Economic Review

EXCHANGE RATES
The Pressing Trade Balance Problem
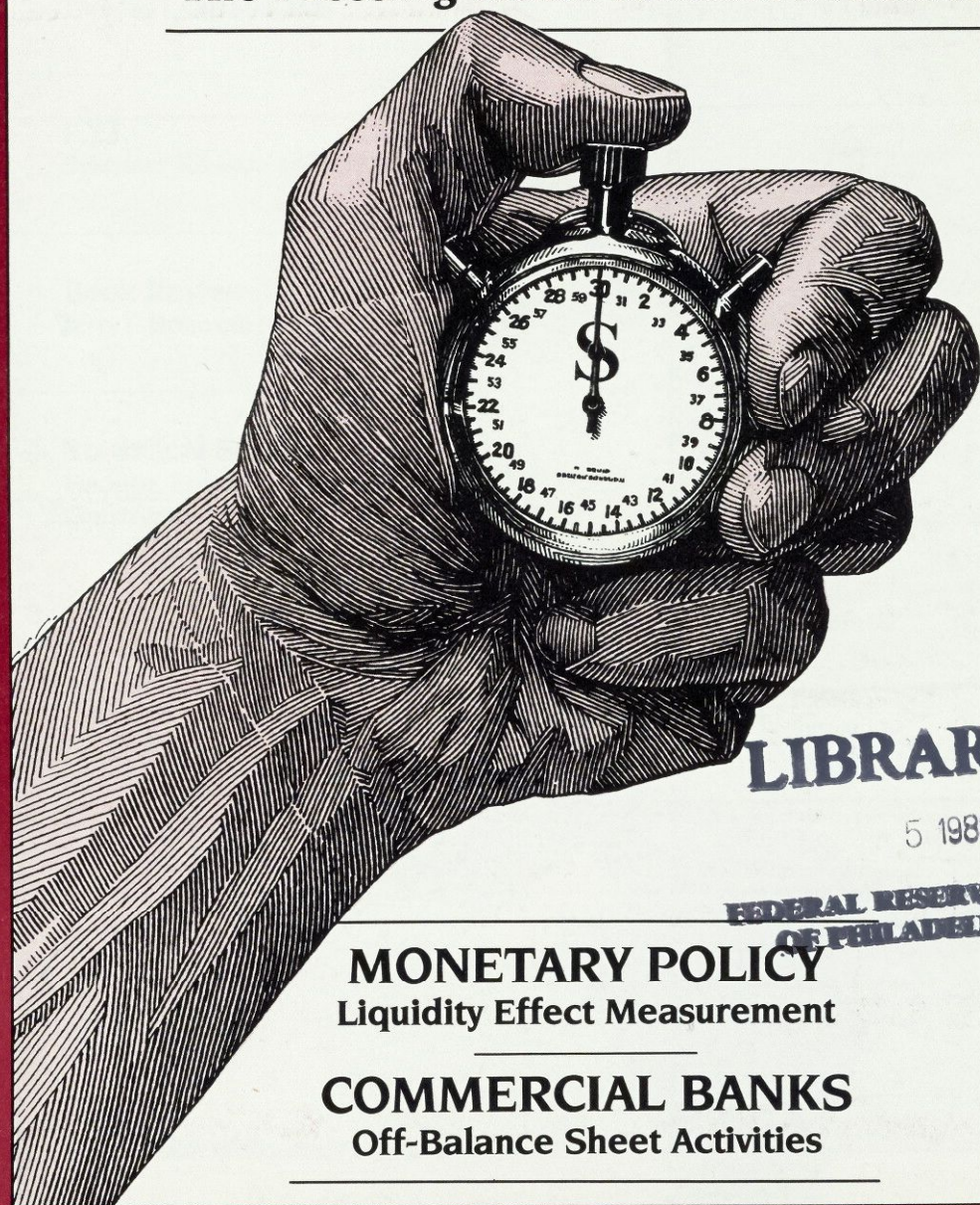
MONETARY POLICY
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Economic Review

FEDERAL RESERVE BANK OF ATLANTA

There are serious problems with the dollar's exchange rate and our Treasury Department, the Federal Reserve System nothwithstanding. Correcting this imbalance will, in my view, require another 30 percent depreciation.

The real exchange rate of the dollar adjusts for inflation differentials over time to tell us how competitive the United States is relative to our trading partners (see Chart 1). When the real exchange rate goes up, we lose competitiveness; when it goes down, we get half our competitiveness back. Over the past five years, our nation's economic experience, as embodied in the real exchange rate index, has nearly paral-

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leled that of Argentina, Mexico, Chile, and Peru. Like those Latin American countries, we have undergone a vast overvaluation of the currency, a dramatic loss of competitiveness, and an incredible trade deficit sustained by an irresponsibly large budget deficit and external borrowing. The difference is that because of our good credit standing, the U.S. figures are much larger than for those other nations. At its height, overvaluation of the U.S. dollar reached 50 percent—an extraordinary level. It is as though while one dealer offers cars at half-price, another sells them for double the price. Playing the latter role in the world market, the United States has yielded most of the business to the half-price vendors.

Understandably, the number of customers worldwide has been shrinking, and more and more foreign firms have been able to outperform us in third markets as well as in the U.S. market. Since 1985, our competitive position has taken a turn for the better: the dollar has depreciated 50 percent or more relative to other major currencies, and with inflation rates not much different among the leading developed countries, that means we have recovered competitiveness. Nonetheless, even after the significant depreciation over the past two years, we

The Dollar: How Much Further Depreciation Do We Need?

Rudiger W. Dornbusch

Staggering deficits in our trade account and domestic budget can be addressed through substantial exchange rate adjustments. International economist Rudiger W. Dornbusch cautions that such adjustments must occur soon if the United States is to avoid the fate of many Latin American debtor nations.

have not regained our 1980 real exchange rate level.

The question of dollar depreciation can be posed in two ways. First, supposing the dollar were to fall to its 1980 level, would that be enough? There are a number of reasons why that might be sufficient, or, if it is not, at least why we should not worry about it. I want to explore those reasons first—and then argue that they are totally unpersuasive. I'll next marshall twice the number of reasons why we *should* worry, offering credible evidence to support this view. We finally arrive at the second question: If it is so obvious that the dollar must decline further, why is it not doing so?

Let us ask first why we should persuade ourselves that the 1980 exchange rate level is enough. The immediate answer is that in that year the U.S. external trade balance was basically in equilibrium. If today's exchange rate reverts to the earlier level, then sooner or later the trade flows will adjust and we should see approximately what we had in 1980. That argument is very strong because we know that there are significant lags in the adjustment of trade flows to the exchange rate. If the dollar goes down today, the people who just bought abroad certainly cannot cancel all their orders. Next

time, however, they may prefer to go shopping in Atlanta. Likewise, those who were unprepared to sell in the world market this season will surely compete there next season. Since substantial evidence exists for long and large lags, it would be irresponsible to urge further depreciation simply on the basis of the latest trade numbers. I will argue later that while this view has merit, it is not sufficient.

A different school of thought says, "Don't worry about the exchange rate. Markets are there to look after things; they put the right prices on currencies as they do on any other asset." According to this logic, if enough people are willing to buy the dollar at the current price, then that is the right price. Consequently, there is no reason why exchange rates should be linked to a level where trade flows balance. If the rest of the world is eager to lend to America, then we should borrow, using the resources to invest domestically, or to consume, or to do whatever people wish at the prevailing interest rates. Proponents of this view would further argue that just as the federal government does not interfere in the stock market, it should stay out of the foreign exchange market. Though unsatisfactory, the argument is a powerful one if you do not know better.

