The BUSINESS REVIEW is published by the Department of Research six times a year. It is edited by Judith Farnbach. Artwork is designed and produced by Dianne Hallowell under the direction of Ronald B. Williams. The views expressed herein are not necessarily those of this Reserve Bank or of the Federal Reserve System.

SUBSCRIPTIONS. Single-copy subscriptions for individuals are available without charge. Institutional subscribers may order up to 5 copies.

BACK ISSUES. Back issues are available free of charge, but quantities are limited: educators may order up to 50 copies by submitting requests on institutional letterhead; other orders are limited to 1 copy per request. Microform copies are available for purchase from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Michigan, 48106.

REPRODUCTION. Permission must be obtained to reprint portions of articles or whole articles in other publications. Permission to photocopy is unrestricted.

Please send subscription orders, back orders, changes of address, and requests to reprint to the Federal Reserve Bank of Philadelphia, Department of Research, Publications Desk, Ten Independence Mall, Philadelphia, PA 19106-1574, or telephone (215) 574-6428. Please direct editorial communications to the same address, or telephone (215) 574-3805.

MAY/JUNE 1988

COMMODITY PRICES:
USEFUL INTERMEDIATE TARGETS
FOR MONETARY POLICY?
Robert DeFina

Some analysts have suggested that the Federal Reserve aim at stabilizing the prices of industrial commodities as a means of achieving stability in the general price level. They argue that commodity prices respond more quickly than other prices to changes in monetary policy, and other factors, that eventually affect the general inflation rate. But there are both theoretical and empirical reasons for doubting the tightness of the linkage between commodity prices and prices in general, making it unlikely that targeting commodity prices is a viable way to control inflation.

JOINT VENTURES:
MEETING THE COMPETITION
IN BANKING
Paul Calem

As banks continue to move into new geographic and product markets and face increased competition in markets for financial services, they must choose among different strategies for expanding. One strategy that is becoming increasingly popular is the joint venture—a sharing of ownership between the bank and another firm, often a nonbanking firm. In certain cases, joint ventures offer real advantages over other choices such as internal expansion, mergers and acquisitions, or franchising. To make a joint venture succeed, however, a bank must resolve the “contracting problems” associated with defining the relationship between the partners.
Monetary policy seeks to move toward a stable price level by gradually reducing inflation while fostering steady growth in output and employment. Toward those ends, monetary policymakers aim at intermediate targets—goals which have no intrinsic value, but which help policymakers reach their ultimate objectives.

At different times during the past 20 years, the Federal Reserve has in effect targeted short-term interest rates such as the federal funds rate, and monetary aggregates such as M1, M2, and M3. Each strategy has enjoyed its share of success, but each has revealed significant shortcomings as well. Those shortcomings have led policymakers and economists to explore other, possibly more effective intermediate targets.

Industrial and agricultural commodity prices which are sensitive to changes in the level of economic activity are one suggested alternative. Supporters of commodity price targets argue that by limiting movements in the prices of items...
like gold, lumber, and other raw materials, the Fed can better stabilize economic activity. Indeed, one proponent claimed that such a guide would have enabled the U.S. economy to avoid all major recessions since 1915.¹

Contrary to those claims, the strategy of targeting commodity prices is hardly foolproof. Close scrutiny of the approach and a review of available empirical studies that bear on the issue uncover serious weaknesses. Overall, the case for commodity prices as intermediate targets appears unconvincing based on currently available evidence.

**USING INTERMEDIATE TARGETS TO GUIDE POLICY**

Several factors in addition to monetary policy influence real economic growth and inflation, and changes in any of them can destabilize the economy. Swings in spending by businesses, consumers, and governments, for example, can cause sizable fluctuations in prices and output. So too can shifts in production costs, like wages and energy prices, which affect the supplies of goods and services. Monetary policy essentially tries to counteract those disturbances so as to keep the economy on an even keel.

Since their aim is to stabilize economic conditions, it would seem natural for policymakers to focus directly on the latest price and output data when making short-run operating decisions. Lags in the policy process, however, make such a strategy impractical and imprudent, and have led the Fed to take a different tack.

**Information Lags.** Information lags constitute an important practical difficulty facing policymakers. At present, timely data on aggregate prices and output are unavailable. Comprehensive data on overall economic conditions are available only on a quarterly basis: preliminary estimates are released about 20 days after the end of the quarter, and the numbers are subsequently revised at least twice. All told, policymakers must wait almost three months after a quarter ends to get an accurate view of that period’s aggregate economic performance.

Policymakers obviously cannot base their decisions solely on three-month-old data or they would be reacting to conditions that have already occurred. By that time, the situation could be totally different, and could require a completely different policy response. In the end, policymakers could actually destabilize rather than stabilize prices and output.

**Impact Lags.** But even if policymakers could somehow get more timely information on real growth and inflation, they still would shy away from acting solely on that news because it takes time for policy changes to affect the economy. When the Fed seeks to alter economic activity, it must use one of its tools to start a lengthy chain of events that eventually moves the economy in the desired direction. The Fed’s actions, such as its conduct of open market operations, most rapidly affect financial markets where they alter interest rates, money supplies, and credit availability. Those financial market developments then lead consumers and businesses to reevaluate their spending decisions. If interest rates rise, for example, consumers will want to purchase fewer cars and houses, and businesses will want to buy fewer new machines than otherwise. And as each group revises its spending plans, businesses will correspondingly adjust production levels. Eventually, perhaps six to nine months after the Fed’s initial action, the overall levels of output and employment will change. Inflation also will change, but with an even longer lag; by some estimates, monetary policy actions take between one and two years to influence prices.

Impact lags argue against stressing current economic events in policy decisions. The Fed might quickly develop a policy response which is right for existing conditions. But by the time those actions begin to take effect, the situation and its policy needs could have changed dramatically. The economy could end up receiving a

dose of stimulus when restraint is called for, or vice versa. Once again, policy could lead to less economic stability, not more.

**From Final Goals to Intermediate Targets.** The dangers of focusing directly on the goal variables are clear, and make a case for using an alternative policymaking approach. Throughout much of the post-war period, that alternative has taken the form of targeting intermediate variables.

