set of procedures providing an alternative to judicial enforcement (Section 5).[21] To the municipality, these administrative processes are entirely voluntary. In fact, the Act contains no mechanism to enforce the *Mount Laurel* obligation. Its principal purpose, rather, is to give municipalities an opportunity to keep *Mount Laurel* cases out of the courts (Section 2).

If a municipality submits to the Council its "fair share plan" and corresponding revisions to its zoning ordinance (before certain deadlines), any challengers to municipal zoning ordinances must exhaust the Act's review and mediation process before their complaint can be heard in the Appellate Division of the Superior Court (Box 2).

Cases currently before a court may be transferred to the Council's jurisdiction if the court finds no "manifest injustice" is done (Section 16). Cases instituted after the Act's effective date (or two months earlier) cannot be heard until the administrative remedies are exhausted. Even municipalities not currently subject to *Mount Laurel* litigation may preempt a prospective court challenge by seeking the Council's jurisdiction.[22]

The Act took the avoidance of judicial solutions one step further by imposing a moratorium on builders' remedies (defined in the Act as including all court-ordered density bonuses and mandatory set-asides) until the administrative procedures are operational (Section 28).[23] Under its terms, no builder's remedy will be granted to a plaintiff in any exclusionary zoning litigation filed after the *Mount Laurel II* decision, unless a final judgment has already been rendered.[24]

Assignment of obligations

Under the Fair Housing Act, municipalities propose their own "fair share" plans, subject to guidelines set down by the Council on Affordable Housing. The Council is directed to determine regions, estimate present and prospective needs in each region, adopt the criteria by which "fair shares" are assigned, and review "fair share plans" written by municipalities. It must announce "fair share" guidelines and criteria, subject to specific requirements (Box 3), before August 1, 1986 (Section 7). A municipality's plan must

18 While the decision calls exclusionary zoning a major cause of socioeconomic segregation, urban economists have argued that market forces, even in the absence of private or municipal discrimination, also lead to such segregation. For example, the standard Alonso-Mills-Muth model of land use leads to separation of high- and low-income households based on income elasticities of travel cost and the demand for housing. See, for example, Edwin Mills and Bruce Hamilton, *Urban Economics* (Glenview, Illinois: Scott, Foresman and Company, 1984). Along similar lines, John Yinger has argued that high-income households are willing to pay more for public services than lower-income households, leading to municipal segmentation along income lines. John Yinger, "Capitalization and the Theory of Local Public Finance", *Journal of Political Economy* 90 (October 1981), pages 917-943.

19 Municipalities' exclusionary zoning practices must be halted "to the extent necessary to meet their prospective 'fair share' and provide for their indigenous poor (and in some cases, a portion of the region's poor)" (page 259). Practices such as reserving areas for upper-income housing and zoning "with some regard to their fiscal obligations" are expressly permitted once the "fair share" goal is met (page 260). While the opinion observed that zoning laws must satisfy the general test of a "reasonable relationship to [a] legitimate governmental goal", such determinations were said to be beyond the scope of *Mount Laurel*.

20 These continued land-use restrictions may be crucial to the success of density bonuses and mandatory set-asides in financing *Mount Laurel* housing. If middle-class housing is to provide a subsidy for such units, they must earn an above-normal profit. This profit can persist in the long run only with persistent barriers to entry, such as zoning laws whose effect is to enforce scarcity of middle-income housing.

21 The Council's membership, nominated by the Governor subject to the approval of the legislature, was required to reflect a specific balance across political parties, geographic regions, and various public and private interests.

22 The advantage is that if the Council approves the plan, municipal compliance with its *Mount Laurel* obligation is granted "presumptive validity" in any potential litigation. Furthermore, a challenger's demonstration that the plan fails to provide for the community's "fair share" requires "clear and convincing evidence". Alternatively, a municipality can seek a declaratory judgment for a six-year repose in the Superior Court, as if the municipality had reached a satisfactory resolution in trial court.

23 The moratorium expires five months after the Council adopts its criteria and guidelines for determining "fair shares"—which is scheduled to occur no later than August 1986. (Section 7; see also the Governor's veto message (April 26, 1985), pages 6-7.

24 This qualification was added in the Governor's conditional veto message, out of concern for the unconstitutionality of a broader provision which would have reversed prior court rulings.

state its determination of its present and prospective "fair share" for lower-income housing and its capacity to accommodate those shares (Section 10). Detailed analyses and forecasts of the municipality's demographic, housing, and employment characteristics are required in support of the plan.

The Fair Housing Act also allows a municipality to satisfy up to half its "fair share" obligation by paying for housing located in another municipality. These "regional contribution agreements" are subject to Council approval on the basis of several criteria (Box 3).

The Act also assigns a crucial role to the State Planning Commission (Section 7). The legislation creating this body was not enacted until January 1986 (Public Law 1985, Chapter 398). The Commission will project statewide and regional housing needs and demographic changes, and also will devise the State Development and Redevelopment Plan. This land-use document will be the first created with an explicit role in the determination of *Mount Laurel* obligations (Section 7).

When enacting these new procedures, the legislature also provided state subsidies for rehabilitation and new construction of lower-income housing (Sections 20 and 21). First, an estimated $100 million from tax-exempt revenue bonds from the New Jersey Housing and Mortgage Finance Agency (which must be repaid from project revenues or from taxes) can be used for mortgage subsidies.[25] An additional $15 million from general revenues can be used for rental programs, conversions and moderate rehabilitation, and grants to municipalities or community groups.

In addition, $10 million was authorized for the Neighborhood Preservation Program, to pay for rehabilitation, conversions, acquisition and demolition, new construction, infrastructure, and other housing costs. Two million dollars of this total is appropriated from general revenues; the rest comes from an increase in the realty transfer tax earmarked for this program.[26] Eligibility is limited to municipalities with Council approval of their "fair share plans" or regional contribution agreements.[27]

Other policy objectives

The general objectives of the Act and the means of achieving them are essentially the same as *Mount Laurel II,* but there are significant differences. On the one hand, the Act's housing and income distribution policies are very similar to those of the Court rulings. Like *Mount Laurel II,* the legislative remedy calls for adequate housing for all lower-income households in New Jersey, provided at the municipal level. Neither remedy calls for meeting lower-income housing needs through "vouchers" or other rent subsidies to be used for existing housing, wherever the lower-income households choose.[28] Similarly, neither method specifically encourages "filtering" (where lower-income households move into existing housing vacated by middle-income households).[29] As income distribution policy, the disparity of lifestyle between the urban poor and suburban well-to-do is addressed by providing housing to lower-income households (either sold or rented) below cost.

On the other hand, the Act's land-use policies seem somewhat different from those of the Court rulings. The Act allows a municipality to satisfy up to half its obligation with housing built in urban areas. It is therefore likely that the lower-income housing provided under the Fair Housing Act would be more geographically concentrated in urban areas than under the judicial solution.[30] Regional transfers "maximize the number of low- and moderate-income units"; to an extent this may mean a tradeoff of some decentralization of the poor in favor of urban rehabilitation and adequate housing possibly built at lower cost (Sections 2f and 2g).

The use of regional "fair share" transfers indicates an additional policy difference, in that suburbanites are asked to help finance central-city housing. Any geographic allocation resulting from such transfers could have been specified directly with nontransferable "fair shares". Assuming that the allocation satisfies judicial standards of "fairness", the major impact of this device is to redistribute the financial costs from central city to suburb.

Even with these differences from the judicial remedy, financial obligations still depend heavily on "growth area" designation. As mentioned above, the Court believed that this allocation is not fair in a financial sense, and that it was the responsibility of the legislature to correct it. The Act did not address this issue, however, even though broader use of "regional contribution agreements" might have reduced the importance of state land-use policy on municipal financial burdens. Municipalities without land designated as "growth area" could have been assigned regional obligations (rather than responsibility only for their "indigenous" poor) to be satisfied with housing built in other parts of the region.

The legislative solution also incorporates a policy that

25 This estimate comes from the Governor's conditional veto message of the bill originally sent to him.

26 Public Law 1985, Chapter 225.

27 This restriction applies only after the first year after enactment, a period extendable by the Council.

28 While vouchers have been used to implement a "fair share" obligation *within* a municipality, the Mount Laurel remedies are not set up to allow the geographic distribution of lower-income households to be determined by consumer choice.

29 *Mount Laurel II* mentions filtering when it required "least-cost housing" if "affordable" housing were unfeasible (Box 1). Without the obligation for least-cost housing at a minimum, the Court found, filtering would not occur in suburban areas (page 278).

30 This is potentially a big change from the Court's conception. Many communities are likely to seek such "regional contribution agreements". However, it is unlikely that transfers of the full, legislatively permissible 50 percent of all *Mount Laurel* units will either be requested or approved.

communities should be rewarded for any prior provision of affordable lower-income housing. Its one-for-one credit against "fair share" for existing affordable lower-income housing has no counterpart in the *Mount Laurel II* decision. Such credits have been used, however, in the trial courts.

This feature complicates the concept of "fair share". *Mount Laurel II* defines present regional housing need in terms of lower-income households living in inadequate housing (page 243). If "fair shares" before credits add up to the estimated regional need, the sum of municipal obligations after credits for occupied units must fall short of the desired total.[31]

Remaining questions

Politically, legally, and economically, it is difficult to predict what will come of the Fair Housing Act. The Council on Affordable Housing has not yet promulgated its guidelines;[32] confirmation of its membership was not completed until mid-January 1986. The State Planning Commission was also created only in January 1986, and its membership must be appointed before it can draw new land-use maps. Ten municipalities have already sought Council jurisdiction only to be refused by the courts; the New Jersey Supreme Court heard their appeal in January. As the provisions of the Fair Housing Act phase in, cases approved for transfer may go through an administrative course of two years or longer, only to return to the courts.

The issues discussed in this article will remain in the public debate. Litigants will have to decide whether to seek Council jurisdiction; courts will have to decide whether to approve their requests. The State Supreme Court may rule on the constitutionality of provisions of the Act. The legislature may seek to modify the administrative remedies or to amend the state constitution to specify the *Mount Laurel* enforcement more to its liking. Other states may seek *Mount Laurel*-type remedies.

There are many economic questions as well. It is difficult to estimate how much subsidy will be needed to induce developers to build below-cost, lower-income housing; it is even harder to gauge the long-run effectiveness of density bonuses and other measures in generating such funds. Also unknown are the impacts on housing markets, central city development, municipal finances, and the job prospects of *Mount Laurel* households. Thirteen years after the first trial court ruling, *Mount Laurel's* impact on the New Jersey landscape is still uncertain.

Daniel E. Chall

[31] It is possible to design obligations such that after credits, the shares add up properly. But the sum of pre-credit shares then would exceed 100 percent of regional need. This makes the requirement of a "one-for-one" credit less meaningful.

[32] Although at the time of this writing the Council's guidelines have not yet been released, examination of an earlier attempt at an administrative solution may suggest what factors municipalities will be expected to incorporate into their "fair share" determinations. A Revised Statewide Housing Allocation Report for New Jersey Division of State and Regional Planning (May 1978) circulated "fair share" formulas for public comment. Its formulas reflected physical capacity (vacant land), ability-to-pay (nonresidential property and personal income), and "relative responsibility" (job growth). Because the legal authority for the document was rescinded in 1982 (moreover, the Division no longer exists), the Court did not use its formulas to allocate "fair shares".