Chart 1.
The Real Exchange Rate for the U.S. Dollar
(Index 1980-82 = 100)
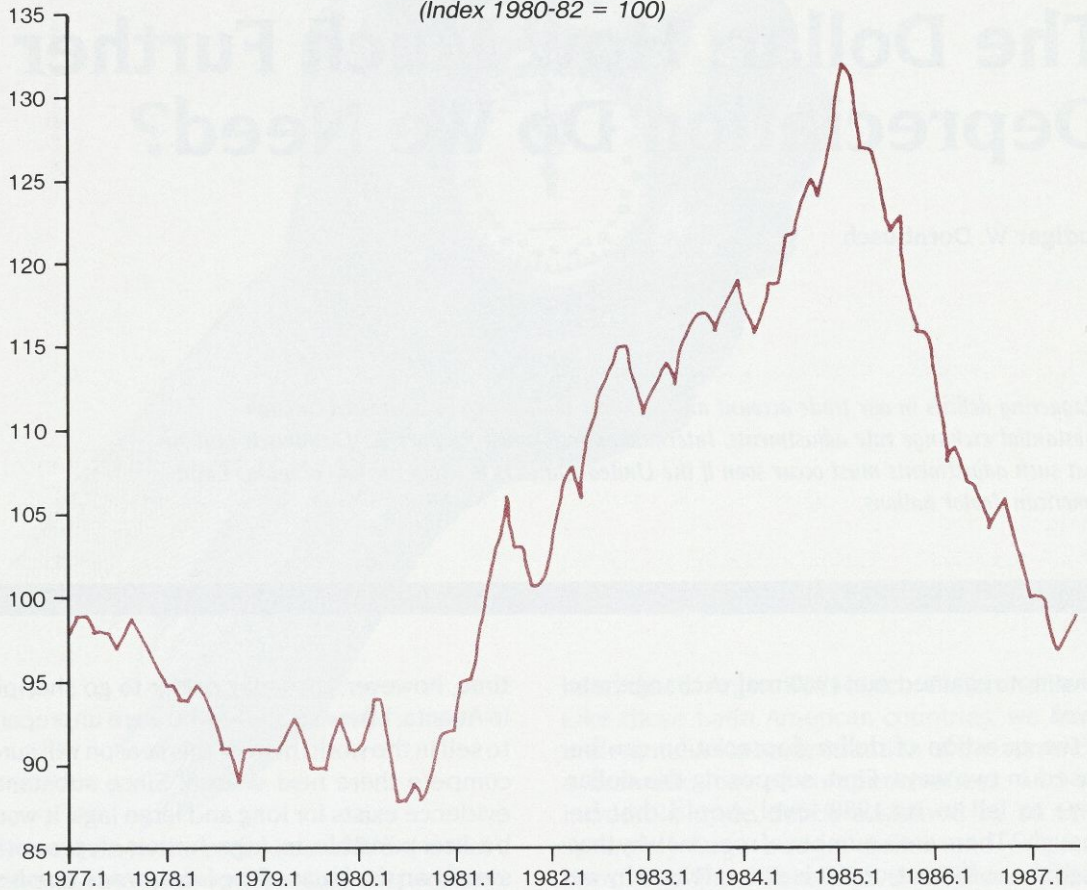
Source: Morgan Guaranty Trust, *World Financial Markets*.

There is a more cynical position. It holds that while the dollar is quite clearly and totally overvalued, we should permit this situation to continue because the rest of the world is eagerly buying U.S. Treasury bills. Essentially, global creditors are making unwise loans, just as when they lent to Mexico, Argentina, Bolivia, and Brazil. When the United States has borrowed enough, we will say, "Big mistake! You borrowed in dollars, and here comes the major inflation." We will wipe out those debts, and, in the end, all the debt service that is now piling up and aggravating the current account deficit will never in fact materialize. Thus, the only difference between our nation and Argentina will be that Argentina could not get rid of its dollar-denominated debts, but we can. We have the printing press.

Is that a persuasive argument? I doubt that U.S. policymakers, much less U.S. politicians, are willing to accept a big inflation in order to wipe out a domestic or external debt. There is some weight to the argument, though, for we surely will see real interest rates approaching closer to zero, even flirting with the negative. Decreased rates would solve some of the problems entailed in our increasing domestic public debt, but I do not envision a massive liquidation of our debt. Hence, I believe that the trade problem and the exchange rate problem demand more serious scrutiny.

Among the arguments reviewed, the only really respectable one is that which points to important lags in the adjustment of trade flows. We should therefore find out in a more sys-

Table 1.
U.S. Trade with Developing Countries
(Billion $)

	All Goods				Manufactures		
	Imports	Exports	Balance		Imports	Exports	Balance
1980	122.6	79.6	-43.0		29.5	55.6	26.1
1981	121.3	87.4	-33.9		35.1	61.5	26.4
1982	103.7	80.7	-23.0		37.0	55.5	18.5
1983	107.4	71.0	-54.7		45.9	45.7	-0.2
1984	125.9	72.7	-53.2		61.8	47.5	-14.3
1985	122.2	69.7	-52.5		65.5	46.0	-19.5
1986	124.8	68.3	-56.5		77.3	49.4	-27.9

Source: GATT and U.S. Department of Commerce.

tematic way what is likely to happen over the next year or two as the result of currency alignments that have already occurred over the preceding years. Some good news will be forthcoming, albeit hesitatingly. Even if one challenged the significance of the lags or knew exactly what they were, the same hopeful conclusion would be reached. In either case we may ask the same question: If the 1980 exchange rate prevailed today, would it still be accompanied by balanced trade?

The answer is no, for at least six reasons. The first and most obvious is the debt crisis. In 1980, any self-respecting Latin American country had a grossly overvalued exchange rate, a recklessly large budget deficit, an enormous trade deficit, and unbelievable capital flight. The United States was on the other side, as the beneficiary, exporting to Latin America on a massive scale. Today, however, the situation is exactly the reverse. Every Latin American country has had a 50 percent real depreciation of its currency, budgets have been trimmed, and Latin American nations all run trade surpluses, primarily with respect to the United States. Thus, the big difference between 1980 and 1987 is that countries which formerly were buying our goods now are exporting to us. Since that difference is largely unrelated to the value of the dollar in world currency markets, it has to be corrected by either a change in the currency or changes in policies here and abroad.

How much of our trade deficit can be attributed to the Latin debt crisis? The total effect is hard to identify exactly, because for several reasons the United States would have increasing imports from Latin America anyway. Even so, if you advanced a number like $25 billion deterioration on our trade balance, that certainly would not be far off the mark. Of course, that figure is only a small fraction of our $150 billion deficit. All the same, it constitutes the first substantial difference between 1980 and 1987.

The second difference between those two years comes from the same neighborhood. Over the past decade, newly industrializing countries (NICs) have been investing at significant rates in their export sectors. Perhaps the most striking example is Korea, which annually invests 33 percent of its output. Most of the investment is in manufacturing, and much of that is in the export sector. Over time these investments inevitably come on line and start producing goods that go one way—to the United States. For example, ten years ago we sold capital goods to Korea, and as late as 1980 we sold them equipment. Today, these capital goods are producing Hyundai cars sold in America.

Our nation has experienced a complete reversal in our trade with newly industrializing countries in two respects. As a result of their development, NICs are becoming net exporters, rather than net importers, of the kind of goods the United States produces; and during the period of dollar overvaluation, NICs have shifted to Japan for buying their machines and to the United States for selling what those machines produce. Within that triangle, this country has been the decided loser since 1980. Year after

year, these newly industrializing countries are increasingly becoming net exporters, meaning that we see a trend deterioration in the U.S. external balance. Over a four- or five-year period, we can estimate those effects at 1 percent of our gross domestic product (GDP). Over a seven-year period, the effect is clearly sizable. In respect to newly industrializing countries, today we are no longer where we were in 1980; seven years of bad news have intervened. Just to fasten on one number to characterize our dramatic loss of competitive advantage, since the start of the eighties a $50 billion shift has occurred in our manufacturing balance vis-a-vis developing countries (see Table 1)—from a surplus of $25 billion to a deficit of $25 billion.

For the third difference, let us go to factors more specific to industrialized countries. The United States has had large real appreciations of its currency and then several real depreciations. Although some imagine that all is well once the level is back down, that simply is not true. During the period of overvaluation foreign firms have established themselves in the U.S. market, incurring the considerable fixed costs of establishing distribution networks and brand names. Now, with the dollar down, those firms are competing well and are very willing to trim their profit margins to stay in business. On the other hand, many U.S. firms that struggled from 1981 through 1983 to preserve their share in foreign markets finally withdrew in 1984-85 to cut their losses. Thus, when the dollar went back down, the old trade pattern could not automatically reestablish itself. As a result, today more foreign firms are selling in the United States while American firms abroad are selling much less. A further, much larger real depreciation would be required before U.S. firms could profitably resume their foreign operations. Likewise, only a substantial real depreciation of the dollar could exterminate foreign firms that have established themselves here. We are far from making it so badly unprofitable that they fold up and run; in fact, we are not even quite back to the 1980 exchange rate level.

The fourth difference distinguishing 1980 from 1987 is disparities in growth performance between Europe and Japan on one side and the United States on the other. Since 1980, when our nation had balanced trade, U.S. expenditure growth has exceeded that in Europe and Japan

by a cumulative 12 percentage points. Consequently, the level to which our imports have grown is much higher than the corresponding level for our exports, not even taking into account exchange rate movement. This growth gap is reflected in our large trade deficit. To bridge that growth gap, either the rest of the world must start growing very rapidly relative to this country or the dollar must make the adjustment. Because the 12 percentage point growth gap is so immense and because trade flows are highly responsive to expenditure growth, a large part of our deficit even today embodies that cumulative differential in growth rate.

External debt accounts for the fifth major difference between 1980 and the present. The United States is experiencing something very Latin American: we run large current account deficits and borrow abroad, thereby building up interest obligations. In 1980 this nation was a net creditor in global capital markets, able to finance trade deficits with the receipt of earnings from our investments abroad. Today we are about to become the biggest net debtor in the world. Our net external assets, which are something between $250 billion and $400 billion in deficit, are deteriorating rapidly, as we have the interest plus the current account deficit, now at $150 billion, to add to it each year (see Table 2). Anyone looking ahead to 1995 can easily foresee an external debt of a trillion dollars.