Using an intermediate target approach requires the Fed to find a variable on which it can get up-to-date information, which it can closely control, and which has a tight, reliable link to future movements in the goal variables. Once policymakers locate such a variable, they must select its target value, that is, the level or growth rate of the variable which is consistent with steady economic growth and long-term price stability. The Fed then uses one of its tools, such as open market operations, to keep the variable on target. The hope is that by quickly correcting deviations in the chosen variable from its target, the Fed will better achieve ultimate economic goals. “Hitting the intermediate target” has no intrinsic significance; it only has importance insofar as it helps the Fed reach its final objectives.

In theory, intermediate targeting mitigates the difficulties created by lags. Information delays no longer stymie policymakers because they now track a variable on which current data are readily available. The procedure handles impact lags as well, because policymakers rely on something that reliably signals future changes in the goal variables. And if the chosen variable’s deviations from its target consistently warn of problems far enough in advance, then they will permit corrective policy actions to be taken, to filter through the economy, and eventually to work at the desired time.

**Finding the Right Intermediate Target.** A significant practical challenge facing policymakers is to find a variable that fits the bill of an intermediate target. The Fed has tried several through the years, most notably nominal interest rates and the M1 measure of money (currency plus checkable deposits). At the conceptual level, each of those variables appears to be a good candidate. Current information on each variable is readily available, and there are solid theoretical arguments suggesting that money and interest rates are linked to future economic conditions. Moreover, each is a financial variable and so is likely to be controllable by the Fed, presuming that depositors and banks behave in relatively stable, predictable ways.

Interest rates and M1 actually have served well as targets during particular periods. Eventually, however, each exhibited shortcomings.2 The link between these variables and future economic activity ultimately deteriorated and their performance as targets became erratic. Thus, the Fed could no longer rely on them to give clear warnings of coming problems. The Fed currently sets target ranges for the M2 and M3 measures of money, which are broader than M1 and include less liquid items such as savings and time deposits. While M2 and M3 are somewhat useful as intermediate targets, studies suggest that they too have a fairly loose connection with the goal variables.3 Consequently, the search for more effective intermediate targets continues.

**Commodity Prices Are a Possibility.** Some analysts recently have recommended targeting sensitive industrial commodity prices—either the price of a single commodity, like gold, or the price of a basket of commodities, including metals, lumber, and oils, among others. The thrust of their proposals is that the Fed should use its policy tools to correct deviations in commodity

---


prices from a predetermined target level. They argue that doing so will help the Fed achieve stable prices and sustainable economic growth. For example, one proponent has written:

If monetary policy cannot effectively stabilize prices...by controlling quantities of M, then why not focus directly on some sensitive measure of price? If such prices are falling, that would be a sign...for the Fed to buy bonds, or to lower the discount rate or reserve requirements. If prices start to climb, it is time to tighten....Since broader price indexes are too insensitive, what about narrowing the list to only one commodity—namely, gold—that is notoriously sensitive to every whiff of inflation or deflation?4

Another has expressed a similar sentiment:

Abandon the present concept of monetary targets....In place of the targets the Fed should be permitted a monthly range of discretion regarding the creation of money. The range of discretion should change automatically in response to changes in an index of sensitive commodity prices.5

The idea that commodity prices should play some role in monetary policymaking is not a new one. Around the turn of this century, the U.S. monetary system embraced a gold standard, under which the Treasury bought and sold gold so as to peg its price at $20.67 per ounce. Members of Congress and the academic community during that period felt such a scheme would lead to steady growth without inflation. Although the plan had limited success and was ultimately dropped, some individuals, such as Professor Robert Mundell of Columbia University, currently think monetary policy should return to the gold standard.6

Policymakers have also used commodity prices through the years as one of their many indicators of future economic conditions. That is, policymakers have relied on commodity prices for clues about future trends in goal variables without mechanically responding to movements in those prices, as would happen if commodity prices were targeted. Indeed, Treasury Secretary Baker has recently suggested that paying greater attention to commodity prices can help industrial countries coordinate their monetary and fiscal policies in mutually beneficial ways.7 Proposals for targeting commodity prices, then, contain elements of procedures that have already been followed.

As with nominal interest rates and money measures, one can enumerate legitimate reasons why sensitive commodity prices might make effective intermediate targets. The case is not ironclad, however. There can be no dispute that current commodity price data are readily available. Newspapers publish information on various commodity prices with a one-day lag, an inconsequential delay for policymakers. But whether the Fed can control those prices, and whether exerting such control leads to desired future economic conditions, is less clear-cut.

CAN THE FED CONTROL COMMODITY PRICES?

Avenues by which the Fed could influence commodity prices certainly exist. Most commodity prices are determined in auction markets where they respond readily to shifts in supply and demand. Monetary policy can do little to change the supplies of commodities. Those depend on factors such as the amount of resource exploration that firms undertake, changes in extraction technologies, changes in the weather, and so forth. Policy can, however, influence the demand for commodities.

Manufacturing activity represents a major source of demand for commodities—the pro-

---

duction of finished goods like jewelry, perfumes, and houses entails the use of commodities like gold, oils, and lumber. Because monetary policy influences aggregate spending for goods and services, it can alter the industrial demand for commodities. Commodities are also demanded as investments by individuals and firms who speculate that commodity prices will rise in the future—by buying commodities when they are relatively cheap and selling or using them when they are relatively expensive, individuals obtain a capital gain. Because Fed actions influence both the future path of commodity prices and the level of interest rates (the return on alternative investments), they can lead investors to adjust their speculative demands for commodities.

But while some link between policy actions and commodity price movements exists, chances are small that the Fed can control those movements quickly enough or precisely enough. The fact that policy affects industrial commodity demands only indirectly by changing the overall level of economic activity suggests control through that channel will be subject to lengthy impact lags. It also suggests control will be inexact. In particular, monetary policy is only one of many factors determining commodity prices. Unanticipated shifts in other factors could make commodity prices quite variable and hard for the Fed to target closely, especially within sufficiently short time spans. Moreover, because the Fed influences industrial commodity demands by affecting overall activity, the relation between commodity prices and policy actions will vary whenever policy's relation to aggregate demand changes. The large variations in M1 velocity that have occurred throughout the 1980s exemplify such changes. Those variations have made it more difficult for policymakers to predict how their actions will affect aggregate demand, and thus commodity prices. To the extent that such instabilities are unforeseen, the Fed's ability to control commodity prices diminishes.

