Economic Review

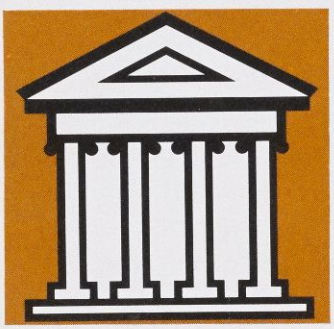
FEDERAL RESERVE BANK OF ATLANTA MAY/JUNE 1980

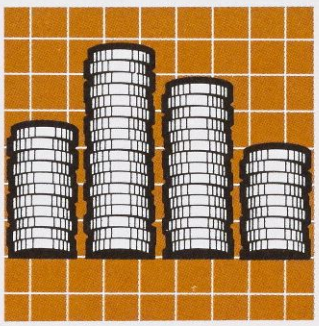
PRODUCTIVITY Southeast Slowdown

NOW ACCOUNTS Q & A for Consumers

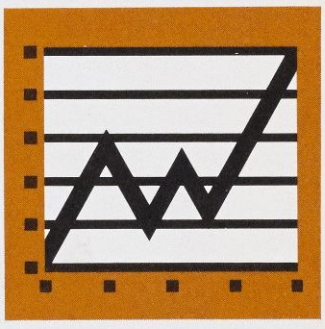
CREDIT Why the Controls?

INFLATION Drives Interest Rates

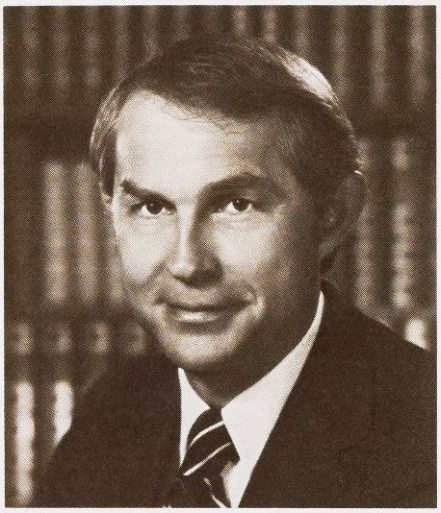






New President for Atlanta Federal Reserve



William F. Ford

The new President of the Federal Reserve Bank of Atlanta will be William F. Ford, currently Senior Vice President and Chief Economist at Wells Fargo Bank of San Francisco. William A. Fickling, Jr., Chairman of the Reserve Bank's board of directors, announced the appointment of Ford, who becomes the Bank's tenth President.

Ford will assume his new position on August 1. Until that time, the Reserve Bank will continue to be administered by its First Vice President, Robert P. Forrestal, who has served as acting President since the retirement of the Bank's former President, Monroe Kimbrel, earlier this year.

Ford joined Wells Fargo, the nation's eleventh largest commercial bank, as a Vice President in 1975. He was named head of the planning department in 1976, and became Senior Vice President and Chief Economist in 1977.

Prior to joining Wells Fargo, Ford served as Executive Director and Chief Economist of the American Bankers Association in Washington, D.C. He also has served on the faculties of the Universities of Michigan and Virginia, and as a full-time staff member and consultant to the RAND Corporation.

Ford earned his master's and doctorate degrees in economics at the University of Michigan in 1962 and 1966, respectively. He also earned a bachelor's degree in economics (summa cum laude) at the University of Texas at Austin in 1961, and is a member of Phi Beta Kappa, University of Texas Chapter.

A native of New York, Ford graduated from Brooklyn Technical High School in 1954 and served as a submarine sailor in the U.S. Navy until 1957. ER

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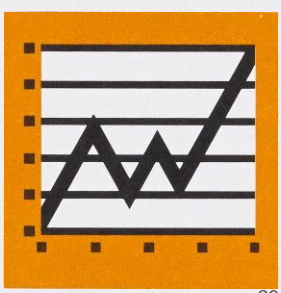

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The purpose of the *Economic Review* is to inform the public about Federal Reserve policies and the economic environment and, in particular, to narrow the gap between specialists and concerned laymen. For more specialized readers, the *Review* also summarizes our basic research projects, which are available in complete form in our Research Paper and Working Paper series.

Southeastern Manufacturing Labor Productivity: Why the Slowdown?

by Charlie Carter

Quadrupled oil prices, expanded government deficits, rapidly growing supply of money and credit, and a devalued dollar relative to the currencies of our major trading countries have all contributed greatly to the rapid increase in inflation we now find ourselves faced with. However, another source of inflation is the fact that, since 1967, productivity growth has not kept pace with hourly compensation.

When wages rise faster than productivity, unit labor costs rise. These cost increases are frequently passed on in the form of higher product prices. That's why growth of unit labor costs has been dubbed the "underlying rate of inflation."

Numerous studies have examined the decline in productivity nationwide, but regional studies are few and far between. One question we wondered about was: How well has productivity held up in the Southeast, especially when we compare it to what has happened to wages? To answer this and related questions, our study focused entirely on manufacturing and thereby avoided measurement difficulties often encountered in studies covering the United States economy.

Productivity Growth Fell but Compensation Accelerated

There was a pronounced slowing in growth of labor productivity in the Southeast after 1967, especially in 1972-76, which included the worst recession years in the postwar period (see Table 1). Annual growth of labor productivity slowed from 2.2 percent per year in 1963-76, to 1.8 percent in 1967-76, and to only 0.15 percent per year in 1972-76. The slowdown was widely distributed across industries and was particularly severe in 1972-76, when labor productivity declined in over half the industries we studied.

Along with the slowdown in productivity growth after 1967 came a sharp escalation of hourly compensation. In textiles, for instance, hourly compensation accelerated to annual increases of 7.6, 7.9, and 9.6 percent in 1963-76, 1967-76, and 1972-76, respectively, while productivity growth slowed from 4.3 percent per year in 1963-76, to 2.9 in 1967-76, and finally -1.3 percent in 1972-76. A similar trend occurred in most other industries.

Slower growth of labor productivity and quite the opposite trend in hourly compensation made for sharp increases of unit labor costs. For manufacturing as a whole, unit labor costs rose at annual rates of 4.3 percent in 1963-76, 5.2 in 1967-76, and 9.3 in 1972-76, respectively. For textiles, the increases were 3.2 percent, 4.8, and 11.1, respectively.

Is the Productivity Decline for Real?

Part of the measured reduction in growth of productivity is purely technical. Overall

The drop in productivity growth is an important cause of U.S. inflation. In the Southeast since 1967, shifts in the industrial mix have contributed very little to the drop. The slowdown in labor productivity reflected mostly declines in output per hour, which resulted largely from a decline in capital per worker and a rise in expenditures to satisfy government regulations.

labor productivity figures can change for any or all of three reasons: (1) changes in output per man-hour — pure productivity change, (2) interindustry shifts in man-hours, and (3) interactions of the pure productivity and interindustry shifts. We have attempted to measure the importance of each of these factors in "explaining" slower growth of southeastern labor productivity.