Whereas in 1980 a trade balance or small deficit was acceptable, in the future the United States will need a trade surplus to service our ever-accumulating debt. This surplus has to come either from changes in policy or from a different exchange rate. Faced with overwhelming net external debts and mushrooming interest obligations, Latin American nations greatly depreciated their currencies and tightened their belts over the last four years. These measures have produced trade surpluses with which those countries can earn dollars to service their debts. Since the United States appears to be following the pattern set by Latin American nations in the latter part of the seventies—borrowing to finance deficits—we, too, will eventually have to generate a trade surplus so that we can service the inevitable debt that lies ahead.

Finally, the sixth argument against the return and sufficiency of balanced trade with a 1980 exchange rate concentrates on what is likely to

Table 2.
The U.S. External Balance and Net Investment Position
(Billion $ except as noted)

	1982	1983	1984	1985	1986
International Investment Position	136.2	88.5	4.4	-107.4	-238.0
Current Account					
Total	-9.2	-45.6	-112.5	-124.4	-147.7
Non-Interest	-28.1	-37.0	-131.3	-149.6	-170.6
(Percent of GNP)	-0.9	-1.1	-3.5	-3.7	-4.1
Budget Deficit (Percent of GNP)	-4.1	-5.6	-4.9	-5.1	-4.6

Source: U.S. Department of Commerce, Federal Reserve System, and International Monetary Fund.

happen in the U.S. macroeconomy over the next ten years. At some point, our domestic budget deficit will be corrected, for it is too large to continue at the current rate. The budget deficit builds up debt service at home, which ultimately must be addressed. Expenditure cuts cannot go far toward balancing the budget, and so most of the remedy will have to derive from tax increases. Although these tax hikes must await a politically convenient time, they will surely come.

With tax increases, the consumer's disposable income will shrink, resulting in lower consumer spending and reduced demand for U.S.-produced goods and services. Thus, the United States will experience a recession. The Federal Reserve inevitably will ease monetary conditions in order to stimulate a recovery, or at least to alleviate the recession, and consequently the dollar will go down.

Because U.S. deficits are so large—3 percent of GNP— the commensurate budget correction will deal a forceful blow to the macroeconomy. Essentially, the correction will entail shifting our employment abroad: people who before worked for the U.S. consumer now will start to work for exports or to replace imports. This shift will mean a very sizable transfer of resources from the home economy to the export sector and to import competition. At constant relative prices, however, that straightforward reshaping of the labor force will not occur. It simply is not true that cutting the budget will by itself improve the trade balance without any adverse impact on employment. Our service sector, which has expanded significantly in the last seven years,

no doubt will be the first victim of such a downward correction, since demand for U.S.-produced goods and services in the home economy will diminish.

Every one of the six reasons I have set forth to explain how 1980 differs from 1987 implies that the current level of the exchange rate no longer will do. This is so either because we are looking ahead to budget corrections that will create unemployment and the need for some alternative use of American resources, forcing us to become more competitive to sell abroad; or because we will eventually require a trade surplus in order to service our external debt; or because our customers have disappeared as a result of the debt crisis; or because the United States has been so good at transferring technology abroad that today everybody else makes better and cheaper what we used to make; or because the long overvaluation of our currency made our customers go elsewhere, not to return without an extra incentive.

All these reasons make a good case for why the 1980 value of the dollar is insufficient. Indeed, these factors account for about $100 billion of our current $150 billion trade deficit. If further proof is required, we need only consider U.S. net exports, which is exports minus imports, as a fraction of GDP (see Chart 2). From 1980 to 1986, net exports fell from a surplus to a deficit of 2.5 percent of GDP. For a "No Further Change" scenario, which takes the current level of the dollar and assumes that over the next five years Europe, Japan, and the United States continue to grow at the same rate, we can estimate an equation to predict what will happen to net

exports. What that equation reveals is that we will see a significant improvement in our external balance, meaning that those who emphasize lags in adjustment are quite right. The next two years will deliver the further improvements in net exports that are now in the pipeline.

While that is true, we are nonetheless left with a $100 billion deficit from the original $150 billion. Moreover, while we are sleeping, the Koreans are busily at work, expanding their export sector and discovering new opportunities. Thus, over time U.S. net exports will actually be deteriorating as we import more and more from southeast Asia, northern Mexico, and Brazil. That deterioration is shown by the gradual downturn following the initial improvement in the "No Further Change" scenario. The conclusion from econometric estimates not only from these but from any U.S. econometric model is that, with growth rates of spending the same here and abroad and with no further change in the dollar, trade will improve somewhat. By 1990, however, the deficit will still reach $100 billion, a level that, forever rising, is too high to sustain. Therefore, saying the dollar will not have to move is almost certainly wrong.

I say "almost certainly" because one other important possibility remains. In talking earlier about the growth gap, I noted that in the last seven years U.S. growth in spending has far exceeded that in Europe and in Japan. The "Higher Growth Abroad" scenario reverses that situation. Suppose that Europe and Japan dramatically increase their spending rates by 2.5 percentage points over and above those in the United States for a three-year period. That spurt would be enough to wipe out our deficit, thus making the point that much of the U.S. deficit today is a consequence of our running ahead of the rest of the world and not of the dollar. Obviously, though, we do not believe that Europe and Japan are actually about to engage in that kind of growth. They have a hard time keeping pace at today's rates; in fact, our problems are getting worse because we are always growing faster than Europe and sometimes even Japan. So for now the "Higher Growth Abroad" scenario is at best wishful thinking. This elusive dream is perpetuated by summit meetings among the G-5 countries, but it will not emerge from promise to reality until more than moral suasion is applied by the United States.

If the growth gap reversal will not occur, then the dollar must be the adjustment for our deficit. According to the model used here, it will take about a further 30 percent U.S. *real* currency depreciation to bring us within comfortable reach of external balance. (We certainly do not need a balanced current account.) Now, the 30 percent figure comes as a rude shock to some people, as the dollar has already plunged 50 percent and the yen has moved from 250 to 140. Do I really mean that the yen has to go to 100? I firmly believe that it does.

Let us first look at the costs and benefits to our nation of such a dollar depreciation and then consider its impact on the rest of the world. On the cost side, inflation is the issue; on the benefits side, the sooner we correct our budget and our external balance, the lower the ultimate cost to our standard of living.

Currently, depreciation is inevitably linked to the inflation rate because currency realignment is the means by which we are trying to correct our external balance. A weaker dollar raises import prices, causing people to shift away from imports and toward domestically produced goods. In terms of foreign currency, depreciation strengthens our competitive position and thus leads to greater exports because U.S. firms have better opportunities for selling abroad. At home, however, prices will tend to rise. We see that most obviously in primary commodities: if the dollar goes down, agricultural prices are likely to go up, as will wood and pulp, oil, gold, and a host of other items.

Depreciation's inflationary impact may be dramatic, as it was in 1978-80 when the dollar decline was accompanied by a sharp increase in commodities and in oil, or it may be very moderate. In large part, the impact depends on how wages respond to the depreciation. If the increased cost of living ushered in by higher import prices spills over into stepped-up wage demands, the result will be greater costs for firms. Inevitably, these increases will generate price hikes, which in turn will exert upward pressure on wages, thus taking us far up in inflation. Conversely, if wages hardly respond because we are a relatively closed economy—even 10 percent depreciation of the exchange rate barely changes the cost of living—then depreciation offers a very effective way of cutting our wage in terms of buying power in deutsche marks or yen

Chart 2.
U.S. Net Exports
(Percent of GDP)

Percent

ACTUAL   FORECAST

Higher Growth
Abroad
No Further
Change

1983   1984   1985   1986   1987   1988   1989   1990   1991   1992
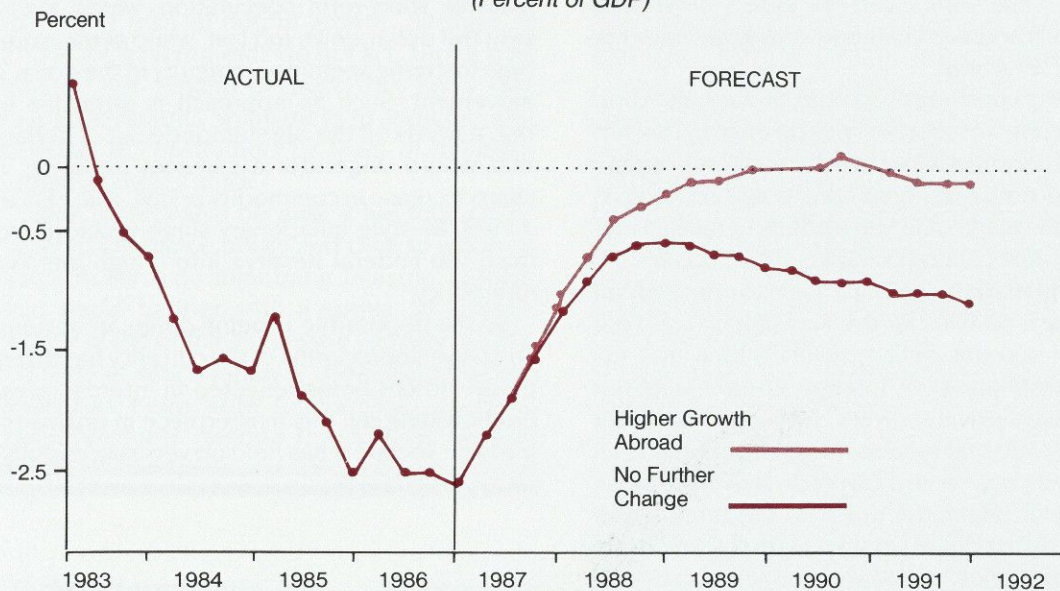
Source: Rudiger Dornbusch, "External Balance Correction: Depreciation or Protection?" *Brookings Papers on Economic Activity,* 1 (1987), p. 258.

without at the same time setting off inflation here. When Mexico depreciates, the inflation impact is violent; when the United States depreciates, the inflation impact has so far been extremely moderate. For example, our 50 percent depreciation over the last two years has produced an effect that is best embodied by the disparity between inflation rates in consumer and producer prices. The former are hovering somewhere about 4 percent, while the latter are below 3 percent; the difference is the impact of oil price increases and the exchange depreciation.