The Fed is not likely to be any more effective in controlling commodity prices through its influence on speculative demands. Like industrial commodity demands, speculative demands respond to a variety of forces in addition to monetary policy. Those other factors include "economic fundamentals" such as the stance of fiscal policy, political developments such as war in the Middle East, and intangibles often termed "investor psychology." As a consequence, speculative commodity demands tend to be quite volatile, and hence hard to control. Moreover, a given change in monetary policy can have very different effects on investors' price expectations, depending upon whether investors believe the policy change is temporary or long-lasting. Thus, the Fed cannot be sure exactly what impact a policy change will have on speculative demands. Ongoing innovation in financial markets also makes the connection between policy changes and commodity price movements unstable. As new financial products are introduced, the speculative demand for commodities might become more or less sensitive to policy-induced interest rate changes. Since the Fed cannot forecast those innovations, and since their impacts on speculative commodity demands are hard to fathom, they make policy's effect on commodity prices more unpredictable.

Available Evidence Finds No Obvious Link. Unfortunately, empirical evidence which bears on the Fed's ability to control commodity prices is sparse and somewhat unsophisticated. Consequently, it cannot be taken as conclusive. But what evidence is available suggests that the Fed would have difficulty controlling commodity prices closely. R. W. Hafer examined the issue by gauging how quickly and reliably commodity prices changed in response to movements in the money stock, his proxy for the Fed's policy instrument. To measure how closely money and commodity prices have moved historically, he calculated the simple correlation coefficient be-

tween quarterly percent changes in an index of industrial commodities and quarterly percent changes in M1 lagged one quarter. Hafer concluded that the relationship has been very weak. He found the correlation to be statistically significant (different from zero) for the entire 1960:1 to 1983:3 period that he studied, although the magnitude of the correlation is quite small (0.23). Moreover, the link appears very unstable: the correlation is statistically significant in only one of the four subperiods between 1960 and 1982 that he studied. And even in the 1965:1 to 1969:4 period when the link is significant, the size of the correlation is again quite small (0.47).

One limitation of Hafer's study concerns his proxy for the Fed's policy tool. The money stock is not something that the Fed can control directly; rather, the Fed controls variables such as nonborrowed reserves and the federal funds rate. But a simple extension of Hafer's analysis to examine the correlation between those instruments and commodity prices or gold prices leaves his conclusions unaltered. Virtually none of the correlations is statistically significant (different from zero), even allowing a full year for changes in the policy instruments to have an effect. In addition, some correlations which are statistically significant change sign across different time periods, suggesting that those relations are unstable. Similar results emerge when simple regressions are used to examine the links.

Can Controlling Commodity Prices Help the Fed Achieve Its Goals?

In Some Cases It Might. Controlling commodity prices will help if commodity price increases have a strong positive link to future changes in the goal variables, for instance, if rising commodity prices reliably signal future accelerations in real economic growth and inflation. Then, when the Fed tightens policy to reverse the commodity price increase, it will slow overall economic activity and moderate the coming economic boom. That is exactly the right response given the Fed's desire for steady growth and stable prices.

Such a positive link might exist if commodity

Taken together, available evidence and simple extensions reveal no obviously strong connection between commodity prices and the Fed's operating instruments. The results suggest that the Fed cannot quickly bring commodity prices to desired levels, and thus do not support targeting them. It is, of course, possible that more sophisticated statistical techniques might uncover the necessary relation. Moreover, the Fed has never tried to control commodity prices, and perhaps it could find a way to do so successfully. But before trying, policymakers need to know whether commodity price targets will help achieve economic goals. That is, will correcting deviations in commodity prices from a predetermined target level improve the Fed's chances of promoting steady economic growth and stable prices? The answer, as it turns out, is not clear-cut.
Commodity Prices

Robert H. DeFina

price increases are part of a general inflation caused by aggregate spending pressures. Rapidly growing demands for goods and services typically elicit more real output while bidding up prices, including commodity prices, throughout the economy. Those commodity price increases are thought to precede the eventual rise in output and other prices associated with a spending surge. Indeed, the belief that changes in sensitive commodity prices precede changes in real economic activity lies behind the Commerce Department's inclusion of sensitive commodity prices in an index of leading indicators. The logic of the argument is that industrial commodities lie at the source of the production chain. As businesses gear up to meet increasing demands for their products, one of their first tasks is to acquire additional raw materials. Firms, then, start to bid up commodity prices before production rates rise dramatically. Commodities, moreover, are bought and sold in auction-type markets, which makes their prices quite flexible and responsive to growing demands. That sensitivity reinforces the tendency of commodity prices to lead increases in production.

Not all prices adjust continuously in auction-type markets as do commodity prices, however. Many are set by long-term supply contracts and other, perhaps implicit, arrangements at the wholesale and retail level. Such prices move gradually, only after those agreements lapse and are renegotiated. The greater flexibility of commodity prices means that they can react more quickly than most other prices to an increase in aggregate demand. They thus could foreshadow accelerations in overall inflation, as well as in real growth.

But There Are No Guarantees. Increases in commodity prices need not always portend faster real output growth and inflation, however. And if they do not, then commodity price targeting will not help achieve policy goals. Restraining commodity price increases when they have no implications for future business conditions will prove inappropriate—the Fed's tightening will induce an economic slowdown when there otherwise would have been none.

Situations in which commodity prices do not have a positive link with the goal variables arise from developments in specific commodity markets.\(^{12}\) Various market-specific forces, as well as aggregate conditions, alter commodity prices. Adverse weather conditions, for example, can restrict the availability of crops and hence raise their prices. Purposeful actions by suppliers can also affect individual markets, such as when OPEC raises the price of crude oil. Changes in technologies and tastes can move particular prices as well. If consumers suddenly prefer gold jewelry over silver, then the price of gold will rise while the price of silver falls.

Such relative price changes can hold little significance for future real growth and inflation because they generally cause offsetting adjustments in other prices. As in the jewelry example, a run-up in gold prices can go hand in hand with a decline in silver prices. The overall price level, which reflects both, may not change much at all. Neither would overall output: production of gold jewelry will rise while that of silver jewelry will fall.