Adjustments in Buffalo's Labor Market

Buffalo, a major manufacturing center in New York State, provides a classic example of the difficult labor market adjustments that result when the demand for the output of a region's firms drops sharply. The employment decline in the Buffalo metropolitan area[1] during the early 1980s is the most recent and severe example of long-term trends affecting its economy. Buffalo was vulnerable to a severe downturn at the end of the 1970s because many of its earlier strengths—location, early development, and well-paying heavy manufacturing industries—proved to be serious handicaps.

As a result, the back-to-back recessions of the early 1980s and the appreciation in the value of the dollar hit Buffalo harder than the nation as a whole. While national manufacturing employment dropped 15 percent between 1979 and 1983, the Buffalo metropolitan area lost about 30 percent of its total manufacturing employment. Unemployment at first rose sharply—to about 15 percent in late-1982. But since then, adjustments to this economic decline have occurred in the region's labor market. In late-1985, the metropolitan area's unemployment rate stood at about 7.5 percent, a six-year low. Nevertheless, many long-term economic problems remain for the region.

The purpose of this article is to discuss why these economic problems endured. It begins by describing the pre-1980 employment base in Buffalo, highlighting Buffalo's early role as a manufacturing center and its postwar changes in employment. It then analyzes why Buffalo's economy was vulnerable to decline in the late 1970s and describes the extent of job losses during the recessions of the early 1980s. Next, this article discusses the three major economic adjustments that have occurred in Buffalo's labor market since the late 1970s:

- A drop in the area's labor force.
- A decline in wages paid to Buffalo's workers in most industries and occupations compared with similar workers elsewhere.
- Employment growth in industries paying workers much less than the declining manufacturing industries.

The analysis concludes by showing that even with these rather dramatic changes, Buffalo's adjustment to its shrinking manufacturing sector continues, and its economy remains vulnerable.

Buffalo employment before the 1980s

For 150 years, Buffalo has been an important hub of commerce.[2] With the opening of the Erie Canal in 1825, Buffalo quickly became a center of food processing, transforming the agricultural products of the Midwest into goods for eastern cities. By the late 1850s, Buffalo was emerging as an important area for primary metal production, combining iron ore shipped across the Great Lakes or through the Erie Canal with coal from western Pennsylvania. Abundant hydropower from the Niagara River was harnessed to generate cheap electricity even before 1900. By the turn of the century, the city of Buffalo had a population of 350,000, and was the second largest rail terminal and third largest port in the country.

[1] The Buffalo metropolitan area consists of Erie and Niagara Counties.

[2] For a general history of Buffalo, see Mark Goldman, *High Hopes: The Rise and Fall of Buffalo, New York* (Albany: State University of New York Press, 1983).

Buffalo's important heavy manufacturing industries developed soon after 1900. In 1904, the Lackawanna Iron and Steel Company relocated from Scranton to just south of Buffalo. By 1930, 50,000 people were working in iron, steel, and other primary metal industries. In that year, 10,000 people also worked in auto factories and 4,000 in electrical machinery manufacturing.[3] In 1935, Bethlehem Steel, the new owner of the Lackawanna mill, modernized the plant to produce sheet metal for cars. The investment paid off in 1937 when General Motors built a new Chevrolet plant near Buffalo. Buffalo's employment peaked during World War II at nearly 460,000 workers; nearly 225,000 of them worked in war-related industries producing steel, airplanes, tanks, and ships.

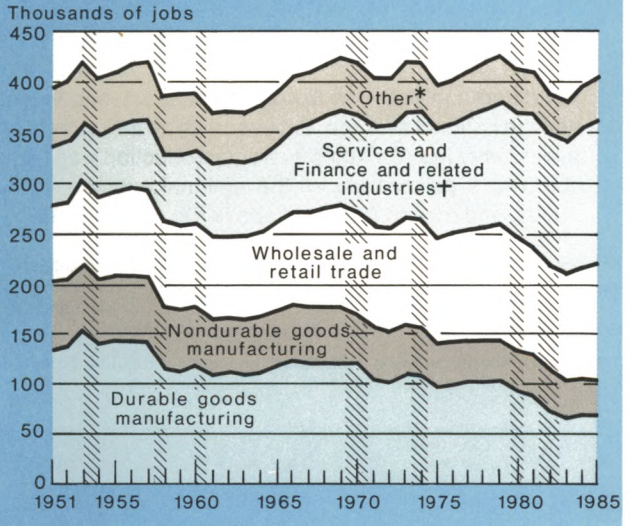
During the postwar period, private employment in the Buffalo area has fluctuated between 375,000 and 425,000 (Chart 1). Buffalo's manufacturing employment declined in each postwar recession but never regained pre-recession levels in the subsequent recoveries. The largest declines in manufacturing employment before the 1980s occurred in the recessions of the late 1950s and mid-1970s. Services and other nonmanufacturing industries gradually became a larger percent of jobs in the Buffalo area as manufacturing declined in importance.[4] In 1979, however, manufacturing still remained more important in Buffalo than in New York State and nationally (Chart 2). Buffalo's shift toward nonmanufacturing jobs was similar to national trends, but for the

[3] United States Department of Commerce, Bureau of the Census, *Fifteenth Census of the United States: 1930, Volume III, Part 2* (Washington, D.C.: United States Government Printing Office, 1932), pages 306-307.

[4] The employment categories used are those of the United States Census Bureau and Department of Labor. Services include business and personal services plus private sector health, education, and social services. Other nonmanufacturing categories include finance, insurance, and real estate; wholesale and retail trade; construction; and transportation and public utilities (except the postal service).

Chart 1

Private Nonagricultural Employment in the Buffalo Area



Data for 1951-84 are annual averages. Data for 1985 are for June 1985. Buffalo area includes Erie and Niagara Counties.

Shaded areas represent periods of recession, as defined by the National Bureau of Economic Research.

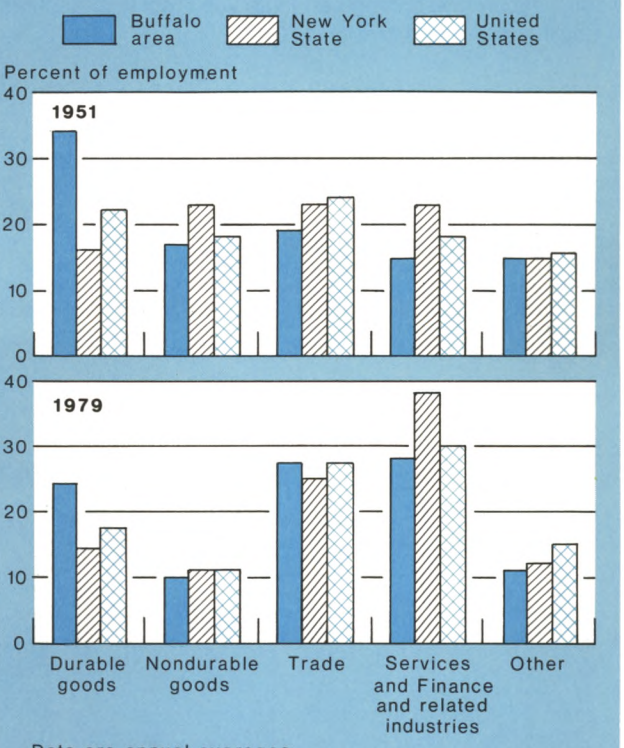
*Includes construction, transportation, and public utilities (except the postal service).

†Services include business and personal services plus private sector health, education, and social services.

Sources: United States Department of Labor and New York State Department of Labor.

Chart 2

Private Employment by Industry for the Buffalo Area, New York State, and the United States



Data are annual averages.

Sources: United States Department of Labor and New York State Department of Labor.

nation there was a crucial difference. For the economy as a whole, manufacturing employment increased throughout this period—albeit at a slower rate than nonmanufacturing—whereas in Buffalo manufacturing steadily declined.

Vulnerability of Buffalo's economy in the late 1970s

By the late 1970s, Buffalo was on the brink of one of its largest postwar reductions of employment. With hindsight, it is not surprising that an area with nearly one-third of its manufacturing jobs in the production of primary metals and transportation equipment did not fare well in the early 1980s. Buffalo's employment base included more than the national share of jobs in slow-growing or declining durable goods manufacturing industries. But, quite surprisingly, Buffalo's unattractive industry mix accounted for only about one and one-half percentage points of the thirteen percentage point difference between Buffalo's and the nation's employment growth in the late 1970s.[5] In other words, if each of Buffalo's industries had grown at the same rate as the national average for those industries, Buffalo's growth in nonagricultural employment between 1974 and 1979 would have been about 13.5 percent (almost equal to the national average of 15 percent) instead of the 2 percent growth that actually occurred.

Three other characteristics of the Buffalo economy, besides industry mix, contributed to its vulnerablity to economic decline at the end of the 1970s:

- *Buffalo's location* became a greater disadvantage in the postwar period because producers did not have easy access to the growing markets of the West and South. This problem intensified as Buffalo's markets in northeastern and midwestern states declined or grew slowly in the late 1970s and early 1980s. Buffalo's importance as a Great Lakes port also declined in the 1960s and 1970s following the opening of the Saint Lawrence Seaway.

- *Many older plants and facilities* had not been updated sufficiently to compete with modern facilities built elsewhere in the postwar period. Buffalo manufacturers did invest in plant and equipment at the national rate in the 1970s.[6] However, in Buffalo a larger-than-average portion of gross investment was needed to prevent deterioration of the old, existing capital stock in the area, so net investment was lower.

- *Wages in Buffalo,* especially in manufacturing, were well above the national average, and during the 1970s area wages rose even further relative to the rest of the country. In 1963 and 1967, Buffalo's average wage for production workers in manufacturing was about 20 percent above the national average; in 1972 and 1977 this difference rose to 24 percent and 30 percent respectively (Table 1). Buffalo's industry mix—a large proportion of firms in high wage durable goods industries—caused about 75 percent of the difference between Buffalo's manufacturing wages and the national average. But even with an adjustment for the industry mix, Buffalo's average production wage was still 3 to 5 percent above the national average in the 1960s, and rose to 7 percent above it in 1972 and 1977.[7]

[5] In the analysis, Buffalo's employment change was separated into "industry mix" and "regional" components. Industry mix was calculated by comparing national growth in each industry with growth in total employment nationally. The regional component compared Buffalo's growth in each industry with national growth in that industry. Employment data used in the analysis was two-digit or in some cases one-digit standard industrial code (SIC) industries. This technique is sometimes labeled "shift-share" analysis. See Gregory Jackson *et al., Regional Diversity: Growth in the United States, 1960-1990* (Boston: Auburn House, 1981), Appendix B. In the early 1980s the regional component continued to be the dominant influence.

[6] This conclusion is based on real investment in new plant and equipment per production worker or investment as a percent of the value of shipments. The United States Census Bureau's *Annual Survey of Manufactures* (through 1979) and *Census of Manufactures* provide data on investment by county.

[7] This analysis focuses on wage costs, which account for about 80 percent of

Table 1

Average Wages For Production Workers in the Buffalo Area and the United States 1963-82

Year	United States average wage In dollars	Buffalo average wage In dollars	Buffalo as percent of United States	Buffalo corrected for industry mix In dollars	Buffalo as percent of United States
1963	2.53	3.05	120.6	2.65	104.8
1967	2.92	3.47	118.8	3.02	103.4
1972	3.95	4.91	124.3	4.24	107.3
1977	5.89	7.65	129.9	6.33	107.5
1982	8.69	11.22	129.1	9.30	106.9

Wage rate is production worker payroll divided by production worker hours. The industry mix correction is a weighted average of Buffalo wages with the weight for each industry being the percent of production workers in the category for the entire U.S. economy. The industry categories used were the most disaggregated available in *Census* data. Where wage data for Buffalo were unavailable, a value was imputed from other sources.