Almost all the post-1967 slowing in growth of labor productivity was due to declines in actual output per hour. For example, the share of manufacturing man-hours in the six most productive industries (see Table 2) declined from 48.4 percent of

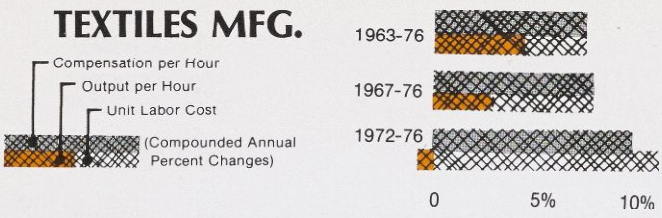
TABLE 1

GROWTH RATES OF LABOR PRODUCTIVITY, COMPENSATION PER HOUR AND UNIT LABOR COSTS IN THE SOUTHEAST BY INDUSTRY

(Annual Percent Changes)

	Labor Productivity			Hourly Compensation			Unit Labor Costs		
Industry	1963-76	1967-76	1972-76	1963-76	1967-76	1972-76	1963-76	1967-76	1972-76
Food processing	2.6	2.6	2.5	7.7	8.6	10.8	5.0	5.6	8.1
Textiles	4.3	2.9	-1.3	7.6	7.9	9.6	3.2	4.8	11.1
Apparel	2.3	2.2	-0.4	6.4	6.8	7.6	4.1	3.9	6.8
Lumber and Wood	2.5	1.0	-2.0	8.6	9.2	8.7	6.0	7.7	10.9
Furniture and Fixtures	2.2	1.5	-1.8	7.1	7.6	8.1	4.8	5.7	10.0
Paper	3.0	2.7	2.2	7.4	8.4	10.8	5.5	7.0	12.8
Printing and Publishing	0.9	0.2	-2.7	6.6	7.2	7.7	5.7	6.6	10.7
Chemicals	2.5	2.1	-1.0	7.2	8.7	10.3	4.6	6.0	11.5
Petroleum and Coal	4.5	4.7	3.9	6.8	8.4	10.8	2.2	3.2	6.6
Rubber and Plastics	1.0	0.2	-5.9	5.5	6.6	7.3	4.5	6.0	13.7
Leather	1.3	1.3	3.4	6.7	7.4	8.1	5.3	5.6	4.5
Stone, Clay, Glass	0.4	-0.4	-3.3	7.3	7.9	9.0	6.8	7.9	15.8
Primary metals	-1.6	-0.6	1.9	7.0	8.4	11.8	8.7	8.7	9.7
Fab. metals	1.5	1.2	-0.2	7.0	7.7	9.6	5.2	8.7	9.8
Nonelectrical mach.	1.2	0.4	-1.2	7.1	8.0	9.0	5.8	7.1	10.9
Elect. mach.	2.2	2.1	-0.1	6.3	7.8	9.0	4.0	5.2	9.2
Transporation Equipment	2.3	2.4	1.8	6.5	7.5	7.6	4.1	4.7	5.7

Source: **Annual Survey and Census of Manufacturers** 1963-1976. Price Indexes used to deflate value added are derived using a methodology described in a Working Paper available on request from the author.



total regional man-hours in 1963 to 40.2 percent in 1976. Ordinarily this type of interindustry shift in man-hours would reduce growth of labor productivity. However, more detailed analysis of all interindustry man-hour shifts suggests that interindustry shifts accounted for a small amount of the decline in productivity growth after 1967. In fact, interindustry shifts acted to boost overall labor productivity in 1972-76 (see Table 3). The decline in growth of labor productivity was dominated by declines in output per hour.

Why Did the Growth of Output per Man-Hour Decline after 1967?

One plausible explanation is slower growth of capital per worker. The less capital (machinery and equipment) available per

TABLE 2

GROWTH OF LABOR PRODUCTIVITY AND SHARE OF MAN-HOURS IN SOUTHEAST MANUFACTURING

One way of showing the influence of interindustry shifts on changes in productivity is to rank each industry by growth of productivity and compare this ranking with the cumulative shares of man-hours in these industries. The results of such a ranking for 1963, 1967, 1972, and 1976 show that there has indeed been a reduction in the proportion of overall man-hours accounted for by the six most productive industries.

Industry	Growth of Labor Productivity (1963-76)	Share of Total Man-Hours (Cumulative Percent) 1963	1967	1972	1976
Manufacturing	2.2	100.00	100.00	100.00	100.00
Petroleum and Coal	4.5	1.04	0.86	0.78	0.78
Textiles	4.3	13.44	12.84	11.84	11.38
Paper	3.0	19.34	18.44	17.12	16.58
Food Processing	2.6	33.24	30.53	27.80	27.18
Chemicals	2.5	40.64	38.17	34.47	34.48
Lumber and Wood	2.5	48.44	44.41	41.17	40.18
Transportation	2.3	55.78	52.81	49.68	48.58
Apparel	2.3	68.78	66.14	62.65	62.28
Furniture and Fixtures	2.2	72.18	69.65	66.23	65.38
Electrical Machinery	2.2	75.78	74.73	72.34	71.78
Fabricated Metals	1.5	80.98	80.55	78.61	77.88
Leather	1.3	82.68	82.13	80.20	79.38
Nonelectrical Machinery	1.2	85.68	86.01	84.44	84.38
Rubber and Plastics	1.0	87.28	87.81	87.33	87.48
Printing and Publishing	0.9	91.28	93.71	91.27	93.17
Stone, Clay and Glass	0.4	95.68	97.56	95.34	95.78
Primary Metals	-1.6	100.00	100.00	100.00	100.00

Source: Derived from value added and man-hour data in various issues of the **Annual Survey of Manufacturers** and **Census of Manufacturers.**

worker, the smaller is productivity likely to be.

Measures of capital per production worker tend to be cyclical, but the magnitude of the decline in the Southeast after 1967 seems more than just a cyclical phenomenon. In Alabama, for instance, gross capital per worker was only 7.3 percent greater in 1976 than it had been nine years earlier. Growth of capital per worker in the manufacturing sector of Louisiana slowed by 4.8 percent per year after 1967 and by 7.8 percent per year in Mississippi after 1967 (see Table 4).

From our estimates, it appears that the sluggish growth of capital per worker since 1967 and slower growth of southeastern labor productivity may be related. Growth of capital per production worker in southeastern manufacturing *declined* from a 1957-76 trend rate of 3.1 percent per year to only a 1-percent rate from 1967 to 1976. That left the Southeast with capital per production worker in 1976 of almost 17 percent lower than it would have been had investment maintained its 1957-76 trend rate. Thus, if capital per worker had continued to grow at its trend rate, productivity of southeastern production workers in manufacturing, in all likelihood, would have been substantially higher by 1976.

Another important factor in slower measured productivity was expenditures

TABLE 3

INFLUENCES OF CHANGES IN INTERINDUSTRY MIX ON GROWTH OF MANUFACTURING LABOR PRODUCTIVITY

Category	1963-76	1967-76	1972-76
Growth of Labor Productivity	2.14	1.79	0.15
Output per Hour	2.17	1.83	-.05
Interindustry Shifts	.05	.03	0.22
Interaction Effects	-.10	-.08	-.04

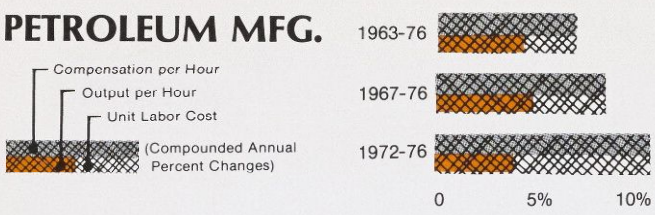
Source: See Table 1. A description of the method used to calculate these influences is available from the author upon request. Due to rounding, growth of productivity may not equal the sum of the categories.