The Fed might target an index of commodity prices to overcome the difficulties caused by changes in the relative price of commodities, especially ones like gold and silver which have fairly unstable demands. Use of an index would decrease the likelihood of the Fed mistaking market-specific developments for aggregate ones. But even that strategy has its Achilles' heel. Commodities as a group might experience a relative price shift, and hence even the movement in an

\(^{12}\)When commodity prices change as a result of developments in particular markets, policymakers should adjust the target level of commodity prices, rather than try to hit the original target. The obvious practical difficulty is determining which commodity price changes reflect specific factors and which reflect generalized inflation pressures. An extended discussion of this point is found in Robert E. Hall, "Explorations in the Gold Standard and Related Policies for Stabilizing the Dollar" in Inflation: Causes and Effects, Robert E. Hall, ed. (Chicago: The University of Chicago Press 1982) pp.111-122.
index of commodity prices might have no implications for real growth and inflation. For example, commodities on average might become less expensive relative to services. Such a relative price shift occurred in the early 1980s due to the dollar’s sharp appreciation. The dollar’s appreciation made foreign goods less expensive, and since the U.S. imports many commodities and raw materials, their prices fell. The average or general price level did not fall, however. Relative price changes, moreover, might reverse quickly. Speculators, for instance, can inflate commodity prices only to have their bubble burst soon after.

The theoretical case for commodity price targets appears far from airtight. Conceptually, one cannot know what implications a change in commodity prices has for real growth and inflation, and hence whether reversing that change makes sense. The Fed could try to determine the importance of each change in commodity prices before acting. But the time and effort required for that procedure greatly diminish the potential usefulness of commodity prices as intermediate targets.

Available Evidence Again Finds No Obvious Link. The rationale for controlling commodity prices might become clearer at the empirical level, however. For although a variety of relations between commodity prices and the goal variables can arise, one which is strong, positive, and quantitatively consistent might actually predominate. And if it does, policymakers might feel confident that controlling commodity price fluctuations will help.

Alan Garner provided one piece of evidence on the issue. He computed simple correlations between real GNP and current and lagged values of an index of commodity prices to see if commodity price changes give information about future economic activity. He then made the same calculations using the GNP deflator, a comprehensive price index, to see if commodity price changes contain information about future inflation. Garner studied two time periods and used quarterly percent changes of all the variables involved.

Within Garner’s framework, positive and statistically significant correlation coefficients would be evidence in favor of commodity price targeting. Such correlations would indicate that increases in commodity prices eventually and consistently lead to accelerations in real growth and inflation. If they also display similar patterns across the two time periods that Garner examined, that would suggest that relations between commodity prices and the goal variables are stable. Garner found, however, that the correlations were generally small and insignificant in both periods, and thus provide no support for commodity price targets. Applying his approach to a wider range of commodity price measures and time periods also fails to find consistently strong positive correlations.

Correlation coefficients only reveal the connection between commodity price changes in one quarter and changes in goal variables in some other quarter. It may happen, however, that the link between commodity price changes and movements in the goal variables is distributed over several quarters. To investigate that possibility, and hence to obtain a broader view of the link between commodity prices and the goal variables, simple regressions were estimated in which real growth and inflation were permitted to correlate with percent changes in commodity prices over an eight-quarter horizon. Several time periods and several com-


14The goal variables used in the calculations are quarterly percent changes in real GNP and in the GNP price deflator. Each goal variable was correlated with the contemporaneous value and four lagged values of the quarterly percent changes in the price of gold and in the Business Conditions Digest commodity price index. Four time periods were studied: 1959:1 to 1965:2; 1965:3 to 1971:4; 1972:1 to 1978:2; and 1978:3 to 1984:4.
Commodity prices were examined. But in no case did a close and reliable link, positive or negative, emerge.

Brian Horrigan studied the connection between commodity prices and goal variables by taking simple regression analysis one step further. Using monthly data, he used a statistical technique called vector autoregression (VAR) which allows one to examine relations among several variables at once. His monthly estimates gauged the linkages between commodity prices, several other factors, and the goal variables. He investigated various commodity price measures and used consumer price inflation and the growth in the industrial production index as proxies for the goal variables. As with the other results, Horrigan's revealed virtually no relation between changes in commodity prices and changes in either of the goal variables.

One piece of evidence that does suggest a relation between commodity price movements and future changes in inflation was provided by Federal Reserve Board Governor Wayne Angell. Governor Angell discussed evidence that indicated that, over a long historical period, a variety of indexes of commodity prices tended to have peaks and troughs that preceded peaks and troughs in consumer price inflation. Governor Angell did not argue, however, that this evidence supported using commodity prices as intermediate targets. In fact, the lags from the turning points in an average of several commodity price indexes to the turning points in consumer price inflation are quite variable, which is not the kind of tight link necessary for commodity prices to serve effectively as intermediate targets. Instead, Governor Angell's results were intended to point out the potential value of commodity prices as a leading indicator of inflation, and to propose that they could be used to aid the Fed in implementing changes in its monetary targets.

Overall, the usefulness of commodity prices as intermediate targets receives very little support from available empirical evidence. The apparent lack of a significant connection over various time periods found by most studies means that, on average, movements in commodity prices have no consistent link to future macroeconomic developments. In such circumstances, controlling commodity prices, even if the Fed could do so, would not help monetary policymakers reach their objectives.

The case for commodity prices is currently weak

Problems with monetary and interest rate targets have led some analysts to argue that the Fed should control commodity price movements as a way to achieve its policy goals. It is conceivable, but not likely, that commodity prices meet the criteria of an effective intermediate target. Certainly the available evidence, while sparse, argues against it. The need for close control over an intermediate target variable presents a large, perhaps insurmountable, impediment to using commodity prices as a target.

---

15The regressions are of the form:

\[ G_t = a_0 + \sum_{i=0}^{7} a_i C_{t-i} + u_t \]

where \( G \) is either the percent change in real GNP or in the GNP price deflator, \( C \) is either the percent change of the price of gold or of the BCD index, \( t \) indexes time in quarters, and \( u \) is a random error. Equations were estimated for the same four periods as were the correlations (see footnote 14). As before, the conclusions mentioned in the text about the closeness of the relations are based on inspections of the "t" statistic for the sum of the lagged coefficients and of the "F" statistic for the equation as a whole.