Source: Calculated by author using *Census of Manufactures* data for each year.

The area's higher-than-average wage and the increase in wages over the 1970s were due in part to the high degree of unionization in Buffalo (Appendix 1).

As a result, several of Buffalo's manufacturing industries competed against firms in growing areas which operated newer, more efficient facilities and paid lower wages. Buffalo producers in chemicals, primary metals, transportation equipment, and instruments not only paid higher-than-average wages but also had lower-than-average productivity. Productivity estimates for Buffalo industries were made using data from the *Census of Manufactures*. In Chart 3, these industries with the most severe wage/productivity problems are shown in the shaded upper-left quadrant of the chart (SIC 28, 33, 37, and 38).[8] Their value-added per production worker is below the national average for their industry, and their average wages are above the national industry average.

Buffalo's nonmanufacturing firms, in contrast, did not have such severe disadvantages. Services, trade, and finance and related industries grew throughout the national economy because of changing consumption patterns and business organization.[9] The fixed capital in these industries is less affected by physical deterioration and technological advances than the factories of many manufacturers. Therefore, the age of business facilities was less of a handicap for local nonmanufacturing firms. In addition, wage costs for Buffalo nonmanufacturing firms tended to be near the national average for metropolitan areas.[10] Finally, competition from outside the region was less important because these industries generally serve local markets.

Buffalo employment in the 1980s

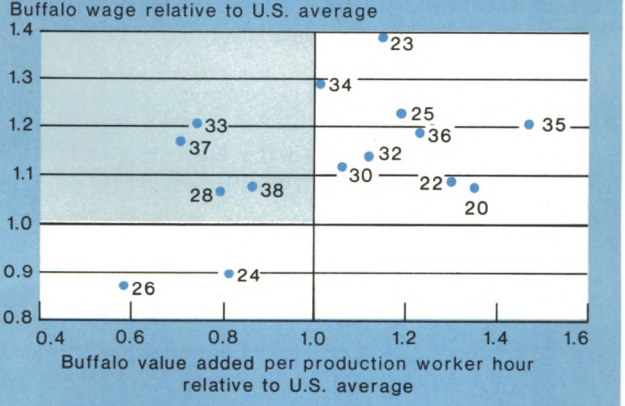
The back-to-back recessions of the early 1980s, along with the difficulties of American manufacturing because of foreign competition, caused a sharp decline in employment and payroll in Buffalo's vulnerable industries. The relative prosperity of 1979 was followed by rapid decline in several of the area's major manufacturing industries. Because of this manufacturing decline, by 1985 the industry mix of employment in Buffalo resembled that of the U.S. economy as a whole (Chart 4).

As would be expected, those Buffalo industries with wage/productivity problems that were competing in declining national markets were affected most by the recession. The decline in primary metals was dramatic (Table 2, page 34). Between 1979 and 1983, when total local private employment bottomed out, employment in primary metals dropped from about 22,000 to 8,400. Declining demand and overcapacity in the world steel industry meant that the local decline in primary metals employment continued even after the rest of the local economy began to recover. Employment dropped to 5,500 in 1984 and 4,500 by September 1985. The employment declines in other manufacturing in-

Chart 3

Wages and Productivity in the Buffalo Area Compared with the National Average-1977

For two-digit Standard Industrial Code (SIC) manufacturing industries



Symbol numbers of SIC observations are: 20-food products; 21-tobacco; 22-textile mill products; 23-apparel and other textile products; 24-lumber and wood products; 25-furniture and fixtures; 26-paper and allied products; 27-printing and publishing; 28-chemicals and allied products; 29-petroleum and related products; 30-rubber and plastics; 31-leather and leather products; 32-stone, glass, clay, and concrete; 33-primary metals; 34-fabricated metals; 35-machinery excluding electrical; 36-electric and electronic equipment; 37-transportation equipment; 38-instruments; and 39-miscellaneous.

No data for SIC 21, 27, 29, 31, and 39.

Source: 1977 Census of Manufactures.

Footnote 7 continued
total labor cost. Regional data on fringe benefits disaggregated by industry are not available. Published information suggests that fringe benefits are highly correlated with wage levels and that focusing on wages alone understates the differences in total labor cost between locations. See Timothy Smeeding, "The Size Distribution of Wage and Nonwage Compensation: Employer Cost Versus Employee Value", in Jack E. Triplett, ed., *The Measurement of Labor Cost* (Chicago: University of Chicago Press, 1983), pages 237-277. The Bureau of Labor Statistics *Area Wage Surveys* collect information on types, but not costs, of fringe benefits offered by employers in a sample of metropolitan areas. Buffalo employees received a wider range of benefits than workers in many other areas in the sample.

8 The value-added figure for transportation equipment (SIC 37) suggests Buffalo's situation was worse than it actually was. Buffalo had much more than the national percentage of auto manufacturing, a part of the industry with value-added per worker below the overall industry average.

9 For an analysis of the growing importance of business services, see Bobbie H. McCrackin, "Why Are Business and Professional Services Growing So Rapidly?" *Economic Review*, Federal Reserve Bank of Atlanta (August 1985), pages 14-28.

10 Among occupations included in the Bureau of Labor Statistics *Area Wage Surveys* in the late 1970s, Buffalo office workers received wages well below the national average for metropolitan areas while unskilled plant workers outside manufacturing were paid slightly above the national average.

dustries were also large between 1979 and 1983 (Table 2).[11]

Buffalo's employment outside of manufacturing changed very little during the early 1980s. The sharp decline in Buffalo's goods-producing sectors (cutting sales to businesses and households) and in area population (Appendix 2) limited the growth of local services and trade (Chart 5).[12]

The layoffs in manufacturing and the slow growth in services produced a dramatic change in the Buffalo labor market. Area unemployment stood at about 6 percent in mid-1979. It rose to 10.5 percent in mid-1980 and 15 percent in late-1982. Total private sector payroll adjusted for inflation (a measure of real income growth) declined steadily from 1979 to 1983.

Adjustment to the decline

Buffalo's labor market adjusted to this economic downturn in two ways. Some workers responded to the sharp decline in demand for labor by leaving the area's labor force. Many others continued to work in the same industry but gradually accepted wages closer to—or even below—those paid similar workers in other parts of the country. Differences in labor demand also contributed to the decline in Buffalo's average wage. Growing sectors of the local economy tended to pay wages well below the wages in declining industries.[13]

Labor force decline

A rapid 10 percent decline in the area labor force between 1979 and 1984 eased the labor surplus in the region. The area's labor force stood at about 580,000 workers in 1979. By 1983 it had dropped to about 540,000 and it continued to drop to 522,000 in 1984.[14] (Nationally the labor force grew 8 percent during this period.) Some workers left the region to seek jobs elsewhere,[15] while some older workers dropped out of the labor force by accepting early retirement.[16] The out-migration primarily involved younger workers without the

11 These declines in employment resulted in a one-third reduction in real terms of manufacturing payroll between 1979 and 1983. Primary metals payroll dropped to about one-third of its 1979 level. Nondurable goods industries fared somewhat better than durable goods, with their payroll declining only 14 percent in real terms compared with a 37 percent decline for durables. Manufacturing payroll fell from about 50 percent of the area's payroll in 1979 to about 40 percent in 1983.

12 Subsidized redevelopment of downtown Buffalo has expanded the supply of top quality office space there, and many new retail developments have been constructed throughout the region. For a discussion of the possible link between manufacturing and service growth, see Aaron S. Gurwitz, "New York State's Economic Turnaround: Services or Manufacturing", this *Quarterly Review* (Autumn 1983), pages 30-34.

13 Buffalo still must contend with other disadvantages. It cannot move closer to the growing markets of the West and South. The recent growth of the northeastern economy, however, has lessened this problem. In addition, the economic competitiveness of area factories and other physical capital may have declined further compared with other areas. New investment is more likely to be drawn to growing regions than to Buffalo with its economic problems. The recessions of the early 1980s compounded Buffalo's problems by lowering local investment levels and forcing more plants to close.

14 New York State Department of Labor, *Buffalo SMSA, Fiscal Year 1985, Annual Labor Area Report*, page 11.

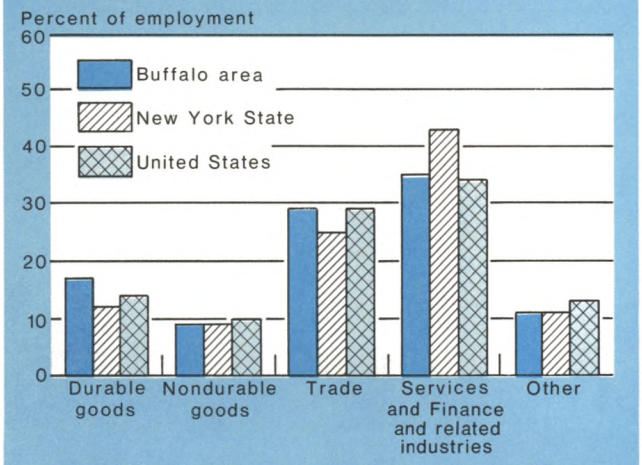
15 This out-migration also occurred in earlier periods. See Louis Jacobson, "A Tale of Employment Decline in Two Cities: How Bad Was the Worst of Times?", *Industrial and Labor Relations Review*, Volume 37, No. 4 (July 1984), pages 557-569.

16 In 1980, about 20 percent of all Buffalo's manufacturing workers were age 55 or older. The percent was even higher in industries about to experience large layoffs such as primary metals and motor vehicles. See United States Census Bureau, *1980 Census of Population, Volume 1*, Chapter D, Part 34, Table 230.

Chart 4

Private Employment in the Buffalo Area, New York State, and the United States-June 1985

By industry

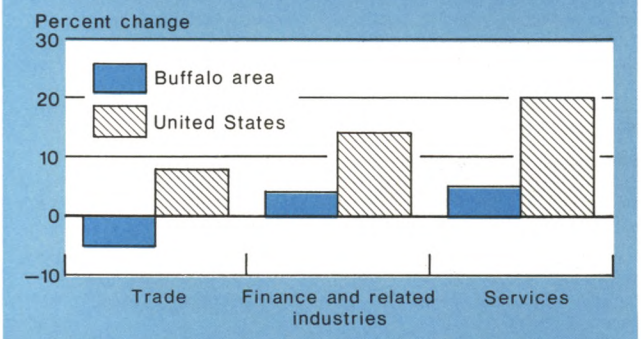


Sources: United States Department of Labor and New York State Department of Labor.

Chart 5

Nonmanufacturing Employment Change in the Buffalo Area and the United States

1979-83



Sources: United States Department of Labor and New York State Department of Labor.

option of early retirement, while older workers tended to stay in Buffalo because of its low housing cost.[17]

Wage adjustment within industries

Manufacturing production wages showed only a slight adjustment by 1982, three years after the most recent economic downturn started in Buffalo.[18] Buffalo production workers' wages adjusted for industry mix remained about 7 percent above the national average (Table 1).