A very important difference exists between early, dramatic depreciation of the dollar and lengthy postponement. For every year of extra budget deficit, someone will have to pay the taxes to service the domestic debt, or else someone will suffer the inflation that wiped the debt out. As for our external debt, the situation is much the same and in an obvious way. A country that overborrows ultimately must have a massive real depreciation in order to produce the staggering trade surpluses required to pay the built-up interest. That is the scenario being played out in Mexico today. The United States is

in for exactly the same fate if we allow an over-valued dollar to stay with us too long.

A look at the costs and benefits clearly shows that early, large real depreciation is desirable— and the faster and bigger, the better. A rapid, sizable depreciation will encourage any U.S. firm that considers going into exporting to do so much earlier, just as it will more decisively drive out any foreign firm that is trying to hang in the U.S. market. Adjusting the dollar's value over a couple of years cannot have the same forceful effect.

These issues of timing are important, for we know that major Japanese corporations today are budgeting the yen at 100 to the dollar and are finding it profitable. Thus, they have in fact already adjusted significantly, a process that might have been impossible if the dollar had fallen even faster.

When urging a faster dip in our currency, we must consider inflation once again. Taking the dollar down more gradually may create less of an inflation atmosphere in commodity markets, and hence may slow its inroads on wages. If we had a precipitous decline in the dollar and an

upsurge in commodity prices and gold, the Federal Reserve might feel obliged to temper the inflation with a steep increase in interest rates. If the dollar can be eased downward gradually and avert inflation, one might have the best of all worlds.

Having concluded that the dollar must drop 30 percent, we must next puzzle out why that has not yet occurred. Why have the markets not gone short on dollar-denominated assets and long on deutsche mark—and yen—bonds to take advantage of this coming collapse of the dollar? For the explanation, we must look to the Federal Reserve's policies. In the first half of 1987, our current account deficit of $75 billion was exclusively financed by foreign central banks, not by foreign private savers. Although the latter had already begun to stay away from what is an obviously overvalued currency, they have been shy about taking the dollar to the brink. Every other day the dollar goes up a little bit and every other day it notches down, producing an overall trend that has been down 50 percent for the last two years.

We can view market participants' hesitating withdrawal from the dollar in two ways. In hindsight, the depreciation in the U.S. dollar looks extraordinary. With the dollar's quiet descent, foreign investors experienced some brutal capital loss. Had investors anticipated this drop, they certainly would not have held dollars without the inducement of astronomical interest rates. Nonetheless, even faced with the likelihood that the dollar will fall by 30 percent, they are now letting their central banks finance our current account deficit for the next five years. Furthermore, foreign investors are holding onto rather than selling their dollars. U.S. financial institutions, for example, are subject to regulatory constraints, in particular the need to report their losses to the Securities and Exchange Commission every three months. Although they may feel certain that over two years the dollar will be down significantly, their horizon is much shorter. Investors really cannot afford to speculate in the current atmosphere of uncertainty, for they know that every time it gets "warm," the Federal Reserve might let the dollar appreciate, and investors will suffer terrible losses. Then, when those investors get out, the Fed permits the dollar to drop, belatedly proving that the foreign firms were right.

I believe that the Fed's management of the exchange rate over 1987 has exactly followed this pattern. Its policy has been to discourage massive short-term speculation, which would take the dollar down too fast, while at the same time fostering seeming ambiguity in the dollar's movement. Such an approach is attractive in that it wards off the big stampede out of dollars that would engender a currency collapse, a sharp increase in commodity prices, and, hence, a 1978/80-style inflationary surge which would force the Federal Reserve into a high interest rate policy.

So the impossible is being done: an obvious and large depreciation of the currency has taken place without being reflected in interest rates. But how long can this masterpiece in engineering last? To date it has held up very successfully,

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"Having concluded that the dollar must drop 30 percent, we must next puzzle out why ... the markets [have] not gone short on dollar-denominated assets ... to take advantage of this coming collapse of the dollar."

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since rates have risen minimally even as the dollar keeps going down. Looking ahead, there will be days when the dollar goes up, even a lot, and that is exactly what burns the little fingers and keeps the speculators away. That tactic is what keeps the affair manageable—as well as the fact that central banks have already put up $90 billion to defend the dollar this year. Over the next two years, however, the dollar cannot continue to ratchet downward day by day, as the course would become too obvious.

Having looked at the costs and benefits to the United States of a 30 percent dollar depreciation, let us briefly assess what will happen in Europe and Japan. Europe has been stagnating economically for the last seven years. Its average growth rate of capital income for the period is -0.8, which is a terrible performance compared with that of the United States. Europe fears that

there are extremely tight limits on the extent of possible expansion, and that any attempt by governments to expand their economies through easier money would very rapidly result in inflation rather than in output growth. Because of this belief, governments do not act, and in turn firms do not expand because they know that their governments' willingness to stimulate the economy is constrained by fears of inflation. Europe is clearly stuck.

Japan is stuck also because it has found it far easier to announce policy and then to ignore it than actually to do something. Imagine, though, what would happen with a further 30 percent decline of the dollar, taking the yen beyond the 100 level at which Japan is comfortable today. Japan has been able to maintain its cost-competitiveness despite the dollar's slide in

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"If the alternative[s are] . . . to keep the overvalued dollar at the current level or to have a dramatic fall, I much prefer the latter. The dollar is overvalued and hence one day must drop."

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part by skipping wage bonuses, hence reducing unit costs, and in part by shifting its sourcing to Korea, Taiwan, and Singapore, thereby dramatically reducing the cost of intermediate imports. As there is very little Japan can do in terms of *further* cost reductions, another round of dollar depreciation actually would scratch the nerve as well as the cavity, compelling Japan to form a policy response.

The same is true of Europe, where Germany has stood in the way of more expansionary monetary policies. With further dollar depreciation, the European Monetary System (EMS) might break up. With a 30 percent dollar push, Italy would likely decide to stay with the dollar, which would in turn make the deutsche mark appreciate relative to European currency. In terms of Germany's trade, that development would be extremely costly, as Germany trades

primarily with Western Europe. So there, too, we would be touching a nerve.

Notwithstanding the pain, I believe that dollar depreciation is the best way to get improved policy performance out of Japan and Germany. When the dollar falls, Germany and Japan have only one means to stop its decline—dramatically lowering their interest rates and expanding their budgets. These measures will not be taken until the push comes. As we have already seen in the first round of depreciation, support from our trade partners has tended to disappear. For the United States, it all adds up to a very large deficit while our partners enjoy a comfortable surplus.

I conclude, then, that the dollar must go down and that the Federal Reserve's accomplishment of lowering the dollar gradually and firmly by 50 percent over two years is wonderful. Another 30 percent in a year-and-a-half would be utterly satisfactory. If the Fed can achieve this slowly, kudos to them. If the alternative, though, is to keep the overvalued dollar at the current level or to have a dramatic fall, I much prefer the latter. The dollar *is* overvalued and hence one day must drop. If it is locked in at its present rate, we shall have to pay for a much larger and steeper plunge some time later.

Let me talk about a closely related issue before I conclude my remarks on dollar depreciation. It would be a serious mistake to abandon flexible exchange rates in favor of target zones within which rates are fixed. According to this plan, the government would tighten monetary policy whenever the currency depreciates and relax it whenever it appreciates. Thus, monetary policy would be oriented toward the exchange rate. Our experience with a fixed exchange rate came to a halt in the 1960s when the United States' expansionary monetary policy conflicted with Germany's preference for low inflation and positive real interest rates. Since then, the world has not changed one bit. If we attempted to return to a fixed exchange rate, we would have to decide whether our 4 percent or Germany's 1 percent rate is the right inflation rate. Obviously, it would be only a question of time before we were once more at loggerheads and the deutsche mark started to rise. By adopting target zones we would lose the freedom to sustain a strong expansion, as we have done over the last five years in the U.S. economy. The

Table 3.
Foreign Direct Investment Flows to the United States
(Billion $)

	1981	1982	1983	1984	1985	1986*
Total	23.2	10.8	8.1	15.2	23.1	31.5
Classified by Industry						
Manufacturing	8.1	2.4	3.1	3.1	12.1	13.7
Retail and Wholesale Trade	0.9	1.1	0.3	2.0	2.0	5.8
Banking, Insurance, and Finance	2.2	1.7	0.7	1.9	1.7	3.3
Real Estate	3.7	3.3	2.7	2.2	1.9	4.0
Classified by Country						
Japan	0.6	0.6	0.4	1.8	1.2	4.7
Europe	10.6	6.4	4.9	6.5	15.4	17.1
Canada	6.1	1.2	1.1	2.6	2.9	5.2
Middle East	3.4	0.9	0.7	0.9	1.0	0.5

* *Preliminary data.*

Source: U.S. Department of Commerce.

growth that flexible rates have accommodated has been accompanied by relative price stability. All we must be careful to do is clean up the cost of that expansion before we actually have to pay a far heavier toll.