TABLE 4

CONSTANT 1972 DOLLARS OF GROSS CAPITAL PER PRODUCTION WORKER IN MANUFACTURING, 1957-1976

Year	Ala.	Fla.	Ga.	La.	Miss.	Tenn.	District
1957	$15,313	$15,156	$ 9,388	$30,923	$ 7,623	$11,743	$12,520
1967	22,682	21,392	14,811	53,878	15,672	16,995	21,173
1971	22,865	20,653	16,282	60,661	15,453	18,177	22,202
1976	24,337	21,719	16,994	61,997	15,185	18,898	23,230
COMPOUND ANNUAL PERCENT CHANGES							
1957-76	4.7	4.1	5.4	6.4	8.2	3.8	3.1
1967-76	0.8	0.2	1.5	1.6	-0.4	1.2	1.0

Sources: **Annual Survey of Manufacturing (Selected Years)** and **Census of Manufacturing** (1957, 1963, 1967, and 1972). Data are not available for the years 1972 and 1973. Figures are the gross book value of depreciable assets adjusted for inflation using the Implicit Price Deflator for Nonresidential Fixed Investment.



required by government regulations (resources diverted from producing marketable goods and put into protecting the health and safety of workers, improving the quality of the physical environment, etc.). Although important, this output is not usually counted as part of the output measure used to calculate labor productivity. We have attempted to measure the degree to which these governmental regulations affect regional productivity growth in manufacturing, the sector which has borne the brunt of such regulations.[1]

The result is a measure of the dollar cost of environmental requirements to southeastern manufacturers (see Table 5).

[1]To estimate the involuntary cost of environmental expenditures using the incremental approach, however, some appropriate base year is required. Unfortunately, data limitations preclude examination of alternative base years prior to 1973, a year in which many governmental regulations had already been passed. Thus, any increase in regulatory burden since 1973 must be attributed to the passage of amendments to acts passed after 1973, changes in interpretations of those laws, and stricter enforcement of legislation. Thus, if any bias exists, its effect is to render our estimates conservative.

From 1973 to 1976, constant dollar environmental operating expenditures rose at a 15.8-percent annual rate — from $260 million in 1973 to $413 million in 1976. Additionally, capital expenditures for pollution abatement rose at an 8.5-percent annual rate.

By 1976, labor productivity within the southeastern manufacturing sector was 0.68 percentage points smaller than it could have been had environmental standards remained as they were in 1973 (see Table 5). The constraint on labor productivity had been small in 1973 but rose sharply through 1976, the latest year for which complete data were available.

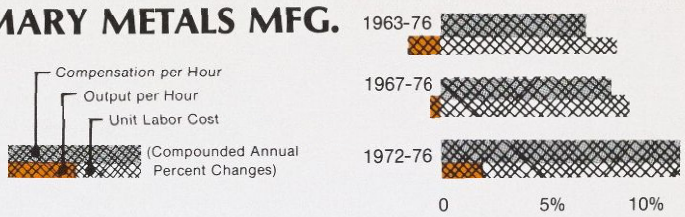
A reduction of 0.68 percentage points in the annual growth of labor productivity represents a significant fraction of historical growth rates of labor productivity. In fact, the reduction in that one year (1976) amounted to 31 percent of annual productivity increases between 1963 and 1976. The impact is even more startling when the environmental constraint in 1976

TABLE 5

CALCULATION OF INFLUENCE OF POLLUTION ABATEMENT ON OUTPUT PER MAN-HOUR IN MANUFACTURING

	(A)	(B)	(C)	(D)	(E)
	Output per Man-Hour		Pollution Abatement Output per Hour (Constant $)	Annual Increases in Pollution Abatement Output per Hour (Constant $)	Annual Increases In Unmeasured Output per Hour (Percent)
	Total (Constant $)	Including Pollution Abatement Output (Constant $)			
			(B)-(A)	(C)-.065	(D)÷(A)
1973	6.942	7.007	.065	.0000	0.00
1974	6.580	6.659	.079	.0134	0.20
1975	6.527	6.620	.097	.0347	0.53
1976	7.027	7.138	.111	.0480	0.68

Source: Derived using methodology described in text. Output per hour was calculated using data from **Annual Survey of Manufacturers** (1973-76).



is compared to more recent growth rates of productivity. The impact of the 0.68 percentage points comprised 37 percent of the annual growth rate of productivity from 1967-76 and fully two-thirds of its growth rate from 1972-76. Putting it slightly differently, some of the fruits of southeastern manufacturing labor are not counted when only marketed products are used to measure productivity. If we add to that figure the additional output due to environmental regulations, productivity growth in 1972-76 would have been almost two-thirds greater than it was. ER

APPENDIX

Our estimates of the influence of interindustry shifts and pollution abatement spending on annual growth of labor productivity are similar to estimates made elsewhere. For instance, Norsworthy et al.[2] found that interindustry shifts of man-hours within U.S. manufacturing slowed growth of labor productivity by only 0.03 percentage point per year in 1965-73. Our estimates show that interindustry shifts of man-hour slowed growth of southeastern labor productivity by exactly the same magnitude, 0.03 percentage point, for the period 1967-76 (see Table 3). The contribution of interindustry shifts to growth of labor productivity in manufacturing increased significantly in the 1973-78 period, as estimated by Norsworthy et al. Our estimates indicate similar increase.

More specifically, Norsworthy et al. found that shifts of man-hours added 0.07 percentage point per year to productivity growth in 1973-78, while our estimates suggest that such shifts added 0.063 percentage point to growth of southeastern manufacturing labor productivity.

Also, the separate estimates are remarkably comparable regarding the influences of pollution abatement spending on slower growth of productivity, despite the different methodologies and time periods used. Norsworthy and others did not obtain a direct measure of the effect of pollution abatement spending on slower growth of labor productivity. Instead, the productivity effect of pollution abatement spending was assumed to operate only through its effect on the usable capital stock. They concluded that between 1973 and 1978, the annual rate of growth of capital stock was reduced from 2.16 percent per year to only 1.47 percent per year when capital spending for pollution abatement was deleted. Under our assumption, capital devoted to abating pollution could have been equally productive had it been used to produce market output. The reduction in the growth rate of the capital stock estimated by Norsworthy et al. was 32 percent (2.16-1.47/2.16). Although our procedure differs from theirs, our estimates of the effect of pollution abatement are remarkably comparable.

Pollution abatement spending cut the growth of output per hour in 1973 by 0.065 percentage point and by 0.111 percentage point in 1976. Thus, the cumulative influence of pollution abatement spending in 1973-76 was 0.046 percentage point (0.111-0.065). Comparing this effect to the actual growth rate of labor productivity, 0.15 percentage point, in 1973-76 suggests that output per man-hour was cut by 31 percent in the Southeast manufacturing sector between 1973 and 1976 due to pollution abatement spending. Thus, our estimates should be viewed as complementary to those of Norsworthy et al. ER

[2]For more details, see J.R. Norsworthy, Michael S. Harper, and Kent Kunze, "The Slowdown in Productivity Growth: Analysis of Some Contributing Factors," **Brookings Papers on Economic Activity: 2,** 1979, pp. 398-408.

NOW Accounts Go Nationwide

with William N. Cox III

Q **What are NOW accounts?**

A Functionally, they are interest-bearing checking accounts. Instead of writing a check, the consumer writes a so-called negotiable order of withdrawal, or NOW. It will look exactly like a check, however, and it will substitute perfectly for checks in day-to-day use. Advertisements may even call it an "interest-bearing check." The attraction for the consumer, of course, is that NOW accounts pay interest while conventional checking accounts do not.