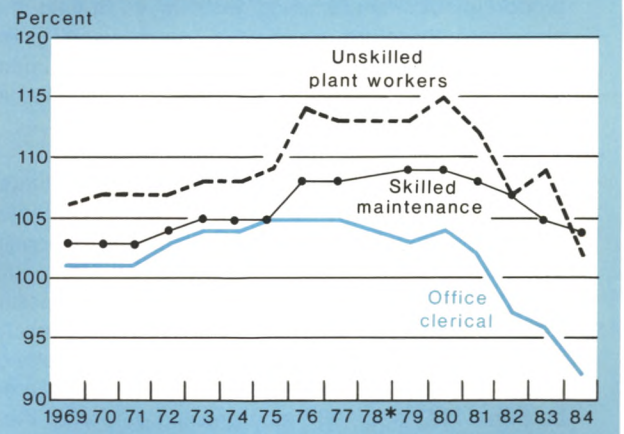
Since 1982, however, Buffalo's wages have adjusted in important manufacturing occupations.[19] In the early 1980s, Buffalo's wages for skilled maintenance occupations in manufacturing firms began a gradual decline compared with other metropolitan areas and this decline continued through 1984, the latest year for which data are available (Chart 6). Buffalo wages for unskilled plant workers in manufacturing also peaked as a percent of the national average in 1980 (at an even higher relative wage) and a more pronounced decline followed.[20] In four years, Buffalo wages for unskilled plant workers in manufacturing fell from about 15 percent above the national metropolitan average to close to the national figure.[21]

Wages for Buffalo's production and clerical workers outside of manufacturing adjusted much faster to the labor surplus than wages for manufacturing production workers. By 1981, wages for important occupations in each nonmanufacturing category were below national metropolitan averages, in some cases at 90 percent of the national average (Chart 7).

Five factors help explain why Buffalo's wages in manufacturing adjusted so much more slowly than other categories.

Chart 6

Buffalo Manufacturing Wage as a Percent of Average for All Metropolitan Areas

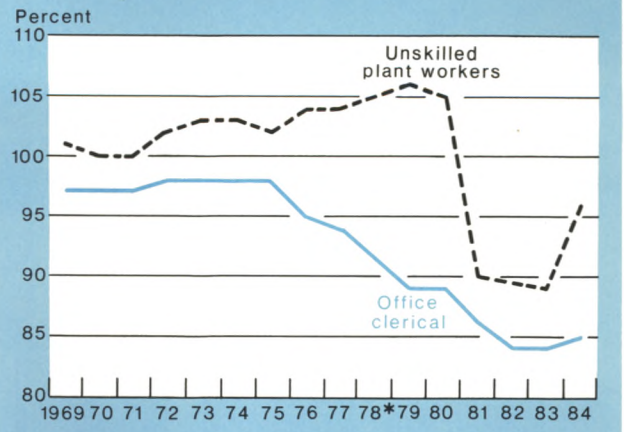


*1978 data not available.

Sources: United States Department of Labor, Bureau of Labor Statistics, Area Wage Surveys.

Chart 7

Buffalo Nonmanufacturing Wage as a Percent of Average for All Metropolitan Areas



*1978 data not available.

Sources: United States Department of Labor, Bureau of Labor Statistics, Area Wage Surveys.

17 The National Association of Realtors found that Buffalo had the lowest median purchase price for existing single family housing of the 44 metropolitan areas they studied in 1984. See *Buffalo News* (November 9, 1985), page A.6.

18 This conclusion is based on data from the most recent *Census of Manufactures* taken in 1982.

19 The only detailed data on Buffalo's wages after 1982 are from the Bureau of Labor Statistics *Area Wage Surveys*, which are published annually. These surveys report wages by occupation. The earlier analysis in this article used data from the *Census of Manufactures,* which reports data by industry.

20 Buffalo's 1984 wages for unskilled manufacturing workers were, as a result, below other older industrial areas such as Detroit (136 percent of metropolitan average), Dayton (119 percent), Chicago (104 percent), and Philadelphia (107 percent). However, they remained above Boston (88 percent) and New York City (87 percent). Manufacturing growth in the United States, however, is occurring primarily in areas with newer production facilities and wages significantly below the national average. Massachusetts and New Hampshire are the only northeastern states to register manufacturing growth over the last five years. Their manufacturing wages—adjusted for industry mix—were under 90 percent of the national average in 1982. Many of the southeastern states had adjusted wages at near 80 percent of the U.S. average. See Lynn Browne, "How Different Are Regional Wages? A Second Look", *New England Economic Review,* Federal Reserve Bank of Boston (March/April 1984), pages 40-47.

21 These conclusions for manufacturing workers must be tentative until detailed information becomes available with the next *Census of Manufactures*. Efforts to duplicate the analysis of manufacturing wages done earlier in this article, using the less detailed data available between *Census* years, produced inconclusive results.

- The *union wage effect* was stronger in manufacturing. Most manufacturing production workers in Buffalo were covered by collective bargaining agreements (Appendix 1) and the percentage in most other metropolitan areas was much less than in Buffalo. A much higher proportion of manufacturing workers in Buffalo than elsewhere, therefore, received a "union wage" premium. (For blue-collar and clerical workers in nonmanufacturing firms, however, Buffalo's level of unionization was similar to that of other metropolitan areas.)

- *National collective bargaining agreements* in manufacturing slowed the downward wage adjustment in Buffalo by stabilizing local wages in some industries or causing them to rise despite the local downturn. Primary metals, transportation equipment, and machinery are important local industries whose wage provisions are negotiated nationally.[22] In the first two of these industries, Buffalo's wages actually increased compared with other areas between 1977 and 1982 as a growing portion of these industries in other parts of the country became nonunion and paid lower wages.[23] Only starting in 1982, collective bargaining in the auto and steel industries led to wage concessions and flexibility in local work rules to encourage recovery, and the expected wage adjustment began.[24]

- The *slow-changing wage expectations* of workers in durable goods manufacturing kept wages from adjusting quickly. These production workers have become accustomed to repeated layoffs and rehires over business cycles, and their high hourly wages are viewed as compensation for their intermittent unemployment.[25] In other words, Buffalo's workers in cyclical durable goods industries were slow to decide that the layoffs of 1980-82 were anything other than the latest round in the usual pattern of layoffs and eventual recalls.[26]

- *Average seniority increased* among manufacturing workers in durable goods industries as younger, lower-paid workers were laid off. Because layoffs hit a larger percent of the manufacturing workforce in Buffalo than in the nation, Buffalo's relative wages increased because of higher effective seniority. Nonmanufacturing industries in Buffalo and elsewhere in the nation did not experience similar large layoffs.

22 These national agreements are not rigid, as the recent wage and benefit concessions in the steel and auto industries illustrate. However, they are less sensitive to local labor market conditions than either locally negotiated agreements or nonunion wage-setting. See Freeman and Medoff, *op. cit.*, Chapter 3.

23 The new independent mini-mills in steel and nonunion auto parts suppliers under contract with major auto companies are examples of these developments.

24 See Bureau of National Affairs, *Layoffs, Plant Closing, and Concession Bargaining* (1983).

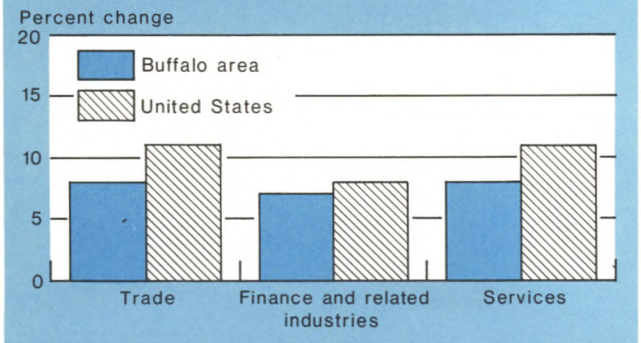
25 See Sherwin Rosen, "Implicit Contracts: A Survey", *Journal of Economic Literature* (September 1985), pages 1144-1175.

26 This attitude was most common among older workers. Some eligible for retraining preferred to wait out the "cycle" and collect unemployment benefits. See Walter Corson, Sharon Long, and Rebecca Maynard, *An Impact Evaluation of the Buffalo Dislocated Worker Demonstration Program,* Mathematica Policy Research (1985).

Chart 8

Nonmanufacturing Employment Change in the Buffalo Area and the United States

September 1983 to September 1985



Sources: United States Department of Labor and New York State Department of Labor.

Table 2

Manufacturing Employment in the Buffalo Area

Annual average 1979 and 1983 (in thousands)

Industry	Buffalo employment 1979	Buffalo employment 1983	Percent change Buffalo	Percent change United States
Durable goods	102.5	67.3	−34	−16
Primary metals	21.7	8.4	−61	−37
Fabricated metals	14.1	9.8	−25	−20
Machinery, excluding electrical	13.2	9.9	−25	−18
Electrical equipment	11.6	9.2	−21	−4
Transportation equipment	26.1	17.6	−33	−15
Other	15.8	12.4	−22	−12
Nondurable goods	42.7	36.4	−15	−7

Source: New York State Department of Labor.

- *An oversupply of office workers and market determination of local wages* reduced Buffalo's relative wage for office workers to well below the national metropolitan average. With relatively slow growth in Buffalo's service sector, compared with national trends, the demand for office workers grew more slowly than in many other metropolitan areas. The supply, on the other hand, was more than adequate. In 1982, the depth of the recession, there were eight jobseekers for each Buffalo area job listed in the professional, technical, managerial, and clerical categories in the state job data bank.[27] The ratio of jobseekers to jobs for office work exceeded even the ratios for factory processing and benchwork, and packaging and material handling—important lower-skilled blue collar jobs.[28]

27 State of New York, *Annual Planning Information for Manpower Planners, Fiscal Year 1984, Buffalo SMSA,* page 30.

28 Buffalo's office workers were younger than manufacturing workers and hence less likely to leave the labor market through retirement. This contributed to the labor surplus. United States Census Bureau, *1980 Census of Population, Volume 1,* Chapter D, Table 221.

Table 3
Payroll Per Worker and Employment Change in the Buffalo Area 1979-84

Industry	1979 average payroll per worker* In dollars	Change in employment 1979-84 In thousands	Change in employment 1979-84 In percent	1984 average real payroll per worker* In 1979 dollars	Percent change in real payroll per worker 1979-84
Average all sectors	**13,345**	**−17.6**	**−4.2**	**11,909**	**−10.8**
Medical and other health services	10,030	7.8	25.6	9,832	−2.0
Business services	9,448	3.6	22.9	8,900	−5.8
Social services	7,278	2.4	39.0	6,899	−5.2
Finance and related industries	11,989	2.1	9.9	12,194	1.7
Education	8,091	1.3	22.9	8,413	3.8
Construction	17,051	1.3	7.5	15,612	−8.4
Miscellaneous services to individuals	9,136	1.1	10.4	9,012	−1.4
Agriculture, forestry, fisheries, and mining	10,924	1.0	44.2	10,075	−7.8
Lodging	5,889	0.9	28.1	5,766	−2.1
Legal	11,720	0.8	29.7	12,796	9.2
Personal services	7,119	0.3	6.3	5,921	−16.8
Retail trade	6,698	0.2	0.2	6,028	−10.0
Printing and publishing	15,428	0	−4.4	14,323	−7.2
Membership organizations	5,669	0	−0.5	4,966	−12.4
Miscellaneous services	13,057	−0.1	−2.0	13,899	6.4
Food and kindred products	15,643	−0.5	−5.1	15,436	−1.3
Rubber and plastic	16,540	−0.6	−10.2	17,263	4.9
Transportation and public utilities	17,995	−0.7	−2.8	16,764	−6.8
Wholesale trade	15,184	−1.0	−4.0	14,137	−6.9
Electrical machinery	17,766	−1.8	−15.9	17,750	0
Chemicals	19,657	−1.9	−19.6	20,291	3.2
Machinery, excluding electrical	17,750	−2.2	−16.1	17,048	−4.0
Miscellaneous nondurable manufacturing	13,850	−2.6	−25.3	13,131	−5.2
Miscellaneous durable manufacturing	16,478	−3.1	−24.9	15,291	−7.2
Fabricated metals	19,119	−3.1	−21.9	18,026	−5.7
Transportation equipment	22,239	−6.3	−24.0	22,412	0.7
Primary metals	22,918	−16.6	−76.6	19,822	−13.5

* This figure is total annual payroll in an industry divided by the average number of people who worked in the industry during the year. As a result, differences in payroll per worker reflect differences in wages and in the proportion of part-time workers.
Source: New York State Department of Labor.