The second issue is foreign direct investment, which has been pouring into the United States at very noticeable rates (see Table 3). Those who are alarmed about this influx have fears such as that for every Japanese car producer that opens in this country a U.S. producer is closing down. Studies show that a domestic firm produces 12,000 more jobs than does the Japanese firm. This disparity is attributable partly to the Japanese firm's greater efficiency, but mostly to the fact that the Japanese firm buys a majority of its parts and supplies from Japan or Korea rather than from U.S. suppliers.

So here we seem to have an intriguing point. If foreign firms do not create as much employment as the displaced U.S. firms, on balance the latter may seem preferable. However, that thinking would be fallacious, because we have to take a comparative stance. When we consider a situation where our borders are closed to keep out everybody, no doubt U.S. firms produce more jobs. But if the alternative is that the Japanese producer exports a whole car to the United States, of course the firm's having been located here creates *some* domestic value added. Foreign direct investment also brings other

advantages to the host country, such as superior management skills, advanced technology, and growing capital—all of which Mexico, for example, welcomes with U.S. investment in that country. In that respect, therefore, I think that foreign direct investment in the United States should be openly and happily embraced.

For the time being, foreign direct investment in the United States is negligible. Foreign firms located here employ less than 1 percent of the labor force; their real estate holdings are less than what we have in military air fields; and they account for less than 3 percent of total U.S. productive efforts. In fact, foreign direct investment in this country is only a very small fraction of foreign bank deposits in the United States. We are likely to see a lot more foreign investment over the next year because of spreading trade restrictions. The United States would do well actively to encourage such investment, for it enables us to share in cheap foreign labor without running the risk of protectionism.

Let me summarize what I have tried to say. In the last five years the United States has experienced very strong growth. Unemployment has dropped to the level of the late 1960s, and inflation had earlier subsided to almost nothing. Even today, we can hardly feel that inflation has edged back up around 4 percent. The party is not over—in fact, we could stay until daylight—but it is wise to bring it to a halt. Fed Chairman

William McChesney Martin used to say that the Federal Reserve is like the matron who removes the punch bowl just as the party gets going. This year and the next probably are the time to make major adjustments so as to lock in our extraordinary five-year expansion and look toward restoring manufacturing to a firm position in the U.S. economy. The effective way to make the correction is via a massive depreciation of the dollar, which would make our costs more realistic by world standards. Among the major macroeconomic issues involved in that adjustment, the most significant is the impact that the resultant inflation would have on monetary policy and interest rates. Notwithstanding these concerns, the adjustment must be made, and budget correction is the way to avoid inflation and crowding out.

The United States' current plight is infinitely far away from that of Mexico, Argentina, and Brazil. Not only can these countries no longer borrow, but they also must undergo dramatic and costly adjustments to compensate for their past overborrowing. We can avoid that dire situation, in part because the U.S. economy is much more closed and hence exchange rate adjustment offers a powerful means for getting better trade flows without cutting the standard of living. We can only rely on this approach, though, if we devalue the dollar soon enough and with great care. If we allow the dollar to remain overvalued, perhaps because of some misperception about purchasing power parity, then in the end the United States will be more nearly like Mexico.

Observations about
Observations about
Liquidity Effects:
The Difficulties of Exploring
a Simple Idea

The relationship between changes in the money supply and interest rates is one of the most basic and yet problematic areas of mainstream monetary thought. While standard macroeconomic theory suggests a number of reasons why changes in the quantity of money should be

inversely related to changes in interest rates, empirical support for this so-called liquidity effect is, at best, mixed. In fact, the relationship implied by the liquidity effect is often refuted in empirical work.

The point of this article is to examine some empirical issues surrounding the liquidity effect and to discuss several recent findings that may elucidate the relationship of money and interest rates. Along the way, it should become apparent

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Thomas J. Cunningham

Investigation of the "liquidity effect," which postulates that an increase in the money supply leads to lower interest rates, is confounded by several econometric problems. The author concludes that, for the liquidity effect, answers arrived at through econometric analysis may bear more closely on questions that the typical researcher leaves unasked.

that the answer to a relatively simple empirical question can depend very heavily upon choices the investigator makes—for example, the selection of time period—that may seem to have little bearing on the question asked.[1]

Defining the Liquidity Effect

The liquidity effect is a specific mechanism that, when at work, will produce an inverse relationship between a change in the money supply and a change in interest rates. That is, if the money supply goes up and interest rates go down, this movement may be the liquidity effect at work.

A quick, simple appreciation of this effect can be had by considering the rate of interest as the "rental rate" of money. If economic agents (businesses, households, and so on) wish to hold their wealth in the most liquid form possible—money—they will be "paying" a premium for that liquidity by forgoing the interest they could have earned on alternative, less liquid forms of wealth.[2]

Stated in simple supply-and-demand terms, the liquidity effect argument is that as the quantity of money increases, its "price," defined as the rate of interest, falls. Some economists pursue this argument at one remove. Following the work of Knut Wicksell, they use a supply and demand for loanable funds framework. Thus, an increase in money augments the supply of funds, and their price, or the rate of interest, falls. Other economists, in keeping with the work of John Maynard Keynes and James Tobin, assert a "liquidity preference" on the part of agents in the economy. According to this view, agents prefer to hold wealth in a relatively liquid form, and so must be compensated if they are to give up their liquid assets. As a result, when money becomes more plentiful, the compensation for not holding this most liquid of all assets should fall. While the emphasis in each of these cases is somewhat different, the story they tell is essentially the same: changes in the supply of money should be inversely correlated with changes in interest rates.

The Gibson Paradox and the Fisher Effect

The first challenge to the liquidity effect came from the writing of A.H. Gibson, who observed that the liquidity effect just did not work.[3] Quite

the contrary: there seemed to be a tight positive correlation between money supply growth rates and interest rates, such that when the money supply grew very rapidly, interest rates rose. For his direct contradiction of the liquidity effect, Gibson was given a place of immortality in the economics literature by John Maynard Keynes. The fact that interest rates frequently went up with an increase in the growth rate of the money supply became known as the Gibson paradox.

The Gibson paradox was resolved when Irving Fisher suggested that what Gibson observed was related to another consequence of a rising money supply: expected inflation. If the increase in the money supply signaled higher future rates of inflation, Fisher argued, then lenders would want to protect their *real* rate of return by demanding that interest rates be adjusted for the expected inflation. Thus, nominal (observed) interest rates should be the sum of the real rate of return plus the anticipated rate of inflation.[4] The upward force that inflation expectations exert on nominal interest became known as the Fisher effect.[5] Though it offered an explanation of the Gibson paradox, the Fisher effect, too, has received less than complete empirical support.

An important point is that the Fisher effect does not necessarily preclude a liquidity effect. It is possible—and consistent with empirical work on the Fisher effect—that while anticipated inflation is priced into nominal interest rates, these rates may nonetheless be lower than they would have been had a liquidity effect not been at work. Similarly, other factors, most notably changes in income and in risk, may mask liquidity effects. All of these complications are discussed below.

Liquidity Effect Empirics

Rational Expectations Theory. The advent of rational expectations theory in 1960 and some of its early implications renewed empirical interest in the effect of money on the economy.[6] Within a rational expectations framework, agents are viewed as incorporating all available information in some model of the economy (frequently assumed to be correct) in order to form their economic forecasts and expectations.

Thomas Sargent and Neil Wallace, in particular, can be singled out for the "policy ineffectiveness" results their rational expectations models produced.[7] The policy ineffectiveness literature postulates that agents form their expectations of the general price level by using, among other pieces of information, announcements of monetary policy and money growth. By correctly anticipating *general* changes in the price level, agents can distinguish *relative* changes in prices. This foresight also enables agents to adjust interest rates such that real rates of interest remain unchanged. Thus, since monetary policy may influence the general price level but holds no sway over relative prices or real interest rates, agents will not be fooled into changing their behavior in response to purely nominal policy changes. Monetary policy there-

"Once some rate of inflation becomes fully anticipated . . . agents can see beyond general movements in the level of prices to the relative changes and can adjust real rates of interest accordingly."

fore becomes an ineffective tool for influencing economic activity.