Q **Where can I open a NOW account?**

A Beginning December 31, 1980, depository institutions in all 50 states will be able to offer them to households and nonprofit organizations. Many banks, savings and loan associations, and credit unions in the Southeast are putting the finishing touches on their plans to compete for these accounts.

Q **Are NOWs money?**

A Yes. They function as money. The word "negotiable" in NOW means they can be used for transactions, just like checks. It does not imply, by the way, that any "negotiation" (in the sense of bargaining) is involved. The Federal Reserve includes NOW balances in its definitions of the nation's money stock. To ensure the Fed's control over that money stock for purposes of monetary policy, every NOW-issuing institution will be required to meet reserve requirements against such accounts.

Among the sweeping changes initiated by the "Omnibus Banking Act" (officially the Depository Institutions Deregulation and Monetary Control Act of 1980), is the provision allowing nationwide Negotiable Order of Withdrawal (NOW) accounts by the end of 1980. Although available in New England for several years, NOW accounts will be new to the Southeast. In the following question and answer format, Associate Director of Research Bill Cox provides a basic introduction to NOW accounts.

Q **Is there anything resembling a NOW account available today?**

A Yes. NOWs have been available for several years at many financial institutions in New England and New York. Consumers there have accepted the new account enthusiastically, and financial institutions there have found them feasible. The New England experience with NOWs provided much of the impetus to expand NOWs nationwide.

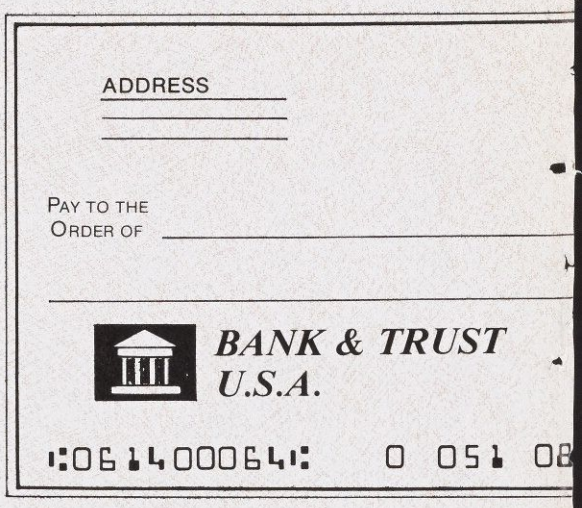
Q **What about here in the Southeast? Are there any NOW-type accounts available today?**

A There are some substitutes, but they are generally more complicated than NOWs. An individual can ask his bank, for example, to cover checks charged against his checking account by shifting funds automatically from his savings account. A few savings and loan associations and credit unions also offer telephone transfers or share drafts, respectively. Some brokerage houses allow qualifying customers to write checks, in effect, against their stock or other investment holdings.

Q **You imply that NOW accounts will begin to replace these other specialized arrangements next year. Is that right?**

A Generally, yes. NOW accounts will be simpler, more widely available, and closer to the checking account setup most people are already used to. The other systems will not disappear entirely, but the New England experience suggests quite strongly that NOWs will comprise most of the interest-bearing checking-type accounts.

Negotiable Order of



NOW s will be virtually indistin

Q **Why cannot banks and other institutions just pay interest on checking account balances?**

A Payment of explicit interest on a checking account has been prohibited by law since the early 1930s. The so-called Omnibus Banking Act, signed by President Carter at the end of March, specifically legalizes nationwide NOWs beginning December 31, 1980.

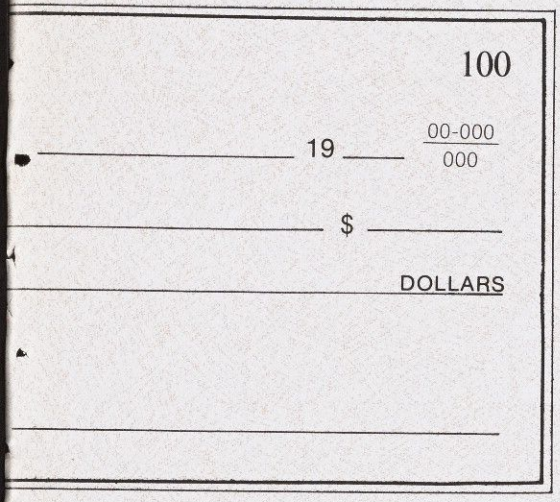
Q **What do you mean by "explicit interest on a checking account?"**

A Most checking accounts already earn *implicit* interest in the form of services performed by a bank — services like processing and keeping track of checks. Studies at the Federal Reserve Board several years ago estimated that the average cost of such services was equivalent to an explicit 4½-percent rate of interest on household checking accounts. These services substitute for explicit interest. So the checking account customer generally "pays" for check processing and bookkeeping services by letting his bank use his checking account balance at zero explicit interest.

Q **But with NOW accounts, that will change.**

A Right. What we have found in New England, and will probably find in the Southeast, is that NOW-issuing financial institutions will be unwilling to pay explicit interest on NOW account balances without reducing implicit interest in the form of free services. People opening NOW accounts next year will generally find themselves paying service charges for checking-type services they are now getting free, or for below cost.

Withdrawal



ishable from checks.

Q **More institutions will be offering NOWs than just banks, then?**

A Yes. Savings and loan associations and credit unions. In New England, banks generally have set high minimum balance requirements for NOW accounts, thereby retaining high-balance customers. Savings and loan associations there, in contrast, have generally tried to attract smaller accounts as a source of "core" deposits. Most experts expect the same pattern to emerge in the Southeast and elsewhere in the country.

Q **Will the explicit interest on a NOW account be lower than on a conventional savings (passbook) account?**

A It may well be. That will be up to how each individual institution decides how to put together its combination of explicit interest paid, checking services offered, minimum balances required, and whether or not NOWs are offered separately or as part of a package of other financial services. In addition, until Regulation Q is phased out, the maximum legal interest rate on NOWs likely will be set below the ceiling on regular savings accounts.

Q **Will NOWs be a good deal for the consumer, then?**

A They won't be for everyone. The person who now carries a large checking account balance and writes only a few checks a month will most likely find NOWs very attractive; the low-balance customer writing many checks may not find it so. In general, though, the consumer will have more options available, and that is a plus. ER

Annotated Bibliography on NOW Accounts

General

- Crane, Dwight D. and Michael J. Riley. **NOW Accounts,** Lexington, Mass.: Lexington Books, 1978, $16.00.
  Aimed at managers and planners in financial institutions, this book analyzes and evaluates different NOW account strategies and provides suggestions for institutions adapting to a NOW account environment.
- Kizzia, Joe W. "As NOW Accounts Loom, Here's Advice from the Experts/What has Happened with New York NOWs in Their First Year." **ABA Banking Journal,** December 1979, pp. 45-46.
  Brief guidelines are given for planning and implementing the introduction of NOWs as well as a chart showing the NOW account activity in New York by type of institution.
- Longbrake, William A. and Sandra B. Cohen. "The NOW Account Experiment." **Journal of Bank Research,** Summer 1974, pp. 71-85.
  An overview of early NOW account developments, including benefits and disadvantages to consumers; competition among depository institutions; and impact on costs, revenues, and profits.