Earnings in growing versus declining industries

Buffalo's new nonmanufacturing jobs tended to be lower-paying than the lost manufacturing jobs. Table 3 lists industries ranked by their employment change between 1979 and 1984. Many workers laid off from durable goods production work who found new jobs in retail trade or services experienced a large earnings decrease. Within the national service sector, only certain types of professional and technical jobs offer high pay. And these high-paying jobs tend to be concentrated in regional or national service centers such as New York, Boston, or San Francisco—not Buffalo.

Table 4

Private Sector Employment in the Buffalo Area in September 1983 and September 1985

In thousands

Sector	September 1983	September 1985	Change	Percent change
Total private nonagricultural	**390.4**	**410.0**	**+19.6**	**+5**
Manufacturing	105.0	103.8	−1.2	−1
Durable goods	68.4	67.3	−1.1	−2
Primary metals	8.4	4.5	−3.9	−46
Fabricated metals	9.7	10.5	+.8	+8
Machinery, excluding electrical	9.9	9.9	0	0
Electrical equipment	9.2	9.0	−0.2	−2
Transportation equipment	18.4	21.4	+3.0	+16
Other durable	12.8	12.0	−0.8	−6
Nondurable goods	36.6	36.5	−0.1	*
Food	8.6	8.3	−0.3	−3
Textile and apparel	3.0	3.3	+0.3	+10
Paper	3.0	2.8	−0.2	−7
Printing and publishing	8.4	8.9	+.5	+6
Chemicals	7.9	7.3	−.6	−8
Rubber and plastics	4.9	5.1	+0.2	+4
Other nondurable	0.8	0.8	0	0
Transportation and public utilities	25.3	25.0	−3	−1
Wholesale trade	24.8	24.9	+0.1	*
Retail trade	85.6	92.8	+7.2	+8
Finance and related industries	23.1	24.8	+1.7	+7
Services	108.5	117.6	+9.1	+8
Health	35.5	38.1	+2.6	+7
Education	8.2	8.2	0	0
Social services	8.4	9.8	+1.4	+17
Other	56.4	61.5	+5.1	+9
Construction	17.4	20.3	+2.9	+17
Other	0.7	0.8	+0.1	+14

* Less than 0.5 percent change.
Source: New York State Department of Labor.

Where Buffalo stands now

Over the last decade Buffalo's economy has adjusted to the decline in many of its traditional industries. Plant closings and layoffs are the most visible part of this adjustment, but the reduced labor force and wage adjustments are also important.

The present labor market situation clearly is better than anytime since 1980. The metropolitan unemployment rate dropped from its peak of 15 percent in late-1982 to about 7.5 percent by mid-1985. The national economic expansion and adjustments in the local economy increased employment in most sectors of the area economy except manufacturing (Table 4). And area payrolls have grown in real terms during 1984 and 1985.

Unfortunately, this recent growth in Buffalo employment does not represent a break with long-run trends. It is similar to growth in the late 1970s and other periods of national economic expansion. Moreover, Buffalo's growth in the current expansion could turn out to be weaker than in past expansions because manufacturing has continued to decline. (Only transportation equipment production has shown employment gains through re-hires at local auto plants.) And with the manufacturing sector declining overall, Buffalo service and trade employment growth rates continue to lag behind national figures (Chart 8, page 34).

In sum, Buffalo's recent expansion has not been balanced. For much of the last five years, manufacturing, population, and real income have declined while retail and service employment have grown. Currently, the proportions of manufacturing, services, and retail employment are similar to the nation's economy. If manufacturing in Buffalo declines further during the current recovery only to be hit severely in the next recession, local retail and service industries may not be able to continue their growth and Buffalo may once again face difficult times.

All the same, the adjustments to the economic decline that have already occurred may set the stage for development of new industries. Buffalo can offer low-cost housing, electric power, office space, and, in many occupations, trained labor. Industries that previously might have been priced out of the Buffalo market may now find it more attractive. Expansion in financial services for the regional market has already occurred. Local development agencies are encouraging the growth of medical research, high tech, and new smaller manufacturing firms, though in the short run these provide relatively few jobs. Furthermore, the current economic growth in the Northeast is increasing the demand for Buffalo's goods and services. Given the long-term economic problems facing the region, there is clearly a sense of urgency to these efforts to develop a new "product line" for Buffalo's economy.

Fred C. Doolittle

Appendix 1: The Impact of Collective Bargaining on Wages

Past econometric research suggests that nationwide the "union effect" on wages became greater between the early 1960s and the late 1970s.* In the 1960s when labor markets were tight, wages of union jobs were about 10 to 15 percent above the wages of similar nonunion jobs. With slower growth and higher unemployment in the 1970s, this difference rose to roughly 20 to 30 percent. As the union wage effect grew in the 1970s, wages in heavily-unionized Buffalo rose relative to the rest of the country (table).

Workers in Firms of 50 or More Employees Covered by Collective Bargaining Agreements, 1980

In percent

Area	Manufacturing production workers	Nonmanufacturing production workers	Office workers
Buffalo	88	61	15
All metropolitan areas			
Median	70	44	11
High	100	82	27
Low	9	11	4

Source: Data are from the United States Bureau of Labor Statistics, *Area Wage Surveys, Selected Metropolitan Areas, 1980,* page 115.

Collective bargaining developments in auto and basic steel manufacturing were a source of wage growth in the entire manufacturing sector in Buffalo.† In autos and steel, national collective bargaining agreements caused industry wages to rise sharply as a percentage of the national average for all manufacturing production workers. Auto workers' wages rose from 30 percent above the national average in 1970 to nearly 50 percent by the late 1970s. At the same time, primary metal workers' wages rose from 22 percent above the national average in 1970 to 45 percent in the late 1970s. In the mid-1970s, these two important Buffalo industries were paying high and rising wages to more than one-fourth of the local manufacturing workforce. Other manufacturing employers also had to pay higher wages to attract and retain workers.

* See Richard Freeman and James Medoff, *What Do Unions Do?* (New York: Basic Books, 1984), Chapter 3, for a survey of recent research. See also Colin Lawrence and Robert L. Lawrence, "Manufacturing Wage Dispersion: An End Game Interpretation", *Brookings Papers on Economic Activity* (1985), No. 1, pages 47-106.

† See Otto Eckstein *et al., The DRI Report on U.S. Manufacturing Industries* (New York: McGraw-Hill, 1984), Appendix; Jack Steiber, "Steel", in Gerald G. Sommers, ed., *Collective Bargaining: Contemporary American Experience* (Madison: Industrial Relations Research Association, 1980), Chapter 4; and Harry Katz, *Shifting Gears: Changing Labor Relations in the U.S. Automobile Industry* (Cambridge: MIT Press, 1985).

Appendix 2: Changing Population in the Buffalo Area

Like many older metropolitan areas, Buffalo lost population during the 1970s and early 1980s.

Year	Buffalo area population	Change
1960	1,306,957	*
1970	1,349,211	+42,254
1980	1,242,826	−106,385
1984	1,204,800	−38,026

* Not applicable.
Source: United States Bureau of the Census.

Most forecasts estimate that the area's 1990 population will be slightly less than in 1984. As the baby boomers have grown older, the age structure of the population has changed. The number of Buffalo area residents under 20 years of age has declined: in 1980 there were about 380,000 people in this age bracket, and the 1990 forecast is about 310,000. Residents from 20 to 64 years of age totaled 710,000 in 1980 and are expected to drop to about 695,000 in 1990. Residents age 65 and over totaled 155,000 in 1980 and are expected to grow to 175,000 in 1990.†

† Battelle Inc., *An Analysis of Current and Short-Term Projections of Economic Conditions in Erie County* (January 1984), page 15.

In Brief
Economic Capsules

Credit Card Balances—Debt or Convenience Use?

Over the past several years, consumer installment debt outstanding has risen very rapidly relative to disposable personal income, causing the ratio of the two to reach an all-time high of 0.188 in November 1985 (Table 1). Revolving debt, which includes outstanding balances on credit card and check credit accounts, constituted 21.5 percent of consumer installment debt in November 1985, and has been the fastest growing component of consumer installment debt over the past several years. However, some of the debt included in revolving debt actually reflects the "convenience use" of credit cards. That is, some individuals use credit cards as a convenient means of making transactions and pay all charges in one billing cycle. Although an increase in the convenience use of credit cards does not represent an increase in debt in the ordinary sense, the outstanding balances of convenience users are included in the measure of consumer installment debt outstanding. Therefore, this measure overstates the "true" level of consumer debt.

Various analysts have attributed approximately 40 to 50 percent of the growth in revolving debt to the convenience use of credit cards, based on industry and household survey data that indicate that 40 to 50 percent of credit card users pay their bills in full within the billing period.[1] However, such analyses overestimate the degree to which growth in the convenience use of credit cards accounts for growth in revolving debt outstanding. Although 40 to 50 percent of *extensions* of revolving credit may reflect the convenience use of credit cards, the percent of revolving credit *outstanding* that reflects such use may be much smaller. Available data indicate that the amounts charged in any given month, whether for convenience purposes or otherwise, account for only a small portion of revolving debt outstanding in that month. Much of the debt reflects charges that were incurred by non-convenience users in previous months. Therefore, to estimate the proportion of revolving debt outstanding, as opposed to the proportion of monthly charges, that reflect the convenience use of credit cards, one must first estimate the proportion of debt that has been outstanding for less than one month, or more accurately, less than one billing cycle.

Suppose that, in any given month, on average half of the charges in that month occur before that month's billing date, and half occur after. Then the amount outstanding at the end of a given month that has been outstanding for less than one billing cycle equals, at most, the amount extended during that month plus one-half of the amount extended during the previous month. That is, the time between the date on which a charge is made and the date on which the first payment is due ranges from one to two months, depending on how close the former date is to the next billing date, and averages one and one-half months.

Data from the years 1977 to 1982 indicate that, on average, extensions of revolving credit during a given month, plus one-half of extensions during the previous month, account for roughly 30 percent of revolving credit outstanding at the end of the month.[2] If one assumes that 50 percent of cardholders pay their bills in full in one billing cycle, and roughly 30 percent of revolving debt outstanding has been outstanding for less than one billing cycle, then roughly 15 percent of revolving debt outstanding reflects charges that will be paid in full within one billing cycle.

[1] See Charles A. Luckett and James D. August, "The Growth of Consumer Debt", *Federal Reserve Bulletin* (June 1985) and Goldman Sachs Economics, *Pocket Chartroom* (November 1985).

[2] The Federal Reserve Board published estimates of monthly extensions of revolving debt, as well as revolving debt outstanding, for the 1977-82 period (*Statistical Release* G.19). Data on extensions were not collected after 1982.