Few economists dispute the argument that fully anticipated monetary policy has little long-run effect on real economic activity. For example, the Phillips curve, which formerly purported to embody a relationship between inflation and output/employment, now is modified to show a tradeoff only between the *unexpected* portion of inflation and output. Once some rate of inflation becomes fully anticipated, it no longer results in the output gains it did when the inflation came as a surprise. Agents can see beyond general movements in the level of prices to the relative changes and can adjust real rates of interest accordingly. Thus, in a rational expectations world, where shifts in the inflation rate can be correctly foreseen, a policy of higher or lower inflation has no real impact on the economy.

If expected inflation wields minimal influence on economic activity, then some sort of liquidity effect offers the remaining channel by which monetary policy can *systematically* influence economic performance. This conclusion gives reason to the empirical hunt for a liquidity effect within a rational expectations paradigm.

Problems with Rational Expectations Theory. Two related problems with rational expectations are worth discussing here, the first of which is conceptual: people do not, prima facie, behave in the way assumed by the rational expectations literature. That is, they apparently lack full and near-perfect models of the macroeconomy and thus cannot methodically use new information to update their forecasts. While cogent, this argument against a rational expectations approach is nonetheless a qualified one.

"If expected inflation wields minimal influence on economic activity, then some sort of liquidity effect offers the remaining channel by which monetary policy can systematically influence economic performance."

It is reasonable to believe that agents have a fair understanding of their "local" economy, meaning markets close to them both geographically and temporally. More important, they clearly heed new information that they feel is key to understanding changes in these markets. For example, shrimp fishermen along the Gulf Coast may comprehend the impact of water temperature changes on the price of shrimp more fully than do bond traders in New York City. Likewise, bond traders may better appreciate how the latest money supply numbers affect bond prices. In either case, news germane to some market will be understood by the participants in that market. For all practical purposes, therefore, the expectations-formation criteria of the rational expectations theory may be viewed as a reasonable description of reality.

The second problem is a practical matter of econometrics, that is, applying statistical techniques to test economic theory. Whereas agents may sufficiently understand markets that impinge upon their daily lives and may thus form expectations that produce an economy that behaves in a manner consistent with the rational expectations paradigm, there is quite a large step from this observation to a tractable econometric model that actually describes how this process works. As a consequence, while rational expectations may be a reasonable theoretical construct, its accompanying econometrics may be far from simple. As a result, the empirical investigation into possible liquidity effects is beset by econometric problems. Because the way in which these are addressed tends to shape the investigation's results, three of these problems are specifically discussed here: simultaneity, difficulties related to the econometric implementation of rational expectations models, and temporal aggregation.

Simultaneity. The present inquiry looks at the effect on interest rates of adding further liquidity/money to the economy. To achieve this end, econometricians must try to isolate the effect of changes in the money supply from all other economic occurrences that may impinge upon interest rates. The process of controlling for the effect of other variables, which is common to all econometric work, is well understood. In this case, the control process requires gathering data pertaining to variables possibly relevant to changes in interest rates, and it is within these data on possible explanatory factors that the first problem for discussion lies.

The money supply is continuously changing, as are interest rates and other variables. Interest rates are determined in financial markets, which lend themselves to essentially continuous observations. The quantity of money in the economy is more difficult to observe, although on a weekly basis the Federal Reserve announces narrow measures of monetary aggregates.

The problem of simultaneity arises from the fact that for equilibrium to exist in the money market, the quantity of money supplied must always equal the quantity of money demanded. However, money demand is, itself, a function of the relevant rate of interest, which, in terms of this inquiry, represents the "price" of forgoing

liquidity. At least theoretically, money demand is understood to be primarily a function of interest rates, as well as of the level of income. As interest rates move upward, less liquid forms of holding wealth become more attractive, decreasing the quantity of money demanded. Thus, the two, money and interest rates, are determined *simultaneously*.

In the simple case of exploring money demand, simultaneity is usually not a problem, for the quantity of money supplied is generally taken to be controlled by the Fed, independently of interest rates. When liquidity effects are the subject of investigation, however, simultaneity becomes an important empirical question.

Theoretically, the most appealing means of controlling for changes in the level of income is to rely on gross national product (GNP) figures. These data are gathered only on a quarterly basis, as are those for a number of other useful economic data series; for example, the three-month Treasury bill rate is an attractive and obvious candidate as the relevant interest rate for this inquiry. As a consequence of data availability constraints, quarterly changes in money and interest rates are frequently employed in the search for a liquidity effect. Use of quarterly data, though, may involve simultaneity between money and interest rates. Simultaneity would bias our results, thereby masking the effect we wish to observe.

Consider the following example. Suppose that an increase in the money supply works its effect out on interest rates within, say, one month. (In macroeconometric work, simultaneous is not to be confused with instantaneous.) Suppose further that an upward blip in the money supply is accompanied by a strong liquidity effect, leading to an unambiguous decline in interest rates within our assumed time lag of one month. This decline, in turn, influences money demand and thus money market equilibrium. An econometrician seeking a liquidity effect by using quarterly data on levels of money and interest rates may miss the result. Both interest rates and the money supply adjust to one another in a way that would appear simultaneous, at least over the quarter, thus clouding the initial liquidity effect.[8]

In this case, the easiest way possibly to circumvent simultaneity is to employ data gathered frequently enough to render a true picture of the adjustment process. This solution, however, poses two new problems.

First, unfortunately, such data simply do not exist. Many data series, particularly those dealing with non-financial macroeconomic performance, are gathered on a monthly and, quite often, a quarterly basis. GNP is the major case in point. Coping with data-frequency problems forces econometricians to use proxy variables for the needed information. Sometimes the proxies work well, and sometimes they do not.

A second difficulty with shortening the time interval to address simultaneity is "noise" in the series. Generally, the macroeconomy is regarded as being quite stable, but this perceived stability is the result of looking at something quite large move over a fairly long period of time. Within a short enough time frame, nu-

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"Discovering a liquidity effect at work in a world of rational expectations would imply that systematic influence over the economy is not beyond the scope of monetary policy."

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merous short-lived disturbances occur. For example, weekly unemployment claims can be substantially influenced by severe weather. Certainly, no one thinks that the underlying level of unemployment is jolted by such an explicitly temporary event as a snowstorm, but on a weekly basis the data may be quite volatile. Even though the volatility may be nothing more than noise, this noise will nonetheless tend to mask the underlying signal in the series. The investigatory process will suffer as a result.

Implementing Rational Expectations. Discovering a liquidity effect at work in a world of rational expectations would imply that systematic influence over the economy is not beyond the scope of monetary policy. Thus, although implementing a rational expectations model is fraught with obstacles, the potential results are well worth pursuing. The major conceptual and

practical difficulty with the econometric implementation of rational expectations models is actually specifying the expectations held by the economy. In the parlance of the economics profession, "rational" expectations are based on the appropriate and full use of all relevant information in some sort of model, presumed and hoped to be the economist's own. Not surprisingly, measures of such expectations are hard to come by. The two measurement alternatives are survey results and model-generated forecasts.

A major drawback inheres in relying on a survey of what agents in the economy actually expect to happen and then using those findings as the expectations variable in a rational expectations econometric model. The drawback is that very few surveys have been conducted con-

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"The major . . . difficulty with the econometric implementation of rational expectations models is actually specifying the expectations held by the economy. . . . [M]easures of such expectations are hard to come by."

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tinually and for a long enough time period to provide a large amount of information at a fairly frequent time interval. The extant surveys tend to ask very general questions at a fairly low frequency. Those surveys that convey a great deal of information about what the surveyed parties expect are expensive undertakings, which probably explains the short lifespan of such potentially useful surveys.

The alternative to employing survey data is to build a model that generates expectations in the form of forecasts. Provided with forecasts of whatever variable is of interest at a time interval convenient to the question, econometric practitioners then simply assume that economic agents do in fact hold these model-generated expectations. Such an approach may be loosely consistent with the concept of rational expectations, yet it is hard to believe that everyone in

the economy generates expectations in exactly the same fashion or that deviations from the average expectation do not matter. (Indeed, the stock market functions precisely because some traders hold diametrically opposite opinions about the future course of a stock's price.) It further taxes trust to accept that the econometrician has happened upon the single equation that accurately represents the way the economy forms its expectations. The procedure of gauging expectations via model-generated forecasts is, in a very literal sense, incredible.

Making use of forecasts derived from a model does, however, offer two distinct advantages. First, the expectations variables can be generated from available data at whatever time interval is appropriate, thus providing a convenient source of data. Second, expectations variables can be produced for almost any variable.

In summary, model-based expectations may be substituted for survey data for a series of good, though largely practical, reasons. With the survey-data approach, one must be willing to ask only those questions that can be answered by the available survey information. If you are interested in problems that involve variables for which no survey data exist, you have little alternative but to use model-based forecasts. Simple forecasts derived from models may not necessarily differ much from expectations that would be expressed through surveys. The opinions gathered in surveys are those of market participants; therefore, using market results to infer participants' expectations, as the model-based approach does, may not render dissimilar results.

Temporal Aggregation. The final problem to be addressed here is that of temporal aggregation, which is simply a matter of characterizing the data through time. Rates of change can be calculated by using differences between either end-of-period data or average-of-period data. In principle, at least, one would suppose that the choice should not matter, particularly if the econometrician looks at a long enough period of time. Seemingly, whatever discrepancies there are between end-of-period and average-of-period data ultimately should wash themselves out. Such, however, is not the case.