Bank Costs

- "Demand Deposits — NOW Accounts Analysis" in **Functional Cost Analysis: 1978 Average Banks** (Based on Data Furnished by 780 Participating Banks in 12 Federal Reserve Districts), Federal Reserve System, 1979.
  Tables provide analysis of NOW account activity and earnings for banks in two categories, up to $50M and $50M-$200M.
- Paulus, John D. **Effects of NOW Accounts on Costs and Earnings of Commercial Banks in 1974-75.** Washington, D.C., Board of Governors of the Federal Reserve System, Staff Economic Study No. 88, 1976.
  This study reviews shifts in market shares and develops rough estimates of the direct effect of NOW accounts on aggregate commercial bank costs and earnings.
- Reich, Kenneth E. "Now Account Costs: Some Myths Won't Die." **Savings and Loan News,** July 1979, pp. 86-87.
  The New England experience shows that NOW accounts are not expensive to savings associations, particularly if the service is priced appropriately to build average balances and generate service charge revenue.

Competition

- "Credit Unions Enter the Battle for Checking Accounts." **Savings and Loan News,** April 1976, pp. 66-68.
  Described are several successful share-draft programs.
- "NOW Accounts: The Firstest Will Get the Mostest." **Savings and Loan News,** December 1979, pp. 98-99.
  Projections are made for 12, 24, and 36 months for NOW account activity and growth at savings associations nationwide.

Marketing

- Baxter, Nevins D. "NOW Account Marketing — the New England Environment." **Bank Marketing,** August 1977, pp. 6-11.
  A consultant to banks makes suggestions on what financial institutions can do to prepare for the nationwide introduction of NOWs.
- Reich, Kenneth E. "Here's How to Project NOW Account Volume." **Savings and Loan News,** September 1979, pp. 112-113, 115.
  A guide to projecting NOW account volume for savings associations, based on timing of start-up, competitors' strategy, and pricing policy.
- Reich, Kenneth E. "NOW Accounts Teach Marketing Lessons." **Savings and Loan News,** November 1979, pp. 113-115.
  Various marketing strategies for NOW accounts are discussed as well as alternative pricing plans.

Operations

- Edwards, Raoul D. "The Challenge of Check Truncation — For NOW Accounts?" **United States Banker,** February 1980, p. 46.
  A brief description of the benefits of introducing NOW accounts and check truncation simultaneously.
- "NOWs Would Create Ocean of Problems for Data Processors." **Savings and Loan News,** February 1980, pp. 94-96.
  Savings association data centers look at potential problems in processing NOW accounts; the issue of truncation is considered.

Pricing

- Bain, Geri. "When and if NOWs Go Nationwide, Proper Planning and Pricing Will Be Critical to Profitability." **Bank Systems and Equipment,** February 1978, pp. 74-76.
  New England's experience with NOW accounts shows that with planning, the negative effects of offering interest-bearing checking accounts can be minimized and some benefits gained.
- Bauder, Howard L. "The Short-Term Income Benefit of Long-Term NOW Account Planning." **Magazine of Bank Administration,** July 1978, pp. 28-31.
  Uses computerized NOW account pricing models to show how demand deposit accounts can be rearranged to enhance profits.
- Brennan, Peter J. "Some Lessons from New England about the Pricing of NOW Accounts." **Banking,** October 1978, pp. 64-66, 68, 72.
  Discussed are some of the pricing questions New England banks have confronted and some of their answers.
- Crane, Dwight B. and Michael J. Riley. "Strategies for a NOW Account Environment." **The Bankers Magazine,** January/February 1979, pp. 35-41.
  A study of the New England NOW experience provides a framework for aiding institutions in determining which accounts are most profitable and what the optimal pricing policy is. (Tables)
- Furash, Edward E. "NOW Accounts: Preparing for the Inevitable." **United States Banker,** Pt. I, February 1979, pp. 24-28; Pt. II, March 1979, pp. 36-39.
  These articles suggest that NOW accounts require a basic reevaluation of the consumer banking business while providing banks an opportunity to undo pricing mistakes of the past.
- Motley, Lawrence. "NOW Accounts: Profitable for Your Bank?" **Bank Marketing,** April 1979, pp. 13-17.
  Although NOW accounts were initially less popular and showed less activity, the higher resultant balances and fees made them significantly more profitable.

ER

Credit Controls: Reinforcing Monetary Restraint

by John M. Godfrey

As part of his March 14 anti-inflation program, President Carter provided the Federal Reserve with authority to restrain the growth of certain kinds of credit. Recently, the Fed has begun to scale down the restraints, but the reasons, timing and effectiveness of the program, have been a controversial topic for bankers, businessmen, and consumers. Research officer John M. Godfrey examines the program and places it in the context of the financial developments that led up to the controls.

Why Credit Controls Were Imposed. When the Federal Reserve embarked on new procedures for implementing monetary policy on October 6, 1979, many people felt that the Federal Reserve at long last had a firm handle on monetary restraint. Indeed, during the final quarter of 1979, growth in the monetary aggregates slowed to within the Federal Reserve's announced long-run target ranges. Economic and financial developments seemed to indicate that the Federal Reserve would be able to control monetary growth and thereby bring down inflation.

However, in early 1980, it became increasingly clear that the economy was performing differently than had been expected. Many people expected that the economy would begin to slow down and, in fact, enter a recession, or at least that the results of the earlier tightening would be beginning to appear. However, the economy actually experienced positive growth in the last quarter of 1979, and there was still little or no indication it was moving into a recession in early 1980. Short-term interest rates, as measured by the Federal funds rate, drifted down during January 1980 from slightly over 14 percent to slightly under 12 percent. And while the Federal Reserve no longer emphasizes the Federal funds rate quite so much as a policy guide, some people interpreted the downward drift in this rate as a sign that the Federal Reserve was not seriously attacking inflation.

At the same time that short-term rates drifted down, rates in the long-term bond market moved up during January by 50 to 100 basis points. Also, credit demands were extremely strong. Business loans, and particularly those at the larger banks, accelerated to a 25-percent or higher annual rate. The President's budget,

submitted in late January, projected a deficit of $15.8 billion for fiscal 1981, the year beginning October 1, 1980, and ending September 30, 1981. Many people were disappointed with this deficit figure because they feared increased defense spending (in light of the Soviet invasion of Afghanistan) would lead to an even larger deficit.

Perhaps the most significant realization to take place in early 1980 was an increasing awareness that inflation would be much worse than previously expected. Inflation had accelerated to slightly over 12 percent during late 1979, and by early 1980 prices were running at close to a 20-percent annual rate. Speculation was heating up the commodities markets: notably, gold soared to over $850 an ounce, and silver was up to over $50 an ounce. Clearly, expectations of inflation had changed for the worse.

By early February, the long-term credit markets began to deteriorate quite rapidly. Long-term interest rates rose sharply, and analysts began to characterize bonds as being in a "free fall." On February 15, after the producer price index was announced for January, the Federal Reserve Board reacted by raising the discount rate from 12 percent to 13 percent. Still, the credit markets continued to deteriorate, and some people began to fear that the disorderly conditions would lead to a credit crunch (i.e., credit would be denied to many otherwise credit worthy borrowers at any price.) These deteriorating conditions called for a strong policy reaction to deal with the worsening inflationary expectations.

The President's Anti-Inflation Proposal. On March 14, President Carter announced a 5 point anti-inflation proposal. The President first announced there would be increased discipline in the Federal budget. He indicated that the budget for fiscal 1981, submitted just six weeks previously, would be resubmitted and would show a small surplus. By late March, a new budget had been drawn up where spending was reduced slightly and revenue projections were raised so that a small surplus would develop. The second part of the President's program was increased restraint on credit. Specifically, President Carter empowered the Federal Reserve Board to regulate credit under the Credit Control Act of 1969. And almost overlooked in the President's set of proposals was his renewed commitment to seek congressional passage of a credit budget to enable the Federal Government to control government loans and loan guarantees.