The estimate derived above is an approximation that does not take into account a number of factors. First, the proportion of monthly charges that are paid in full within one billing cycle may be less than or greater than the proportion of cardholders (taken to equal 50 percent) that pay in full within one billing cycle. That is, charges incurred each month by persons who then pay these charges in full may be smaller or larger, on average, than the charges incurred by those who do not. A person may be more likely to pay a small monthly bill (*i.e.*, $200) in full in one billing cycle than a large monthly bill (*i.e.*, $2,000). In this case, the proportion of revolving debt outstanding that reflects the convenience use of credit cards is less than 15 percent. On the other hand, one might argue that wealthy persons tend to incur large charges and then pay them in full while poorer persons incur smaller charges and do not. Or one could argue that persons who maintain outstanding credit balances are more likely to be restricted in the amount of additional monthly charges they can incur, due to credit limits, than persons who pay their monthly bills in full. In these latter cases, the convenience-use portion of revolving credit outstanding would exceed 15 percent.

Second, the estimate presented above is based implicitly on the assumption that convenience users of credit cards pay their charges one month after they are billed. To the extent that some persons pay their credit charges in less

Table 1

Growth of Consumer Installment Debt, Revolving Debt, and Disposable Personal Income, 1978-85

In percent, seasonally adjusted

	Annual growth rates of:				
Year	Consumer installment debt*	Revolving debt*	Disposable personal income†	Installment debt as a percent of income‡	Revolving debt as a percent of consumer installment debt§
1978	18.9	23.5	12.5	16.6	16.7
1979	14.0	18.2	11.5	17.1	17.3
1980	−3.5	3.2	10.9	14.7	18.5
1981	5.6	9.9	10.9	14.3	19.3
1982	4.9	7.8	6.3	14.2	19.8
1983	14.5	17.6	7.2	14.9	20.3
1984	20.3	24.2	10.1	16.6	21.0
1985	20.3	23.5	4.9	18.8	21.5

* Growth rates are from December to December. For 1985, growth rate is from December to November, annualized.
† Growth rates of annual income.
‡ Debt is as of the end of the year. Income is fourth quarter disposable personal income on an annualized basis. For 1985, debt is as of the end of November.
§ Percents are as of the end of the year. For 1985, the percent is as of the end of November.
Sources: Federal Reserve Board, *Statistical Release* G.19 and Citibase.

Table 2

Growth of Consumer Installment Debt, With and Without an Adjustment for the Convenience Use of Credit Cards, 1978-85

In percent, seasonally adjusted

	Annual rate of growth of consumer installment debt*		Debt as a percent of disposable personal income†	
Year	Actual	Adjusted for the convenience use of credit cards	Actual	Adjusted for the convenience use of credit cards
1978	18.9	18.7	16.6	16.2
1979	14.0	13.9	17.1	16.7
1980	−3.5	−3.7	14.7	14.3
1981	5.6	5.5	14.3	13.9
1982	4.9	4.8	14.2	13.7
1983	14.5	14.4	14.9	14.5
1984	20.3	20.2	16.6	16.1
1985	20.3	20.2	18.8	18.2

* Rates of growth are from December to December. For 1985, rate of growth is from December to November, on an annualized basis.
† Debt is as of the end of the year, as a percent of fourth-quarter annualized disposable personal income. For 1985, debt is as of the end of November.
Source: Federal Reserve Board, *Statistical Release* G.19, Citibase, and author's calculations.

than one month, the estimate presented above overstates the proportion of revolving debt that is paid in full in one billing cycle.

Because of the simplifying assumptions made, including the ones described above, the methodology used in this capsule may slightly overstate or understate the importance of the convenience use of credit cards. In any case, the available evidence indicates that on the order of 15 percent, rather than 40 to 50 percent, of revolving debt outstanding reflects this convenience use. Unfortunately, very little data are available on the degree to which the convenience-use proportion of revolving debt may have changed over time.[3] To the extent that the convenience use of credit cards has been a roughly constant proportion of revolving debt over time, taking into account this convenience use does not significantly affect recent growth rates in consumer installment debt, or the current level of consumer installment debt relative to income (Table 2).

[3] The ratios of extensions of revolving debt to revolving debt outstanding exhibited only a very slight downward trend over the 1977-82 period. According to Luckett and August, *op. cit.*, approximately the same proportion of cardholders report "almost always" paying credit card bills in full in the 1983 Consumer Credit Survey as in the 1977 survey. However, it is not known whether the monthly charges incurred by such persons have grown more or less quickly over time than have average monthly charges.

Lynn Paquette

Two Capsules on the Auto Sector . . .

. . . Forecasting Automobile Output

As a share of GNP, the auto sector has been on the decline since the early 1970s. Auto output accounted for only about 2½ percent of GNP from 1980 to 1985, down from almost 3 percent in the 1970s. Judged in terms of its contribution to GNP *fluctuations*, however, the auto industry remains a key sector of the economy. In the last six years changes in auto output accounted for 29 percent of the quarter-to-quarter change in GNP, slightly more than its 27 percent contribu-

The author would like to thank Cornelis Los for his timely programming and econometrics advice and Daniel Hayes for his excellent research assistance.

Comparison of *Ward's* to Alternative Models

Model	Bias* (percent)†	Accuracy* (percent)†	Predictive power‡
Wards	0.381 (5.0)	0.498 (6.6)	0.859
Extrapolative	0.028 (0.4)	0.686 (9.0)	0.690
Econometric model	0.283 (3.7)	0.524 (6.9)	0.838
Combination model	0.209 (2.8)	0.368 (4.9)	0.886

* "Bias" is the mean error and "Accuracy" is the mean absolute error.

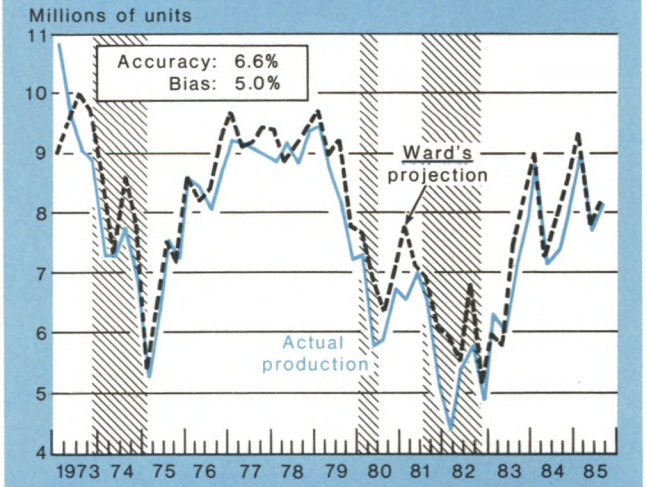
† Millions of units at an annual rate. The numbers in parentheses are the bias and accuracy as a percent of actual production.

‡ "Predictive power" is the coefficient of determination (*i.e.*, the $\bar{R}^2$). It measures the percent of variation in actual production explained by each model.

Chart 1

Ward's Projections and Actual Automobile Production

Seasonally adjusted annual rates



Shaded areas represent periods of recession, as defined by the National Bureau of Economic Research.

"Accuracy" is the mean absolute error and "bias" is the mean error, each as a percent of actual production.

Sources: Various issues of Ward's Automotive Reports (1973-85) and unpublished data from the Bureau of Economic Analysis.

tion in the 1970s.[1] In addition to its strong direct effect on the economy, the auto sector continues to have substantial spillover effects. Purchases of raw materials by the auto industry account for more than half of the rubber and lead consumed in the United States, as well as a major portion of the steel, aluminum, platinum, copper, and zinc. On the consumer end, spending associated with buying and using automobiles has been running above 10 percent of GNP in recent years.[2]

Because of its far-ranging importance, the auto sector is central to any assessment of prospects for the economy as a whole. The auto production plans published in *Ward's Automotive Reports* provide a timely two-quarter projection of this important sector, and, as a result, have become a popular tool in forecasting. In this capsule we examine the usefulness of the *Ward's* projections for forecasting auto output over the near term. Adjusted for systematic over-prediction, the projections compare favorably with those from some alternative methods, but they do not provide the best overall predictions. In particular, combining the *Ward's* projections with a simple econometric model significantly improves the accuracy of the forecast.

Analysis of the Ward's projections

Each month *Ward's* asks eight U.S. auto makers to state their domestic production plans for the next three to six months. Chart 1 plots domestic auto production and the *Ward's* projections made at the beginning of each quarter.[3] Although the *Ward's* projections generally track the up and down movement of production they have two shortcomings. First, they are not very accurate, with an average error of about one-half of a million cars at an annual rate. Second, they systematically over-predict auto output, by an average of 0.42 million cars at an annual rate, or 5.5 percent of actual production. The *Ward's* projections, therefore, may be

[1] In absolute value, the average change in real auto output was $4.5 billion from 1980 to 1985, compared with $15.8 billion for total real GNP.

[2] Motor Vehicle Manufacturers Association, *Motor Vehicle Facts and Figures* (1984), pages 60 and 72.

[3] The raw data are monthly, but the analysis has been simplified by aggregating the three months of each quarter. In addition, the data is adjusted using seasonal factors from the Bureau of Economic Analysis.

Estimates of the Econometric and Combination Models

Our econometric model is based on a simple supply and demand model. Demand for autos increases when real disposable income rises, the price of new autos falls, or the price of other durable goods increases. The supply of autos expands when inventories are low relative to sales or when the cost of borrowing declines. Low interest rates also increase the demand for autos.

Estimates for both the econometric model and the combination model are presented at right. Each variable is lagged one quarter, since the actual value of each variable would not be known at the time of each forecast. All the variables are significant and have the correct sign in the econometric model.* Adding the *Ward's* projection to the econometric model significantly improves the overall fit, reducing the standard error of the model by 100,000 autos.† The *Ward's* projection is the most significant variable in this "combination" model, although all the other variables, except "other price", remain significant.

The forecast comparisons reported in the text are not the within-sample predictions of these models. Instead, each model is estimated recursively over the sample, using data from 1967-II to the quarter of the forecast. The prediction errors from these one-quarter-ahead projections are then used to compare the out-of-sample forecasting power of the models.

Variable	Econometric	Combination
Constant	−22301.8	−7931.4
	(−4.5)	(−1.7)
Income	12.9	5.4
	(6.6)	(2.6)
Prime rate	−97.8	−90.0
	(−3.2)	(−3.7)
IS ratio	−19.9	−8.7
	(−6.1)	(−2.7)
Own price	230.4	93.8
	(5.0)	(2.1)
Other price	6.0	1.9
	(2.1)	(0.8)
Ward's projection	*	0.55
		(5.3)
$\bar{R}^2$	0.862	0.914
SEE	532	420
Durbin Watson	2.26	1.82

The sample period is 1973-I to 1985-III. The t-values are in parentheses. All independent variables, except the *Ward's* projections, are lagged one period. The dependent variable is units production (in thousands at an annual rate) and the other variables are defined:

Income = real disposable income in 1972 dollars.
IS ratio = ratio of retail auto inventories to sales.
Own price = the CPI for new autos divided by the overall CPI.
Other price = the implicit deflator for non-auto durable goods sales, divided by the overall CPI.

* Not applicable.

* The coefficient on the own-price variable is positive, which suggests that it is capturing supply-side effects.

† A formal F-test shows that the *Ward's* projections add significantly (at the 1 percent level) to the explanatory power of the econometric model. The opposite test, of whether the econometric model improves the *Ward's* projections, was also supported by the data (at the 5 percent level). Together these tests confirm the results reported in the table in the text: the best forecast combines the *Ward's* projections with an econometric model.

best viewed as production "targets" rather than forecasts.[4]

We can analyze the *Ward's* projections more rigorously by estimating the relationship between actual production and the *Ward's* projections:

$$\text{Auto output} = \underset{(0.59)}{0.275} + \underset{(15.67)}{0.909}\ \textit{Ward's} + \underset{(2.54)}{0.277}\ \text{error}\ (-1)$$

Sample period = 1973-I to 1985-III, SEE = 0.431, $\bar{R}^2 = 0.838$
(The t-values are in parentheses.)