18The construction of several of these commodity price indexes is described by John Rosine, "Aggregative Measures of Price and Quantity Change in Commodity Markets," Board of Governors of the Federal Reserve System Working Papers Series, No. 81, (December 1987).
given that the Fed can influence them only indirectly. Available empirical evidence underscores the point that the Fed is unlikely to be able to correct deviations from a commodity price target quickly. And while controlling commodity prices could help the Fed achieve its goals in certain circumstances, in other instances controlling commodity prices could push the economy away from the desired outcomes. Here again, the weight of available empirical results argues against commodity price targets because there appears to be no significant, systematic link over time between commodity prices and real output or inflation. Further and more in-depth empirical study might present a stronger case for using commodity prices as intermediate targets. But unless such a case for commodity prices is made, their prospects as intermediate targets are not bright.
Joint Ventures: Meeting the Competition in Banking

Paul Calem*

In recent years, banks have grown less content to be simply “banks.” Faced with increasing competition in their traditional product markets, banks have sought to broaden the range of their activities. They have introduced new products, such as securities backed by consumer loans. They have pressed successfully for permission to engage in activities that were once legally off-limits, such as discount brokerage and investment advice. And they have proceeded to exploit various loopholes in the legal and regulatory structure. For instance, the Federal Reserve permits bank holding companies to underwrite and deal in some securities deemed ineligible under the Glass-Steagall Act so long as they do so through a subsidiary that is not “principally engaged” in those activities. As a result, a number of bank holding companies now underwrite and deal in commercial paper, mortgage-backed securities, municipal revenue bonds and consumer-related receivables through such subsidiaries.

One way banking organizations expand is

*Paul Calem is a Senior Economist in the Banking Section of the Research Department of the Federal Reserve Bank of Philadelphia.
through "joint ventures" with other banks or with a nonbanking firm. Indeed, the trend towards greater product variety in banking has generated an increase in joint venture activity. Between 1971 and 1982, joint ventures among financial service firms were not very common, with, on average, about three joint subsidiaries formed per year. But in 1983, 36 joint subsidiaries were formed, signaling the start of the new trend. Bank holding companies, in particular, became more active in forming joint subsidiaries at about that time, going from about two per year between 1971 and 1982 to 12 in 1983 and 12 again in 1984. Joint ventures not involving the creation of a joint subsidiary have also become more common. For instance, many banking organizations are now offering mutual funds to their customers by participating in joint ventures with mutual fund companies.1

If deregulation proceeds and banks are allowed to engage in a wider range of nonbanking activities, joint venture activity is likely to continue at a robust pace. Although some banking organizations have used joint ventures as a way around regulatory restrictions, others have found them the least costly, most efficient way to expand into permissible activities.

What lies behind the recent upsurge in joint venture activity? What advantages do joint ventures have over other expansion strategies? What are some of the potential pitfalls of joint ventures? Little has been written on how these issues pertain to banking organizations, and the time is ripe to begin investigating these questions.

**WHAT IS A JOINT VENTURE?**

A joint venture between two firms differs sharply from a mere producer-supplier relationship. A correspondent bank and its commercial bank customer do not have a joint venture—the commercial bank simply "produces" checking accounts by buying check-processing services from a correspondent bank. In a joint venture, however, the firms share ownership at some stage of the production process.

If deregulation proceeds and banks are allowed to engage in a wider range of nonbanking activities, joint venture activity is likely to continue at a robust pace. Although some banking organizations have used joint ventures as a way around regulatory restrictions, others have found them the least costly, most efficient way to expand into permissible activities.

What lies behind the recent upsurge in joint venture activity? What advantages do joint ventures have over other expansion strategies? What are some of the potential pitfalls of joint ventures? Little has been written on how these issues pertain to banking organizations, and the time is ripe to begin investigating these questions.

**WHAT IS A JOINT VENTURE?**

A joint venture between two firms differs sharply from a mere producer-supplier relationship. A correspondent bank and its commercial bank customer do not have a joint venture—the commercial bank simply "produces" checking accounts by buying check-processing services from a correspondent bank. In a joint venture, however, the firms share ownership at some stage of the production process.

In a vertical joint venture, the partners share supply or distribution facilities, but their products retain distinct identities. A check-printing shop that is jointly owned by two banks is a shared supply facility. Automated teller machines (ATMs), when jointly owned by a group of banks, are shared distribution facilities. ATMs give a retail customer access to his bank account without altering the identity of that account as a product of the customer's bank. The bank retains control over account fees and services; ATM access is simply a service provided in conjunction with an account. Frequently, vertical joint ventures serve to make banks' supply or distribution more efficient.

Banks often engage in horizontal joint ventures in order to expand a product line or customer base. In a horizontal joint venture, the firms create a distinct, joint product. Each firm contributes labor, materials, expertise, or assets to the venture, and the firms share ownership of the final product.

One kind of horizontal joint venture is a jointly owned subsidiary providing a special product or service. A trust company owned by two banks is a case in point. But horizontal joint ventures can involve other types of arrangements as well. For instance, banks and mutual fund companies have cooperated to offer investment packages that include both mutual funds and time deposits.
Banks that offer mutual funds to their customers through cooperative ventures with mutual fund companies are, in a sense, circumventing regulations that prohibit them from sponsoring mutual funds. Sometimes, cooperating with another financial firm in a joint venture is the only legal way a bank could participate in a restricted activity, of which there are many. For example, Federal Reserve member banks are prohibited by the Glass-Steagall Act, enacted in 1933, from underwriting and dealing in stocks, corporate bonds, or stock and bond funds. Also, the insurance activities of member banks are limited by the Bank Holding Company Act of 1956 and by the Garn-St. Germain Act of 1982. For state-chartered banks, which need not be members of the Federal Reserve, each state has its own restrictions on their nonbanking activities. In addition, the Bank Holding Company Act of 1956, as amended in 1970, permits a bank holding company to engage only in those activities that are "closely related to banking." Once a nonbanking activity is shown to be closely related to banking, the expected public benefits from a bank holding company engaging in that activity must then be shown to outweigh any possible adverse effects. In most cases, the Board of Governors of the Federal Reserve determines which activities are permissible according to these criteria.