The President also announced wage and price actions. He reaffirmed his opposition to mandatory wage and price controls but accepted the recommendations of the Pay-Advisory Committee for higher permissible

President Carter's Anti-Inflation Proposals

- ☐ Increased Discipline in the Federal Budget
- ☐ Restraints on Credit
- ☐ Wage and Price Actions
- ☐ Greater Energy Conservation
- ☐ Economic Structural Changes to Encourage Productivity, Savings, Research and Development

Federal Reserve Monetary and Credit Actions

- ☐ *Special Credit Restraint Program*
- ☐ Restraint on Consumer Credit
- ☐ Increased Marginal Reserve Requirement on Managed Liabilities
- ☐ Special Deposit Requirement on Managed Liabilities of Nonmember Banks
- ☐ Special Deposit Requirement on Money Market Mutual Funds
- ☐ Surcharge on Discount Borrowing by Large Banks

wage increases during 1980. Prices were also to be more closely monitored. The fourth part of the anti-inflation proposal called for greater energy conservation, including a gasoline conservation fee (later rejected by Congress). Finally, the President called for economic structure changes to encourage productivity, savings, and research and development. As part of this approach, he again requested the lifting of interest rate ceilings that have limited the rate of return that smaller savers can receive on time and savings deposits. This part of his program, of course, was enacted in the omnibus banking bill signed by the President on March 30 of this year, which will phase out interest rate ceilings over six years.

The Six Part Credit Restraint Program. With the broad authority of the Credit Control Act of 1969, the Board of Governors of the Federal Reserve System announced a voluntary Special Credit Restraint Program. This program applies to all domestic commercial banks, bank holding companies, finance companies, and credit extended to U.S. residents by U.S. agencies and branches of foreign banks.

The Board also announced a program of restraint on certain types of consumer credit, including credit cards, check credit overdraft plans, unsecured personal loans, and secured credit where the proceeds are not used to finance the collateral. Specifically, the Board established a special deposit requirement of 15 percent for all lenders' increases in covered types of consumer credit (for lenders with more than $2 million in such credit outstanding). This special deposit requirement applies to all banks, finance companies, retailers, and anyone extending these types of credits.

To further limit the ability of banks to attain funds from managed liabilities (including large denomination CD's, federal funds purchased from nonmember banks, Eurodollar borrowings, and repurchase agreements against U.S. government securities), the Board increased the marginal reserve requirement on managed liabilities of member banks from 8 to 10 percent and lowered the base amount by 7 percent. It also applied a special 10-percent deposit requirement on the managed liabilities of nonmember banks. To curtail the rapid growth of credit extended by money market mutual funds, the Board applied a special deposit requirement on any increase of these funds' assets over the March 14 base period. To discourage borrowing at the discount window by large banks, the Board announced a surcharge on frequent discount borrowings.

Special Credit Restraint Program

1. RESTRAIN
bank loan growth to 6-9 percent

2. DISCOURAGE
financing of corporate takeovers or mergers and retirement of corporate stock

While the Federal Reserve actions contained six parts, there is no question but that the Special Credit Restraint Program lies at the heart of the restraint and has received a great deal of the attention. While the Special Credit Restraint Program applies to nearly all lenders, it has been particularly directed to banks.

The Program's Effect on Banks.

Banks, specifically, have been asked to restrain the growth in their loans in 1980 to between 6 and 9 percent over the amount of loans outstanding in December 1979. Banks with assets of $1 billion and over were asked to report monthly, those with assets of $300 million to $1 billion will report quarterly and the smaller institutions will be monitored for compliance during their regular examination by their federal bank examiners. This quantitative control was announced because although the Federal Reserve has been relatively successful in recent years in meeting its monetary growth targets, it has been less successful in holding bank loan growth within the desired ranges.

The broad Special Credit Restraint Program also contains a number of qualitative guides. Banks were discouraged from financing corporate takeovers or mergers and from financing the retirement of corporate stock, except where there is a clear justification in terms of production efficiency. They were asked to avoid financing purely speculative holdings of commodities and precious metals and extraordinary inventory accumulations beyond normal business needs. At the same time and most importantly, banks were asked to maintain reasonable availability of funds to small businesses, farmers, and others without ready access to nonbank credit. To curtail the increased use of the commercial paper market by large businesses, banks were asked to restrain the growth in commitments for the backup lines of credit that firms often use to support their commercial paper issues. Also, banks were asked to maintain an adequate flow of credit to their smaller correspondent banks, particularly those servicing agricultural areas.

Thus, the Special Credit Restraint Program places an overall limit on bank loan growth and attempts to ensure an adequate flow of bank credit to small businesses, farmers, and others. It encourages banks to reallocate their credit to these areas, and they can do so by avoiding making nonproductive loans. Since the Special Credit Restraint Program covers most major lenders and not just banks, banks can turn down loan requests without fear that their competitors will step in and make the loan. Banks can use the quantitative guidelines and the qualitative standards under the Special Credit Restraint Program to turn down requests for undesirable types of new loans.

3. AVOID financing of purely speculative holdings of commodities or precious metals or extraordinary inventory accumulations

4. MAINTAIN reasonable availability of funds to small businesses, farmers, and other forms of financing

5. RESTRAIN growth in commitments for backup lines in support of commercial paper

6. MAINTAIN adequate flow of credit to smaller correspondent banks serving agricultural areas

Program's Success Brings Scale-Down. In May, the Federal Reserve Board began to phase out the special and extraordinary March measures while stressing that these actions do not represent any change in basic monetary policy. As short-term borrowing costs for banks plunged in early May, the 300 basis point surcharge on discount borrowings for large and frequent borrowers was eliminated effective May 7.

By late May, there was clear evidence that bank loan growth had slowed. From a nearly 18 percent January-February annual pace, bank loans rose less than 3 percent in March and actually declined at over a 5 percent rate in April. Consumer loans were down sharply. As a result, the Board acted to reduce gradually many of the restraints over coming weeks. They reduced the marginal reserve requirement on managed liabilities of large member banks and agencies and branches of foreign banks from 10 percent to 5 percent, and adjusted the base upward by 7½ percent. Similar changes were made with respect to the special deposit requirement on managed liabilities of large nonmember banks. The special deposit requirement that applied to increases in covered consumer credit was decreased from 15 percent to 7½ percent. Finally, the Board modified the Special Credit Restraint Program to ensure that the more urgent credit needs are being met — such as those for small business, auto dealers and buyers, the housing market, agriculture and energy products and conservation. To reduce reporting burden, large banks will report bimonthly, and reports from large corporate borrowers will be discontinued. Also, the first quarterly report from intermediate-size banks will be simplified.

A final question remains: how does the Special Credit Restraint Program fit into the basic monetary policy of the Federal Reserve? The answer is best summarized by a statement Chairman Volcker made before the Senate Banking Committee just three days after the Special Credit Restraint Program was initiated. He noted that "the core of our policy ... is the steady application of restraint over the growth of money and the growth of credit through our traditional instruments." The Special Credit Restraint Program remains a complement to the Federal Reserve's basic monetary policies as formulated on October 6. Credit restraint is not a substitute for that policy; it is a complement. The Special Credit Restraint Program, by holding down loan growth, will give time for the basic restraint under the traditional monetary policy tools to hold down banks' reserve growth and, therefore, monetary growth. Credit restraint will give the traditional reserve restraint the time to dampen the inflationary pressures in our economy that have been fostered by the use of credit and rapid monetary growth. ER

Interest Rates and Inflation: What Drives What?

by William N. Cox III

In the sixties when inflation rates were relatively low, people could make decisions involving interest rates without giving much thought to inflation. Today, borrowers and lenders have learned that they must consider inflation's effects on future loan repayments. Evidence shows they have good reason for believing that interest rates depend heavily on inflation.