The statistical results from this regression suggest three problems with the *Ward's* projections. First, they provide statistical confirmation that *Ward's* systematically over-predicts.[5] Second, the errors are serially correlated; that is, they tend to persist from one period to the next. This means the errors, as well as the projections themselves, can be used to forecast production. It also implies that better forecasts could be achieved by adding economic variables to the equation. Third, the large standard error means that even adjusted for systematic over-prediction the projections are not very accurate.

Ward's in comparison with other forecasts

Despite these limitations, the *Ward's* projections are useful for forecasting auto output. The table (page 40) compares *Ward's* with three alternative models: an extrapolative forecast in which next period's production is assumed to equal current production; an econometric model of the auto sector including income, price, and cost variables; and a combination of the *Ward's* projections and the econometric model. (Details of the econometric and combination models are given in the box.) Since there is no single criterion for a "good" forecast, we present three standard measures: a good forecast should have little bias (small average over- or under-prediction), high accuracy (small average absolute errors), and high predictive power (explain a large portion of the variation in production). Overall, the *Ward's* projections perform about as well as the econometric model and are clearly superior to the extrapolative model; among the three basic forecasts they rank the worst on bias but the best on the other measures.

A better forecast

To take advantage of the relative merits of the *Ward's* and econometric models, we tried to improve the forecast by combining them. The last row of the table (box) shows the results for a "combination forecast", constructed by adding the *Ward's* projections as a variable to the econometric model. The combination model is better than its components by all three criteria: it has the least bias, the greatest accuracy, and the most predictive power. This suggests that both the *Ward's* projections and the econometric model contain information valuable in forecasting.

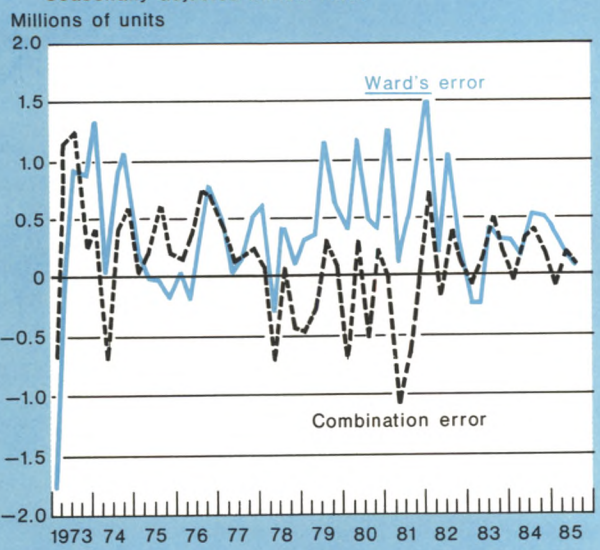
Chart 2 plots forecast errors for the combination model and compares them with the *Ward's* projections. The combination forecast shows small errors and no tendency to over- or under-predict.[6] Of course, more complicated models might provide better forecasts. It seems clear, however, that the *Ward's* projections will remain useful for assessing the outlook for the auto sector and the economy as a whole.

Ethan S. Harris

Chart 2

Forecast Errors of the Ward's Projection and the Combination Model

Seasonally adjusted annual rates



Source: Federal Reserve Bank of New York staff estimates.

[4] The projections are supposed to be "actual production schedules", as reported by production planners, taking into account both production capacity and market outlook. There are at least three possible reasons for systematic over-prediction. First, the normal amalgam of strikes and bottlenecks may thwart plans. Second, the market may be weaker than the (generally optimistic) outlook embodied in the production plans. Third, as part of its marketing strategy each firm has an incentive to exaggerate its plans. An optimistic outlook may help promote sales and increase the stock market value of the firm. Furthermore, by reporting strong production plans each firm may hope to dissuade production by its competitors and thereby capture greater market share.

[5] If the projections were unbiased, with no tendency to predict too high or too low, then the constant term would be close to zero and the slope coefficient would be close to one. A formal F-test of this joint hypothesis shows that *Ward's* does significantly over-predict. The F(2,49) value is 12.51, which is more than double the 1 percent critical value.

[6] The *Ward's* projections appear to have performed better in the last two years. This is more a reflection of the unexpected strength of demand than a fundamental change in forecast accuracy. In fact, if we compare the period 1973-79 with 1980-85, the track record of *Ward's* actually deteriorates over time while the combination model improves.

. . . Projecting Consumer Expenditures on Automobiles

Consumer spending on automobiles is one of the largest and most volatile components of personal consumption expenditures. To gauge the strength of this demand, unit auto sales and retail auto sales are closely watched as early indicators of overall spending and economic activity. This capsule examines the relationship between unit sales and retail sales of autos and their link with consumer spending on autos as measured in the *National Income and Product Accounts*. Our analysis suggests only a weak link between unit sales and retail car sales. Moreover, changes in retail sales of autos convey little information about changes in consumer spending on autos in real terms. In contrast, unit sales are much more closely associated with consumer spending on autos, and therefore appear to be a reliable indicator of consumer auto demand.

Demand for automobiles is measured in three ways: unit sales, retail sales, and real personal consumption expenditures (PCE). Unit sales data count the number of new domestic and foreign passenger cars sold. Retail auto sales data estimate the value of sales by automotive dealers. Personal consumption expenditures data measure the inflation-adjusted spending by consumers on new cars.

These three figures are released at different times each month. Unit sales precede the Census Bureau's advance retail sales report by about a week, and the Bureau of Economic Analysis's nominal and real consumption spending releases by more than two and six weeks, respectively. Since unit sales data are available shortly after the end of the month and then every ten days, they often form the basis for projecting movements in both retail sales and consumer expenditures on cars.

On the whole, movements in unit sales accurately indicate the simple change in direction for both retail sales and consumption. Unit sales and retail sales of autos move together about 75 percent of the time while unit sales and consumer spending on autos move together about 85 percent of the time. In months of declining unit sales, however, the link between unit and retail sales weakens while the relationship between unit sales and consumer expenditures remains strong. When unit sales fall, retail auto sales follow only about half of the time, slightly above the correlation predicted by chance. In contrast, consumer spending on autos falls about three-fourths of the time when unit sales drop.

Statistical analysis also indicates a quantitative relationship between unit and retail automobile sales. Movements in unit sales explain just under 60 percent of the total variation in the growth of current dollar retail sales of autos. An increase of 10 percent in unit sales seems to be associated with a 4 to 5 percent rise in retail motor vehicle sales.[1]

These results do not improve substantially when real retail auto sales replace nominal sales or when any time trend is removed from the retail data. In both cases, unit sales explain less than two-thirds of the variation in retail car sales. In fact, unit sales gains correspond to even smaller estimated increases in retail auto sales after the retail sales data are adjusted for inflation or the rising trend over time in sales volume.

In contrast, statistical analysis yields a good fit between unit sales and real consumer expenditures on new autos. Changes in unit sales explain about 90 percent of the variation in new car spending. Furthermore, a ten percentage point gain in unit sales implies a similar gain in real personal consumption of autos.[2]

Given the weak association between retail sales and unit sales and the good relationship between unit sales and consumer expenditures, it is not surprising that retail sales are not very tightly related to consumer auto expenditures. Statistically, changes in nominal and real retail car sales explain only about 60 percent of the growth in real expenditures on automobiles.

A careful look at the definitions of the automobile sales measures explains why unit sales and PCE on new cars are more closely related to each other than to retail auto sales. A unit sale records the title transfer to a new car, and real PCE on new cars measures the dollar value of the units which are sold to consumers. In fact, the Bureau of Economic Analysis calculates personal automobile expenditures by multiplying the average new car purchase price, in constant dollars and adjusted for quality changes, by the number of units estimated to have been bought by households. Changes unrelated to movements in unit sales are accounted for by shifts in business' and government's share of unit purchases, price changes, and product mix shifts not yet incorporated in the average purchase price paid by consumers. Retail "automobile" sales data, however, include sales of used cars, parts, light trucks, motorcycles, and motor-

[1] See Footnote 2 for the regression results.

[2] The equations were estimated from January 1967 to September 1985 and were corrected for autocorrelation using the Cochrane-Orcutt procedure. The equations are:

$$\begin{aligned} \text{RETAIL} &= \underset{(4.80)}{0.71} + \underset{(17.70)}{0.43}\ \text{UNITS} \\ \bar{R}^2 &= 0.58 \quad \text{Rho} = -0.26 \quad \text{S.E.} = 2.8 \end{aligned}$$

$$\begin{aligned} \text{PCECAR} &= \underset{(1.63)}{0.22} + \underset{(44.23)}{1.04}\ \text{UNITS} \\ \bar{R}^2 &= 0.90 \quad \text{Rho} = -0.42 \quad \text{S.E.} = 2.8 \end{aligned}$$

where RETAIL is the one-month percentage change in retail sales by motor vehicle and miscellaneous automotive dealers, PCECAR is the one-month percentage change in real personal consumption expenditures on new foreign and domestic automobiles, and UNITS is the one-month percentage change in new domestic and foreign unit passenger car sales. T-statistics are reported in parentheses; the UNITS coefficients are significant at the 5 percent level of significance.

boats. Sales of new cars make up only about half of retail automobile sales. In addition, retail sales are not adjusted for inflation when first reported.[3] Therefore, any movements in retail automobile sales due to inflation or sales of non-automobile items will be neither foreshadowed by the unit sales data nor reflected in consumer spending on autos.

[3] See Joann Martens, "Do Unit Sales Predict Car Sales?", Federal Reserve Bank of New York, Unpublished Working Paper No. 8508 (November 1985), for details on these measures.

In sum, this analysis finds that movements in retail auto sales are not very tightly linked to changes in consumer spending on automobiles. The weakness of the relationship suggests that analysts should be cautious in deriving implications for real auto expenditures from real auto sales data. In contrast, unit sales can be a valuable early indicator for both the direction and the magnitude of changes in consumer expenditures on new cars and perhaps for the overall tone of the economy.

Joann Martens

August-October 1985 Interim Report
(This report was released to the Congress and to the press on December 4, 1985)

Treasury and Federal Reserve Foreign Exchange Operations

After rising for a time in August and early September, dollar exchange rates dropped sharply after an announcement on September 22 by the Ministers of Finance and Central Bank Governors of the five major industrial nations. The monetary authorities agreed to pursue additional, specific policies to sustain and accelerate more balanced expansion with low inflation, and to cooperate more closely in furthering an orderly appreciation of non-dollar currencies. For the August-October period as a whole, the dollar extended the decline that had begun in early 1985, against a background of spreading perceptions that U.S. economic growth was slowing while activity abroad was picking up. By end-October, the dollar had fallen nearly 11 percent in terms of the Japanese yen compared with its end-July level, by about 6 percent relative to Continental currencies, and by 2 percent against the pound sterling. On a trade-weighted average basis, the dollar closed about 5½ percent lower than its end-July levels, and 22 percent below its highs of late February 1985.