Bank holding companies have used horizontal joint ventures to expand into various permissible activities. The Fed’s Regulation Y lists commercial financing, leasing, financial planning, investment advice, and various other activities as generally permissible for bank holding companies. The Glass-Steagall Act authorizes banks to engage in certain municipal bond financing activities. Forming a joint subsidiary to pursue these activities, however, must be approved by the Federal Reserve Board. If two banking organizations wish to form a joint subsidiary, the Board takes into account the financial strength of the organizations, as well as the potential for adverse competitive effects. If a bank holding company and a nonbanking firm wish to form a joint subsidiary, the Board also takes into account the degree of separation between the joint subsidiary and the nonbanking firm.2

COMPETITION HAS MADE JOINT VENTURES MORE ATTRACTIVE

The push by banks to expand into new activities stems from stiffer competition, both from outside the banking industry and within it. From outside, competitors have made inroads into banks' traditional base of deposit and loan customers. On the lending side, securities firms that offer commercial paper and commercial bond financing have become increasingly sophisticated and aggressive.3 On the deposit side, mutual fund companies compete by offering stock and bond funds as well as money market funds that provide checking and debit card services. Since the Garn-St. Germain Act of 1982 liberalized regulation of the thrift industry, thrifts have competed with banks on both fronts, in the market for commercial loans, as well as for demand deposits. Perhaps the greatest threat comes from the “financial supermarkets,” commercial firms such as Sears, K Mart, and J. C. Penney that provide various kinds of banking services packaged with insurance and discount brokerage.

Within the banking industry, new technology and deregulation have tightened competition. The development of ATM networks and electronic payments systems has greatly enhanced customer access to bank services. As a result, just about any bank faces competition from within a larger geographic area. Deposit rate deregula-


tion has also been an important factor. Regulatory ceilings on deposit interest rates were gradually removed over the period 1982-1986. To the extent that these ceilings were binding, banks must now pay more competitive rates on deposits. Geographic deregulation has further enhanced competition in banking. In the last few years, most states opened their borders to entry by out-of-state bank holding companies. Large regional and money center banking organizations are now moving into new markets nationwide, increasing the competitive pressures on banks in those markets.4

Horizontal joint ventures are one way that banks have gone forth and met the competitive challenge. Through joint ventures, banks have expanded the variety of products they offer to their customers, strengthening customer ties against the pull of competition. Also through joint ventures, banks have found new sources of revenue, easing competitive pressures on their profitability.

**HOW JOINT VENTURES WORK**

One of the most common types of joint ventures is between a bank and an insurance company, a partnership which enables a bank to offer its customers a convenient package of banking and insurance products. The bank is thus able to counter the competitive threat posed by financial supermarkets that offer “one-stop financial shopping.” At the same time, a bank engaged in an insurance joint venture generally earns some rental income.

In an insurance joint venture, an insurance company sets up shop in the bank’s lobby and pays the bank either a flat rental rate or a rate that is tied to the number of insurance sales originated there. In addition, the bank may provide for automatic payment of insurance premiums out of customer accounts. In most cases, federal or state regulations curtail the bank’s insurance marketing activities. What is permissible, however, is for the bank to place the insurance sales staff in a prominent spot, and to include an advertisement from its venture partner in its customer mailings. The John Hancock Mutual Life Insurance Company took a creative approach in 1986 in a joint venture with Wilbur National Bank, a small bank in upstate New York. The bank leased space in its main branch in Oneonta to the insurance company to set up an office to sell life and disability insurance products. The office is conveniently located, accessible both from the bank’s lobby and through a separate, external entrance, enabling the insurance agents to keep separate hours from those of the bank. In addition to advertising through the mail to bank customers, Hancock tries to attract customers by offering basic financial planning services free of charge. The Hancock agents generate some referrals for the bank’s products when counseling customers, but they do not receive commissions.5

Many banks are engaged in joint ventures with mutual fund companies. By making stock and bond funds available to its customers, a bank can retain the loyalty of depositors who might otherwise abandon the bank in favor of a mutual fund company. In addition, the bank can earn substantial fee income. Most commonly, a bank acts as a sales agent for a mutual fund sponsor; since it neither sponsors nor underwrites the fund itself, it does not violate the Glass-Steagall Act. Chase Manhattan Bank took a more unusual approach when it teamed up with The Dreyfus Corporation in 1985. Chase acts as the organizer and manager of the “Park Avenue Funds,” while Dreyfus acts as the sponsor and distributor of these funds. Chase informs its bank and Visa Card customers in statement stuffers that these funds are available through

---


5Details on this joint venture are found in “One Bank/Insurer Venture that Works,” *ABA Banking Journal* (February, 1987) p. 84.
Joint Ventures

Dreyfus. In announcing the venture, the chairman of Chase said it "will provide our customers with a convenient means of obtaining the benefits of mutual fund investments." 6 The arrangement also enhances the bank's prestige, since the bank is providing its own original mutual fund.

Strengthening customer relationships is only one of several reasons that banks have turned to joint ventures. As banks have faced more competitive conditions in their traditional markets, and have watched their profit margins decline, they have sought out new sources of revenue. Sometimes banks have used joint ventures to expand into new, specialized kinds of lending or assets, such as municipal bond guarantees. In other cases, they have sought to expand geographically or broaden their customer base, as when a U.S. bank holding company teams up with an automobile manufacturer to form a motor vehicle financing subsidiary. (For details on these arrangements, see HORIZONTAL JOINT VENTURES: TWO CASE STUDIES.)

**ADVANTAGES OF JOINT VENTURES...**

Although joint ventures may be the only legal route to expansion into restricted activities like insurance and mutual funds, banks have found them a useful way to engage in permissible activities as well. But they are not the only way. Bank holding companies also have responded to changing competitive conditions by acquisition or merger, by developing new products on their

---

*This joint venture was reported in “Dreyfus and Chase Join Forces on Mutual Funds,” American Banker, (November 13, 1984) p. 32.