Short-term interest rates and measures of price inflation generally move together. When one has been high, the other has been high. When one has been low, the other has been low.

But what drives what here? Do changes in interest rates cause changes in inflation? Or do changes in inflation cause changes in interest rates? Are they both responding to something else? Is it all just a deceptive coincidence?

"Interest Adds to Prices"

Interest is an important cost of doing business. When interest rates go up so that it costs more to finance production, the resulting cost increases encourage producers to raise their own prices, in an attempt to pass the additional costs through to the buyer. To the extent that producers are successful in "marking up" their prices, an increase in interest rates will result in an increase in prices, just as would an increase in wage rates or raw material prices. Buyers may balk at higher prices, of course. Most businessmen, however, feel they are able to incorporate interest costs into their prices.

There is some statistical support for their claim. Between 1952 and 1965, for example, quarterly changes in the bank prime rate and the commercial paper rate — the two most prominent measures of short-term business credit costs — were correlated highly and significantly with quarterly changes in the so-called GNP deflator — a broad measure of prices.[1] Statistical associations cannot *prove* any behavior, of

[1]The correlations are .73 and .89, respectively; the Z-scores are 14.0 and 7.9.

The Z-scores measure the degree of statistical significance. A high Z-score of 14, for example, means there is a high probability that the association between the prime rate and price index is not by chance. A low Z-score (near zero) indicates a high probability that the connection is merely random. A Z-score of 2.4, for example, means that the odds are at least 100-to-1 that the correlation measures more than a chance association.

We use these correlation coefficients to measure how closely interest rates and the price index move together. The coefficient of .89 means that the commercial paper rate moved in close conjunction with the price index between 1952 and 1965. A coefficient of 1.00 would mean the two sets of statistics move in perfect synchronization. The coefficient of .55 means that the two moved less closely together between 1966 and 1979.

What is the "Interest Adds to Prices" Measure?

The price index measures the *level* of prices, based on 1972=100. It tells us nothing about *how fast* prices are rising. To find the degree to which interest rates add to prices, we compare changes in the prime rate with the *level* of the price index. In third quarter 1979, for example, the prime rate averaged 12.12 percent, while the price index was 167.2. In fourth quarter 1979, the prime accelerated to 15.08 percent, while the price index rose to 170.6. The correlation of the two shows *not how fast* prices were moving, but how closely the changes in interest rates coincided with changes in the level of prices. ■

If the "interest adds to prices" relationship has been important, we should expect to find that interest rates and price levels have moved together. In a quarter when the prime rate moved up sharply, for example, we should expect to find an index in the price level as the higher costs of borrowing funds are added to costs and to the price level; a fall in interest rates should be associated with a drop in the price level. If, on the other hand, it turns out that the pattern of interest rates has shown little resemblance to the price index pattern, it becomes harder to argue that the "interest adds to prices" relationship has been important.

What is the "Interest Reflects Inflation" Measure?

To find how closely interest rates *reflect* inflation, we compare the prime rate with the *rate of change* (instead of the level) of the price index. Between 1972 and 1979, for example, the price index increased at 12.5 percent per year. When we correlate this inflation rate with our interest rates, we get an indication of how closely changes in inflation coincide with changes in interest rates. ■

If the "interest reflects inflation" relationship has been important, we should expect to find that interest rates and the inflation rate (the *rate of change* in the price level) have moved together. In a quarter when the inflation rate increased (when the price level increased *more* than it did in the previous quarter), we would expect to find an increase in interest rates, as borrowers and lenders incorporate higher inflation expectations into their view of interest rates. A drop in inflation should be associated with a drop in interest rates. If, on the other hand, it turns out that the pattern of inflation has shown little resemblance to the interest rate pattern, it becomes harder to argue that the "interest reflects inflation" relationship has been important. (It was not important in the 1952-65 period, since the interest rate-inflation correlation is close to zero; it was important between 1966 and 1979, however, as the high correlations show.)

course, but these correlations certainly are consistent with the "interest adds to prices" idea.

Since 1966, the correlations have weakened somewhat:

	Correlation Coefficients	
	1952-65	1966-79
Prime rate and price index (GNP deflator)	.73 (14.00)	.31 (4.69)
Commercial paper rate and price index (GNP deflator)	.89 (7.86)	.55 (2.38)

(Z-scores of statistical significance in parentheses. The associated significance statistics are also weaker.)

Therefore, it may seem from the diminished correlation coefficients that the "interest adds to prices" relationship weakened for some reason in the more recent period. That may not have happened, however. Anyone who looks at movements of interest rates and inflation since the Korean War is bound to be struck by the volatility of movement since 1965 compared with the lack of movement before then. The diminished correlation coefficients may well reveal not a weakening of interest's effect on prices, but rather an increase in noninterest stimuli in the post-1965 period of heightened volatility.[2]

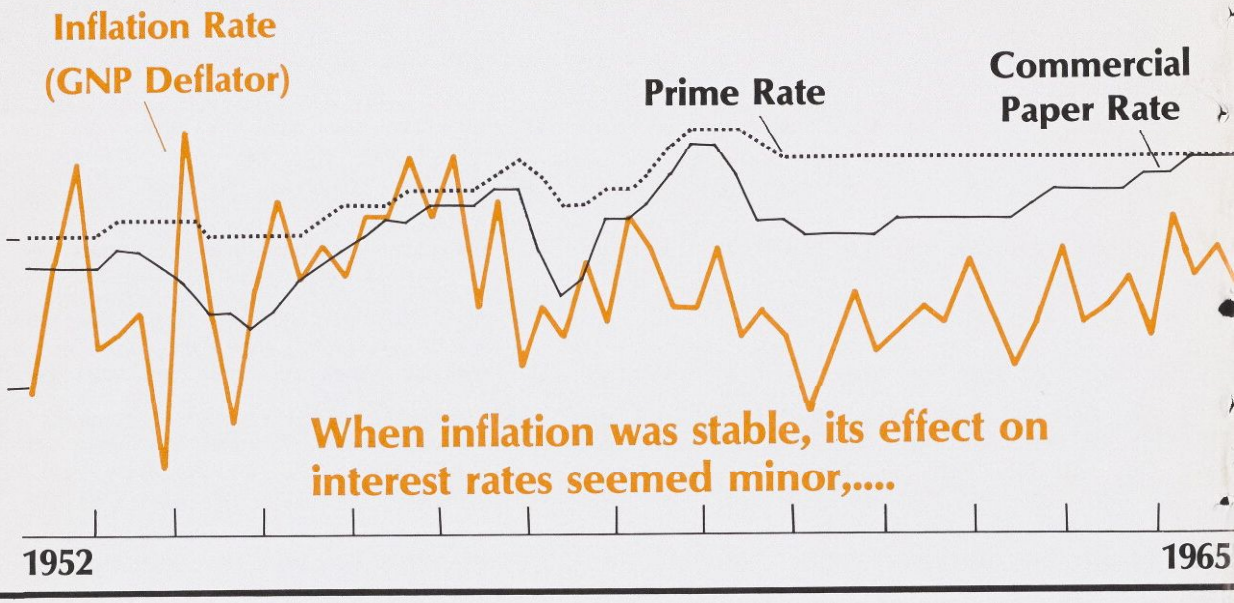
"Interest Reflects Inflation"

We grasp only part of the story, however, unless we recognize that interest rates also reflect inflation, or more properly, borrowers' and lenders' expectations of inflation. If they become gloomier about inflation prospects, they become more willing to accept or set higher interest rates to offset the depreciating purchasing power of loan repayments. Every interest rate includes an "inflationary premium" based on expectations of inflation. When *actual* inflation worsens, those expectations usually worsen, too.[3] Interest rates *reflect* inflation rates.