As the period opened, the dollar continued the irregular decline that had occurred during the previous five months, but the pace of decline was slowing. Economic statistics were still suggesting that growth of U.S. production and employment remained sluggish during the summer months. But market participants doubted that U.S. interest rates would extend the decline that had begun earlier in the spring, since they viewed the Federal Reserve as likely to be increasingly cautious in the face of continued rapid monetary growth. Starting in late August, the dollar actually began to rise as it appeared that the outlook for U.S. economic growth might be more favorable than earlier predicted. Better-than-anticipated trade and employment data prompted market participants to change their expectations for the U.S. economy and for interest rates. Under these circumstances, commercial customers as well as professionals acted to cover short positions and reduce hedges against dollar assets established when the dollar had fallen. Moreover, evidence of a renewed flow of private foreign capital into the U.S. securities markets during September, after a temporary slackening in August, helped to dispel concern that the dollar's decline since the spring would cause a major shift of investor preferences toward non-dollar currencies. The dollar reached its highest levels of the three-month period under review during the second week of September, as traders anticipated that upcoming "flash" GNP estimates would reveal strong growth in the third quarter.

By mid-September, however, market participants began to question whether the expected pickup in economic activity would be strong enough to sustain dollar exchange rates

A report by Sam Y. Cross, Executive Vice President in charge of the Foreign Group at the Federal Reserve Bank of New York and Manager of Foreign Operations for the System Open Market Account. Patricia H. Kuwayama was primarily responsible for the drafting of this report, assisted by Elisabeth Klebanoff.

Table 1
Federal Reserve Reciprocal Currency Arrangements
In millions of dollars

Institution	Amount of facility October 31, 1985
Austrian National Bank	250
National Bank of Belgium	1,000
Bank of Canada	2,000
National Bank of Denmark	250
Bank of England	3,000
Bank of France	2,000
German Federal Bank	6,000
Bank of Italy	3,000
Bank of Japan	5,000
Bank of Mexico	700
Netherlands Bank	500
Bank of Norway	250
Bank of Sweden	300
Swiss National Bank	4,000
Bank for International Settlements:	
Swiss francs-dollars	600
Other authorized European currency-dollars	1,250
Total	30,100

at the levels they had reached, which were 4 to 9 percent higher than those of early August. As these questions led some professionals to take profits, the dollar fell, dropping further when the "flash" GNP estimate turned out to be lower than most market forecasts.

The dollar's fall then gained momentum after September 22, when the G-5 Finance Ministers and Central Bank Governors made their announcement following a meeting in New York. The statement drew attention to changes already occurring in fundamental economic conditions around the world; in particular the shift to more moderate growth in the United States, stronger growth in other countries, and the convergence of inflation rates at a lower level. Recognizing that these changes had not yet been fully reflected in exchange rates, the officials affirmed the strong prospects for progress in reducing international economic imbalances and the intentions of the G-5 governments to implement policies to sustain and accelerate these improvements. Each of the countries issued a specific statement of policy intentions to intensify individual and cooperative efforts to achieve sustained noninflationary expansion.

The G-5 announcement had an immediate and strong effect on dollar exchange rates. In part, the exchange market reaction reflected the fact that the announcement was unexpected. More importantly, market participants noted that the initiative had come from the United States and viewed it as a change in the U.S. government's previously perceived attitude of accepting or even welcoming the strong dollar. In addition, the agreement was interpreted as eliminating the likelihood that the Federal Reserve would tighten reserve conditions in response to rapid U.S. monetary growth.

In these circumstances, the dollar dropped sharply on the day following the G-5 announcement even before any official intervention occurred. With Tokyo closed for a holiday, the first central bank operations were in Europe; the dollar had already fallen against major foreign currencies by the time the Bundesbank stepped in to sell dollars at the afternoon fixing in Frankfurt for the first time in more than six months. Later the same day, the U.S. authorities conducted their first operation during the period under review, selling dollars against Japanese yen and German marks in a visible manner to resist a rise of the dollar from the lower levels.

During the next few days, there was some skepticism in the market that the lower dollar levels would be maintained, and a number of commercial customers responded to the apparently attractive rates by buying dollars. This phenomenon was most dramatic in Tokyo where, when the market opened on Tuesday, September 24, after a three-day weekend, dollar demand from corporations and investors spurred the largest turnover on record for spot dollar/yen trading. The Bank of Japan responded with massive dollar sales. Even though these sales were partly offset by sizable normal interest earnings, Japan's published foreign exchange reserves dropped by nearly $1 billion in the month of September. Following these and other operations in subsequent days by the Japanese and other G-5 central banks, market participants came to believe that the authorities were firmly committed to the joint effort and upward pressures on the dollar abated. The U.S. authorities sold a total of $199 million against German marks and $262 million against the Japanese yen during the last week of September and the first week of October, operating repeatedly and visibly at times when the dollar showed a tendency to rise from the lower levels it had reached.

In the two weeks beginning October 7, the dollar came under heavier upward pressure, reflecting strong commercial and investor demand. While impressed with the central bank intervention, market participants still anticipated additional economic policy initiatives. The demand for dollars was spurred when the annual World Bank/IMF meetings in Seoul, Korea, passed without any such announcements. In addition, some statements, attributed to monetary officials at the Seoul meetings, were viewed as expressing satisfaction with the extent of the dollar's decline and suggesting that it would not fall much further. Also contributing to upward pressure on the dollar were growing perceptions that U.S. economic activity was picking up and that new estimates of third quarter GNP growth would show a substantial upward revision.

Table 2

Drawings and Repayments by the Argentine Central Bank under Special Swap Arrangements with the U.S. Treasury

In millions of dollars; drawings (+) or repayments (−)

U.S. drawings on Treasury facilities for:	Outstanding September 30, 1984	1984-IV	1985-I	1985-II	1985-III	Outstanding October 31, 1985
$500 million	*	+500	−230 −270	*	*	*
$150 million	*	*	*	+75 +68	−71.4 −71.4	*

Data are on a value-date basis.

* No facility.

The demand for dollars, especially against the German mark, intensified around mid-October when commercial participants who had held off meeting their dollar needs after the G-5 announcement re-entered the market. But the dollar's rise was largely held in check by coordinated intervention by the United States and other monetary authorities. On October 16, as the dollar staged its strongest rebound since the G-5 announcement, the Desk sold $797 million against German marks and $67 million against Japanese yen, and on the next day it sold additional amounts as the dollar eased back when the upward revision of the U.S. GNP statistics failed to live up to expectations. During the second two weeks following the September 22 communique, the United States sold a total of $1,550.2 million against German marks and $617.6 million against Japanese yen. These operations, some of which were conducted in Far Eastern markets as well as in New York, were closely coordinated with those of the Bank of Japan and European G-5 central banks in their own centers.

During the last two weeks of October, much of the upward pressure on the dollar relative to the European currencies abated in response both to the intervention operations and to a fading of optimism about the U.S. economic outlook. The upward pressure on the dollar *vis-à-vis* the Japanese yen, however, was slower to subside—even though the government of Japan had announced on October 15 a program to increase the rate of growth of domestic demand. Accordingly, the Desk's dollar sales in this two-week period, while more modest in size, were concentrated in yen. In all during these two weeks, the U.S. authorities sold $482.9 million against Japanese yen and $87 million against the German mark.

Late in October the Bank of Japan allowed Japanese money market interest rates to drift higher. It was then that the dollar began to decline particularly sharply against the yen. Many market observers viewed the Japanese actions on interest rates as possibly representing the first of a series of steps to be taken by the G-5 countries to lower interest differentials favorable to the dollar. Despite denials by U.S., German, and Japanese officials that any agreement existed for such coordinated interest rate policy moves, the idea persisted, and the dollar declined across the board to close near its lowest levels of the three-month period under review. It ended October some 13 percent below the level at which it had traded in the week before the G-5 meeting in terms of the Japanese yen, 10½ percent down in terms of the German mark, and 8 percent down *vis-à-vis* sterling. Total intervention sales of dollars by the U.S. authorities, which were split equally between the U.S. Treasury and the Federal Reserve, came to $3,198.7 million during the three months. After September 22, the central banks of France, Germany, Japan, and the United Kingdom sold about $5 billion. The central banks of other G-10 countries sold more than $2 billion.

In other operations, Argentina repaid its drawing on its swap agreement with the United States Treasury established on June 19, 1985. The drawing was repaid as scheduled in two installments of $71.4 million each on August 15 and September 30. The payments coincided with Argentina's drawings from the International Monetary Fund under its new economic stabilization program. Also completed at the same time were the repayments of $460 million outstanding credits to Argentina from twelve foreign central banks, representing their part of the cooperative bridging facility established in June.

In the period August through October the Federal Reserve and the Exchange Stabilization Fund (ESF) realized

Table 3

Net Profits (+) or Losses (−) on United States Treasury and Federal Reserve Current Foreign Exchange Operations

In millions of dollars

Period	Federal Reserve	United States Treasury Exchange Stabilization Fund
August 1, 1985—October 31, 1985	-0-	-0-
Valuation profits and losses on outstanding assets and liabilities as of October 31, 1985	−451.0	−202.7

Data are on a value-date basis.

no profits or losses from exchange transactions. As of October 31, cumulative bookkeeping or valuation losses on outstanding foreign currency balances were $451 million for the Federal Reserve and $203 million for the Treasury's ESF. These valuation losses represent the decrease in the dollar value of outstanding currency assets valued at end-of-period exchange rates, compared with the rates prevailing at the time the foreign currencies were acquired.

The Federal Reserve and the ESF invest foreign currency balances acquired in the market as a result of their foreign operations in a variety of instruments that yield market-related rates of return and that have a high degree of quality and liquidity. Under the authority provided by the Monetary Control Act of 1980, the Federal Reserve had invested $1,796.6 million equivalent of its foreign currency holdings in securities issued by foreign governments as of October 31. In addition, the Treasury held the equivalent of $2,672.1 million in such securities as of the end of October.

REVISED AND EXPANDED PUBLICATION

The Federal Reserve Bank of New York has issued a revised and expanded version of its booklet, *Open Market Operations*.

The 48-page booklet by Paul Meek gives an insider's view of the mechanics of open market transactions and the implementation of monetary policy. The booklet evolved from four earlier editions by Mr. Meek. It is now directed at undergraduate students of economics, participants in the financial markets, and the general public.

Mr. Meek retired last year as vice president and monetary adviser in the New York Fed's open market operations area.

Topics covered in the booklet include:

- How the New York Fed carries out open market operations on behalf of the Federal Reserve System by purchasing securities to supply reserves to the banking system and selling securities to withdraw reserves;
- The significance of Federal Reserve float, Treasury cash balances, and currency in circulation in managing bank reserves; and
- The trading desk's daily agenda, as well as Federal Open Market Committee meetings with primary dealers and conferences with representatives of the Treasury and the Board.

Single copies of *Open Market Operations* are available free from the Public Information Department, Federal Reserve Bank of New York, 33 Liberty Street, New York, N.Y. 10045. Reasonable quantities are available upon request.

Subscriptions to the *Quarterly Review* (ISSN 0147-6580) are free. Multiple copies in reasonable quantities are available to selected organizations for educational purposes. Write to the Public Information Department, 33 Liberty Street, New York, N.Y. 10045 (212-791-6135). Single and multiple copies for United States and for other Western Hemisphere subscribers are sent *via* third- and fourth-class mail, respectively. All copies for Eastern Hemisphere subscribers are airlifted to Amsterdam, where they are then forwarded *via* surface mail. Multiple-copy subscriptions are packaged in envelopes containing no more than ten copies each.

Quarterly Review subscribers also receive the Bank's Annual Report.

Library of Congress Catalog Card Number: 77-646559

Federal Reserve Bank of New York
33 Liberty Street
New York, N.Y. 10045

Return Postage Guaranteed