**Horizontal Joint Ventures: Two Case Studies**

**A Motor Vehicle Financing Joint Venture:** On December 9, 1987, the Federal Reserve Board Approved the formation of a joint subsidiary by Marine Midland Bank and Subaru. The subsidiary, Marine Midland Automotive Financial Corporation, will offer various kinds of financing and leasing services to Subaru dealers and their customers, including retail financing for Subaru purchasers and inventory financing for Subaru dealers. Since the joint venture puts Marine Midland in direct contact with Subaru dealers and their customers, it will enable the bank to expand its automobile financing and leasing activities. Subaru stands to benefit from Marine Midland's experience and know-how in the area of motor vehicle financing, and from the bank's ability to supply funds for the subsidiary's activities. 2

**A Municipal Bond Insurance Venture:** In 1984, Bankers Trust New York Corporation, Xerox Credit Corporation, Phibro-Salomon Inc. and American International Group Inc. formed a joint insurance subsidiary specializing in municipal bond insurance. The venture, Bond Investors Guarantee Insurance Company, guarantees the timely payment of principal and interest on newly issued municipal bonds and bond portfolios. What apparently attracted Bankers Trust to this venture was the rapidly expanding market for municipal bond insurance and the expectation of generating substantial premiums. According to one industry analyst, "demand for this coverage has widely outstripped the supply."

Each of the venture partners has some experience in areas related to municipal bond coverage. Bankers Trust and Phibro-Salomon are both major municipal bond underwriters. AIG underwrites and sells various kinds of financial guarantee insurance, including, on occasion, municipal bond insurance. Xerox Corp., through certain subsidiaries, has been involved in insuring hospital municipal bonds as well as packaging municipal unit trusts. In addition, Bankers Trust brings to the venture its credit analysis skills. In the words of one insurance expert, "municipal bond insurance is a form of financial guarantee and basically involves a credit analysis decision." 3

---

*Details on this joint venture are found in “Marine Midland Teams Up With Subaru,” Bank Expansion Reporter (January 4, 1988) pp. 15-16.

*This joint venture is reported in “Bankers Trust Joins Venture in Thriving Municipals Market,” American Banker (July 20, 1984) pp. 3ff.
own, and by introducing new products that are obtained from a wholesaler. So why is a joint venture sometimes preferred to these expansion strategies?

...Compared to Internal Expansion... Risk and financing considerations can make a joint venture a more attractive option than internal expansion. The parties to a joint venture share whatever risks are involved, while internal expansion requires a firm to face those risks alone. A joint venture may also offer financing advantages. A single organization, especially a small or moderate-sized one, may not have access to the capital needed for expansion. Internal financing may be unavailable, and raising outside capital may be too expensive. Outside investors will require an unnecessarily high risk premium if they cannot adequately evaluate the organization's ability to expand. Moreover, obtaining a loan or floating a new stock issue involves transactions costs, such as the costs of finding, negotiating with, and paying an underwriter. These costs are present regardless of whether the amount of funds raised is large or small. By engaging in a joint venture, individual companies can pool their resources. Thus, the partners to a venture may be able to provide their own financing, or at least provide enough collateral to reduce the risk premium required by outside investors. Moreover, a joint venture may be able to reach a larger market than its partners would reach individually, resulting in comparatively large scale operations and financing needs. Outside financing will then involve a comparatively small transactions cost per unit of funds raised. The joint venture will thus achieve economies of scale in raising capital.\(^7\)

A joint venture may achieve other kinds of scale economies as well. Consider a mortgage banking joint venture, in which the venture partners find themselves serving a fairly large market. The venture can improve its productivity by hiring highly trained mortgage banking specialists, because the large scale of the enterprise ensures that their talents will be fully used.\(^8\)

Another advantage a joint venture might have over internal expansion is the ability to use complementary technology, skills, or information. A U.S. bank holding company familiar with the products of American exporters might team up with a Japanese bank familiar with the needs of Japanese firms to form an export trading company. Or a Texas bank holding company familiar with the regional real estate market might pool its skills with an investment banking firm experienced in the area of investment advice to form a real estate investment advisory firm.

While a bank may be able to achieve any or all of these advantages through merging with or acquiring the venture partner, those options may be ruled out for some activities by regulation. The Bank Holding Company Act would prohibit a bank holding company from acquiring a commercial firm, and interstate banking restrictions could prevent a merger between bank holding companies located in different parts of the country. But even when a merger or acquisition is feasible, a joint venture may be the more attractive option.

...Compared to Mergers or Acquisitions... An agreement regarding a joint venture might be quick and easy to achieve as compared with a merger or acquisition, where negotiations can be costly and time-consuming. Also, a joint venture is relatively easy to dissolve. Hence, it may be preferred by banks that wish to achieve a short-term objective, or engage in activities of uncertain profitability.

---


\(^{8}\) A joint venture may also have relatively more bargaining power with a prospective lender or underwriter, since the lender is dealing with more than one corporation.

---

Also, two banks may prefer a joint venture to a merger if they complement each other in ways specific to the venture, while in other respects the two organizations are incompatible. The Japanese bank in the above example may be highly decentralized, with individual departments operating fairly independently, while the U.S. bank holding company may be far more hierarchical, with the bank president and other top officers exercising considerable control. One organization may be more aggressive, accustomed to making riskier investments for the sake of a higher return, and the other may be more conservative. Or the organizations may have very different procedures for handling employee relations and business practices. Eliminating such conflicts subsequent to a merger could require costly restructuring of the combined organization.

**Compared to Franchising.** A practical expansion strategy for a bank holding company is to package and sell a product obtained from a wholesale provider. For instance, many banking organizations have introduced discount brokerage by linking into the franchise services provided by companies such as Fidelity Brokerage Services and INVEST. If insurance agency activities become permissible for bank holding companies, conceivably some banks would sell insurance as part of such a franchise network. However, not all products and services a bank might wish to provide can be obtained through a wholesale distribution network. Hence, an organization limiting itself to this strategy might pass up some profitable opportunities for product expansion.

The more customized a product, the less likely that it will be available wholesale. When a bank is trying to fill a customer's special needs with a tailored product, wholesale distribution will be inappropriate. Investment advice is a product that is often customized. An individual investor is likely to have unique needs and a special relationship with her bank; face-to-face discussions and a working relationship between the investor and a specialist may provide the best framework for evaluating her investment needs.

Suppose that "Fourth National Bank of the Rockies" wants to advise individual and institutional investors on real estate investment opportunities in the west. Because a franchise arrangement would be inappropriate, the bank might set up an internal operation. Alternatively, the bank might engage in a joint venture with an established investment counseling firm. A joint venture may be chosen over internal expansion for any one of the reasons discussed earlier. For instance, while Fourth National may be quite familiar with the western real estate market, its customer base may be too narrow to justify setting up its own specialized subsidiary.