[2]Lagging the interest rate, thereby allowing more time for interest to work through to prices, does not change these results.

[3]Fears of depreciated purchasing power may well be reinforced by the recognition that, set against a monetary policy of targeted nominal money growth, more inflation is likely to mean higher interest rates because the same money stock will "support" fewer real transactions.

Calm:



So interest reflects inflation, while it adds to prices. Intuitively and theoretically, we have reason to think both relationships are operating, and we need to sort them out. We already noted how the interest versus price index correlations diminished from 1952-1965 to 1966-79.

To see what the data suggest about the second idea, that interest *reflects* inflation, let us repeat the same correlations as before except for one change: Instead of correlating interest rates with the price index, as the "interest adds to prices" idea suggested we do, we now correlate interest rates with the change in the price index — the inflation rate — as suggested by the "interest reflects inflation" idea. Here are the results:

	Correlation Coefficients	
	1952-65	1966-79
Prime rate and inflation rate	.11 (0.45)	.70 (9.93)
Commercial paper rate and inflation rate	-.06 (0.81)	.81 (7.06)

They are consistent with strong "interest reflects inflation" behavior during the more recent period but fail to show any such behavior in the earlier, calmer time period. Lagging the interest rates (to give inflation changes more time to affect expectations and interest rates) does not change these results appreciably, so we are showing the simplest version.

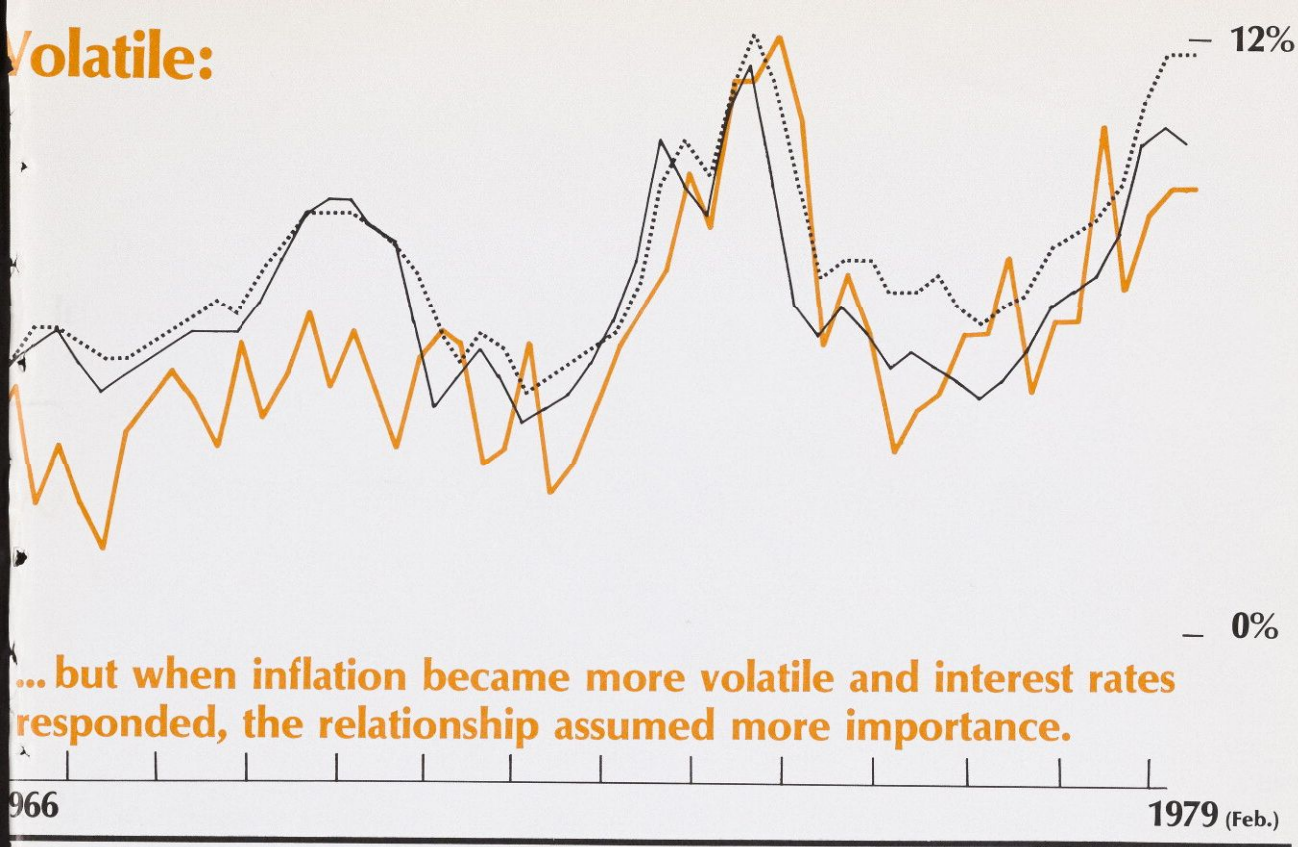
Comparing these results with the earlier coefficients on "interest adds to prices" behavior, it appears that the "interest reflects inflation" idea shows up more strongly (and, statistically speaking, more significantly) since the mid-1960s.[4]

These statistical results are consistent with the following statements:

(1) Interest rates do add to prices, but the relationship has weakened in comparison with other influences on prices since the mid-1960s;

(2) Interest rates do reflect inflation and expectations of inflation, and this relationship has been quite strong

[4]These results are not fundamental, in the sense that there are more basic influences on the whole interest rate-inflation relationship. Readers of this *Review* will recognize that we think monetary growth is quite important on the list of basic influences.



since the mid-1960s. Earlier, its effects failed to appear; and

(3) The strongest relationship in recent years has been the "interest reflects inflation" pattern.

Fed Chairmen Agree

This relationship has been recognized publicly by Federal Reserve leaders in the more recent period.

Chairman Volcker, delivering his first major policy speech on October 9, 1979, put it this way:

> *"When the money supply is brought clearly under control and expectations of inflation dissipate, interest rates will tend to decline... As we turn the corner on prices, upward pressure on wages and other costs — including interest rates — should subside."*

His two predecessors said much the same thing — Mr. Miller in congressional testimony on July 13, 1979:

> *"... the recent and expected inflation also has been an extremely important factor underlying the increase in interest rates..."*

and on June 29 to the Joint Economic Committee:

> *"A good deal of the rise in interest rates this year can be attributed to the acceleration of inflation."*

— and then Chairman Arthur Burns on November 18, 1976:

> *"One of the most damaging results of inflation is the persistence of high interest rates. The basic reason for the high interest rates in our times — particularly on mortgages and other long-term debt contracts — is the relentless rise in the general price level since 1965."*

So interest rates have gone up because inflation has gone up, and interest rate reductions are unlikely to be sustained, in any significant way, until there is a reduction in expectations of inflation. That is the lesson of the 1966-79 period. ER

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