In the empirical hunt for the liquidity effect, temporal aggregation matters substantially, though the differences in the results may be

clouded by problems of simultaneity. Research employing quarterly average-of-period data both for interest rates and for money tends to find significant though small liquidity effects. By contrast, work using semiannual average-of-period interest rates but end-of-period money often reveals no liquidity effect. Finally, when quarterly end-of-period money and interest rates are employed, just the opposite of a liquidity effect frequently emerges: unanticipated changes in money and interest rates are positively associated with one another.[9]

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Addressing the Problems

In a recent working paper, whose results are summarized below, my coauthor and I sought out liquidity effects, quite mindful of the many associated problems that have been discussed here.[10] Our method was to estimate a series of equations reduced from a rational expectations, money supply/money demand framework.[11] To deal with problems of simultaneity, we used various unit time intervals, starting with thirteen weeks (that is, one quarter, to correspond to most of the literature in the area) and then shortened the interval to six and finally three weeks. To investigate temporal aggregation issues, we estimated our equations using end-of-period and average-of-period data for comparison. Finally, we relied on model-based expectations, as survey data are not available for these different unit time intervals.

In each estimation equation, we looked at the association between unanticipated changes in interest rates, as measured by deviations in interest rates from those rates previously implied by the yield curve, and the following independent variables: unexpected changes in money (that is, the liquidity effect), unexpected changes in prices (the Fisher effect), unexpected changes in income (an income effect), and a measure of risk involved in the investment (a risk premium).

In the case of money, we tried three different definitions, the first of which is the adjusted monetary base as reported by the Federal Reserve Bank of St. Louis. Results from this definition are not discussed further because they do not differ meaningfully from results produced by the other two definitions employed: M1 as reported in its finally revised, "true" form

and M1 as first announced. The difference between these latter two definitions is significant, particularly in a rational expectations world. It may be that the "true" M1 numbers are what is ultimately responsible for any relationship between money and other economic variables. Nevertheless, every Thursday afternoon the Federal Reserve announces an estimate of weekly M1, and financial market participants react to that preliminary figure. The final revision to the M1 series may occur quite some time in the future. Thus, it may be more appropriate to use the information to which the markets are reacting, rather than some number that actually proves to be "correct" but in an untimely fashion. The choice of announced M1 is especially suitable in this case, where reaction to numbers that are larger or smaller than anticipated is an

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elemental feature of the model.

In modeling price expectations, we looked to changes in the Bureau of Labor Statistics' 22-Commodity Spot Price Index as a proxy for changes in the price level. Of all our proxies, this is probably the weakest, for movements in commodity prices reflect far more than simply movements in the general level of prices. Were a better proxy available at a weekly frequency, we would have used it. As a proxy for income, we used unemployment claims, since national income and unemployment claims may be thought of largely as the inverse of one another.

Finally, we needed a measure of risk, as bondholders must be compensated for the relative degree of risk associated with holding their particular asset. The proxy in this instance was a moving variance of their return over the previous 26 weeks.

Results. To sum: we did not actually find any direct evidence of a liquidity effect, but we think we have a reason.

In varying our time interval to deal with simultaneity, we discovered our most interesting results with respect to liquidity effects. There was a significant positive relationship between unexpected changes in money and interest rates in the case of the thirteen-week unit interval, and similar, somewhat stronger results in the six-week case. Further shortening the unit interval to three weeks, however, substantially weakened the result in a statistical sense. This loss of significance may be attributable to an "expected liquidity effect," an argument which holds that an unexpectedly large present increase in the money supply is likely to lead to smaller future increases, and consequently to

"[T]here obviously exists between money and interest rates some relationship that changes with the unit time interval. What that relationship fundamentally is, however, remains unclear."

higher interest rates, as the Federal Reserve tries to regain its target level for money growth.[12] Market participants' expectations of slower money growth and higher interest rates in the future usher in higher interest rates now. Thus, the expected liquidity effect directly collides with the standard liquidity effect, creating an ambiguous result. Clearly, the issues of the appropriate unit time interval and associated simultaneity problems are of consequence in grappling with problems of money and interest rates.

Interpretation of our other results is far more straightforward. We found a statistically significant, but economically small, income effect, signifying that money demand does seem to respond in a theoretically "correct" way to changes in income. Indeed, our income variable was the most consistent statistically significant

variable found in the course of our work. On the other hand, we discovered no evidence of interest rates' responding to inflation news (a Fisher effect), but that may be owing to the inadequacy of our proxy for the general price level. Our research also revealed the existence of a significant time-varying risk premium, consistent with theoretical expectations.

Our data set ran from 1974 for M1 and from 1972 for the monetary base measures through mid-1984. When we broke the sample up into the period before and after the October 1979 change in Federal Reserve operating procedures, we found substantial evidence of parameter instability in our equations. That is, the parameters associated with the variables we were testing changed, as anticipated, but the fundamental relationships did not. This finding is consistent both with theoretical expectations and with other empirical work in this area, and thus tends to strengthen confidence in our model.

Finally, our research showed that temporal aggregation, which seemingly is a peripheral concern to investigation of the liquidity effect, actually matters quite a lot. Use of the averaged data consistently improved the regression fit, and the coefficients estimated were much more frequently significant than when end-of-period data were used. The fact that averaged data attenuates noise in the series may account for this difference. But while the size of the coefficient changed, its sign never did.

Conclusion

Rational expectations econometrics is still quite young. The problems facing econometricians working in this area, some of which have been described, are sizable, and their solutions are frequently elusive. Temporal aggregation and choice of the unit time interval, for example, can significantly affect the outcome of hypothesis tests, but the "correct" approach is not evident.

In the relatively straightforward and elemental case examined here, there obviously exists between money and interest rates some relationship that changes with the unit time interval. What that relationship fundamentally is, however, remains unclear. One explanation that has

been advanced here, the expected liquidity effect, is consistent both with the existence of a liquidity effect and with results showing no sign of the negative relationship the liquidity effect hypothesizes.

Regardless of the outcome of the tests presented vis-a-vis the liquidity effect, the issues that have been addressed are clearly of empiri-cal significance. Answers to questions asked of the data seem to depend heavily upon choices the econometrician makes that are not patently related to the questions. In other words, one must be careful in interpreting econometric work, for the answers derived may have more to do with the questions not asked than with those that are.

NOTES

[1] This discussion is based on Thomas J. Cunningham and Gikas A. Hardouvelis, "Temporal Aggregation, Monetary Policy, and Interest Rates," Federal Reserve Bank of Atlanta Working Paper 87-04 (May 1987).

[2] Within this arrangement, interest-bearing checking accounts present a problem, for an agent can hold wealth in this very liquid form and still earn interest on it. Nevertheless, an agent holding wealth in a less liquid form than interest-bearing checking accounts will generally receive a higher rate of return. Thus, holding everything else constant, some inverse relationship exists between the liquidity of an asset and its return, and so the essence of the argument, though somewhat muted, is preserved.

[3] J.M. Keynes popularized Gibson's work, citing, in particular, articles written by him for Bankers Magazine in January 1925 and November 1926.

[4] The cross product of the two rates should also be added in. This latter is quite small and usually ignored.

[5] There are yet other explanations for this result, most notably the "Mundell-Tobin effect," where an increase in the rate of inflation decreases the real rate of interest. Nominal rates do rise, but there is incomplete adjustment compared with the Fisher scenario.

[6] For a discussion of both the rational expectations idea and some of its more interesting implications, see Rodney Maddock and Michael Carter, "A Child's Guide to Rational Expectations," Journal of Economic Literature, 20 (March 1982), pp. 39-51. They also stress that rational expectations is a tool and not a paradigm.

[7] Thomas Sargent and Neil Wallace, "Rational Expectations, the Optimal Monetary Instrument, and the Optimal Money Supply Rule," Journal of Political Economy, 83 (April 1975), pp. 241-54.

[8] The problem here is not wholly intractable, though it does require more information than simple average-of-period data.

[9] For example, see John Makin, "Real Interest, Money Surprises, Anticipated Inflation, and Fiscal Deficits," The Review of Economics and Statistics, 65 (September 1983), pp. 374-84; James Wilcox, "Why Real Rates Were So Low in the 1970's," American Economic Review, 73 (March 1983), pp. 44-53; and Frederic Mishkin, "Monetary Policy and Short-Term Interest Rates: An Efficient Markets-Rational Expectations Approach," Journal of Finance, 35 (March 1982), pp. 63-72.

[10] Thomas J. Cunningham and Gikas A. Hardouvelis, "Temporal Aggregation, Monetary Policy, and Interest Rates."

[11] See ibid. for details of the estimation procedure.

[12] Gikas A. Hardouvelis, "Market Perceptions of Federal Reserve Policy and the Weekly Monetary Announcements," Journal of Monetary Economics, 14 (September 1984), pp. 225-40.