While joint ventures can offer some distinct advantages over other expansion strategies, they are not without problems of their own. Generally speaking, the aspect of joint ventures that is most likely to be troublesome is the relationship between the venture partners.

**JOINT VENTURES AND THE CONTRACTING PROBLEM**

A joint venture is like any other contractual relationship: it can be disrupted by disagreements, misunderstandings, conflicts of interest, or opportunistic behavior. These problems arise when it is not possible to write a con-

---


11 Of course, a bank can offer limited investment advice through a franchise arrangement. The bank can provide a standard form for customers to fill out and mail to the wholesaler, who evaluates the customers and provides recommendations. However, truly customized investment advice cannot be provided in this way.
tract that allocates specific rights and responsibilities, or specifies actions to be taken, under all possible contingencies. One of the main problems is when both parties have different information. Suppose the parties to a joint venture want the revenues to be divided according to each party's share of the costs. The parties cannot enforce such a contract unless they know a lot about each other's costs. Unlike people who split the cost of a lottery ticket, and can divide their winnings proportionately, it is difficult if not impossible for two firms who produce a joint product to verify each other's costs.

Problems also arise when future contingencies cannot all be anticipated, or when the appropriate contract terms are not evident until a particular contingency arises. Consider, for instance, a joint venture in municipal bond underwriting. It is virtually impossible for the venture partners to write a contract specifying all future bond offerings they will be willing to bid on.

Individuals and firms interacting in a marketplace, and workers and managers interacting within a firm, rely on various institutional mechanisms to minimize contracting problems. In repeated market transactions, contracting problems are made manageable by the use of standardized, legal contracts, and by the need of contracting parties to maintain a reputation for reliability. The use of a standardized contract reduces ambiguity and discourages bickering over the interpretation of contract terms. When a contingency arises that is not covered in the standard contract, a party that behaves "unreasonably" would see his reputation tarnished. Within a single organization, transaction costs are minimized by such institutional structures as the division of a firm into profit centers and cost centers and hierarchical control. For instance, division managers have a certain amount of authority to determine their division's response to unforeseen contingencies, but they must defer to their superiors on major decisions.12

The parties to a joint venture are not engaged in a series of "arm's length" interactions in a marketplace. Nor are they integrated into a single organization; they retain their independence. As a result, the parties to a joint venture are less able to rely on institutional mechanisms to reduce contracting problems, so they are especially vulnerable. Opportunistic behavior or haggling over rights and responsibilities may bring a joint venture to a screeching halt, or may keep it from getting started in the first place. The parties to a joint venture have to reconcile differing goals and expectations and build mutual confidence, trust, and understanding in order to succeed. Indeed, just as clashing corporate cultures can make a merger difficult to accomplish, it can cause instability in a joint venture.

Consider a joint venture between a bank and a mutual fund company. The bank may have a simple objective—making mutual funds available to its customers. It might make a minimal effort to market the funds, which are competitive with the bank's traditional products. The mutual fund company may expect the bank to make more of an effort to market the funds. Interpreting the bank's passivity as a breach of understanding, it may pull out of the relationship.

Or consider a joint venture by several banks in municipal securities underwriting. At some point, one of the banks may wish to bid independently to underwrite a security; the issuer of the security could be a longtime client of the bank, so the bank is willing to accept a lower margin of profit on the security than its partners want. The other partners may consider such independent bidding a breach of the joint venture agreement.

The relative instability of joint ventures is the primary reason why they are less common than alternative expansion strategies, such as mergers or acquisitions. Parties deciding whether or not
to engage in a joint venture weigh the expected advantages against the potential for instability. A joint venture agreement between a bank and mutual fund company could carefully spell out how the bank will go about marketing mutual funds. Similarly, the agreement governing an underwriting joint venture could delineate circumstances under which independent bidding would be allowed. To some extent, then, the threat of instability can be reduced through foresight and ingenuity when a joint venture agreement is fashioned.

CONCLUSION

Faced with increasing competition from outside the banking industry and from within, banks have sought to strengthen customer ties and generate new sources of revenue through product expansion. To these ends, joint ventures involving banking organizations and other financial firms have grown substantially in number. Through horizontal joint ventures, banking organizations have participated in some activities they could not legally engage in on their own. But banking organizations have also taken the joint venture route to expand into permissible activities, because joint ventures can offer various advantages over other expansion strategies. Thus, joint ventures are likely to remain an important expansion strategy even if deregulation makes securities, insurance, and other activities permissible for bank holding companies.

In contrast to internal expansion, a joint venture might allow for firms to share risks and to achieve greater economies of scale. And a joint venture is often easier to arrange than a full-scale merger or acquisition, which may be encumbered by a clash of corporate cultures or long, drawn-out negotiations. But while joint ventures may offer some distinct advantages, they also are particularly vulnerable to disputes over rights and responsibilities and other such contracting problems. The parties to a joint venture have to overcome conflicting goals and develop confidence in their relationship in order to succeed.
The Philadelphia Fed's Research Department occasionally publishes working papers based on the current research of staff economists. These papers, dealing with virtually all areas within economics and finance, are intended for the professional researcher. The papers added to the Working Papers Series thus far in 1988 are listed below.

A list of all available papers may be ordered from WORKING PAPERS, Department of Research, Federal Reserve Bank of Philadelphia, Ten Independence Mall, Philadelphia, Pennsylvania 19106-1574. Copies of papers may be ordered from the same address. For overseas airmail requests only, a $2.00 per copy prepayment is required.

No. 88-1  Mitchell Berlin and Loretta Mester, “Credit Card Rates and Consumer Search.”
No. 88-2  Loretta Mester, “An Analysis of the Effect of Ownership Form on Technology: Stock Versus Mutual Savings and Loan Associations.”
No. 88-3  David Wong, “Inflation, Taxation, and the International Allocation of Capital.”
No. 88-4  Theodore Crone and Richard Voith, “Natural Vacancy Rates and the Persistence of Shocks in U.S. Office Markets.”
No. 88-5  Paul Calem and Gerald Carlino, “Agglomeration Economies and Technical Change in Urban Manufacturing.”
No. 88-6  Peter Linneman and Richard Voith, “Concentration, Prices, and Output in the Automobile Industry.”
No. 88-8  Peter Linneman and Richard Voith, “Housing Price Functions and Ownership Capitalization Rates.”