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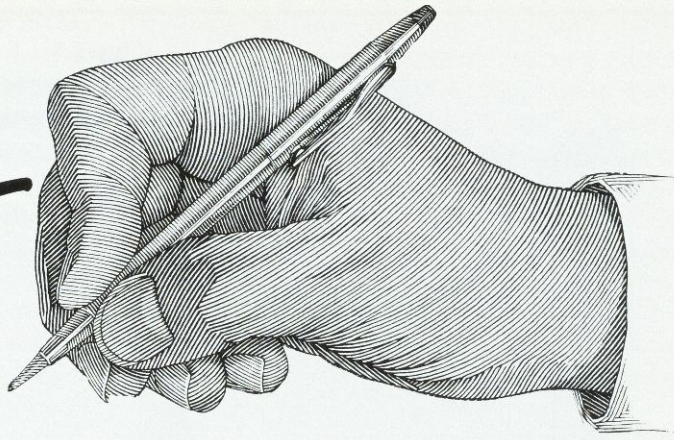
Going Off the Balance Sheet

Sylvester Johnson and Amelia A. Murphy

Banks' off-balance sheet activities have emerged as a significant issue in recent years. Concurrently, competitive pressures on commercial banks have intensified dramatically, as nonbanking firms and foreign financial institutions alike have encroached on traditional U.S. banking markets. While both banks and their competitors may offer loans, which are entered as assets on their balance sheets, U.S. banks face more formal and higher requirements to back up those loans with capital. Thus, in their search for ways to expand earnings without tying up capital in asset creation, this nation's banks have increasingly turned to a broad array of off-balance sheet undertakings.

Some observers view this development warily, believing that growing off-balance sheet activities pose a threat to the overall banking system. For that reason this article, whose purpose is to describe today's various off-balance sheet transactions, will also attempt to catalogue their inherent risks. First, however, the competitive forces that have driven banks to go off the balance sheet will be considered more fully.

Business Climate

Business cycles have a pronounced effect on banking, as they do on many other sectors of the economy. Economic conditions that favor business—low inflation, low interest rates, and rising aggregate demand—are, in general, good for banks, while adverse business conditions affect banks negatively. Chart I shows how the return on assets (ROA) for all commercial banks varies over the business cycle. For example, during the recessionary periods of 1980-82, ROA for all banks declined, after having risen during the preceding expansionary period of the late seventies.

Steadily decreasing credit quality has dealt a blow to bank profitability in this decade. Despite a five-year-old economic expansion, many sectors of the U.S. economy, notably energy, agriculture, and real estate, continue to experience depressed or negative conditions. The persistent difficulties in these industries have resulted in loan quality problems that have eroded bank profitability.

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Chart 1.
Return on Assets for
All U.S. Commercial Banks, 1960-85

Return
on Assets

Gray areas indicate recessions.

0.96	
0.94	
0.92	
0.90	
0.88	
0.86	
0.84	
0.82	
0.80	
0.78	
0.76	
0.74	
0.72	
0.70	
0.68	
0.66	

1960   1965   1970   1975   1980   1985
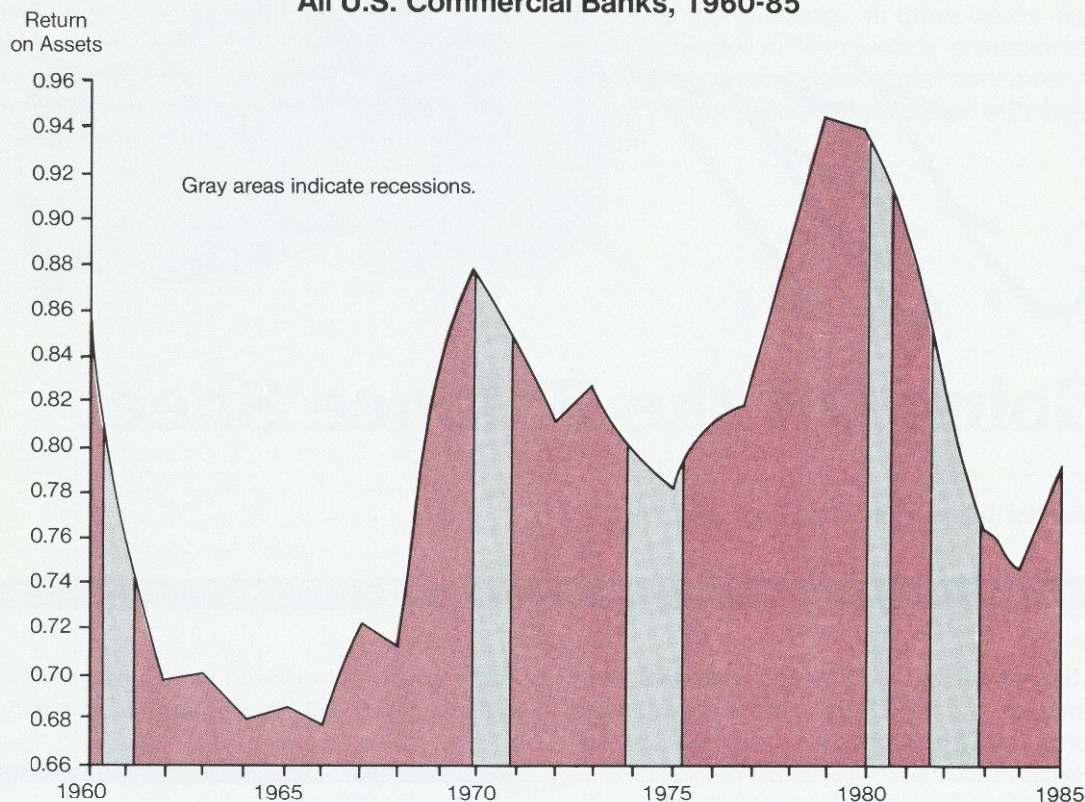
Source: "Consolidated Reports of Income for Insured Commercial Banks," Board of Governors of the Federal Reserve System.

Beyond conditions in the general economy, a number of industry and regulatory trends have squeezed bank profits. First and foremost is the move by large commercial customers, who once represented a sizable portion of prime banking business, into the commercial paper market in the seventies. The loss of these highly rated borrowers has not only cut the volume of bank lending but in some cases may also have reduced the quality of loan portfolios, as banks replaced better quality credits with loans to less stable borrowers. A second industry trend assailing profitability is the rise of U.S. nonbank firms and foreign financial firms offering traditional banking services. Since these competitors can engage in lending as well as deposit-taking, commercial banks often must offer more favorable rates, which can leave them with extremely narrow interest rate spreads after adjusting for required

reserves, Federal Deposit Insurance Corporation (FDIC) premiums, and capital requirements, none of which is uniformly mandated of their competitors.

The more structured and stringent capital requirements imposed on banks have significantly altered the incentives for off-balance sheet activities, for such requirements act as a tax on new assets.[1] The level of capital required relates to the volume of a bank's assets, and so most banks can expand assets only if they also raise additional capital. Moreover, the current movement toward risk-based capital requirements will demand even higher levels of capital to offset riskier asset portfolios. Again, the incentive to engage in off-balance sheet activities will be fortified.

Together, capital strains and lower profitability on traditional lines of business have

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encouraged banks to seek new ways of maintaining or boosting their ROA. In an effort to bolster return on equity (ROE), as well as ROA, banks and nonbank financial firms have explored methods of moving profitable assets off their balance sheets, thereby avoiding capital requirements while at the same time earning fee income from guaranteeing, originating, and servicing loans. Especially for money-center institutions, an increasing share of total profits is being generated by non-lending-related activities, such as loan servicing and credit enhancement.[2] In fact, the ten largest banking organizations in the United States earned 33 percent of reported 1985 net income from non-interest sources.[3]

Off-Balance Sheet Activities

Off-balance sheet activities are contingent claims or contracts which usually generate fee income for the bank. A contingent claim legally binds a financial institution to lend or provide funds should the contingency be realized. This potential obligation does not affect a bank's balance sheet, however, until the contingency is realized and the loan actually made.

In today's rapidly changing financial services environment, the types of off-balance sheet transactions undertaken by commercial banks are continually expanding. For the most part, such transactions are used to provide backup credit to customers, change interest rate risk (that is, to modify exposure to an adverse turn in interest rates), or alter exposure to currency exchange rate movements. Whereas off-balance sheet activities may effectively mitigate such risks, at the same time they introduce balance sheet or portfolio risk: if activated, the contingent claim creates an asset that must be funded. The following sections detail a number of the more common off-balance sheet activities and their associated risks. In addition to loan commitments, standby letters of credit, interest rate swaps, foreign currency swaps, and futures and forward contracts, the emerging securitization phenomenon, another off-balance sheet undertaking, will be discussed.

Loan Commitments. Loan commitments are legally binding agreements to lend a borrower a specified amount, usually at a stipulated rate, for a specific purpose. In effect, the bank agrees to accept a credit exposure at some future date. The borrower uses the commitment to ensure that funds will be forthcoming for working capital or to finance large projects should other forms of borrowing become unavailable. The commitment may be viewed as an insurance contract wherein a borrower purchases protection against certain risks while the bank, in the role of insurer, takes upon itself the risk associated with making the loan should the potential borrower so request.

In a note issuance facility (NIF), which is one popular form of a medium-term loan commitment, the bank advances funds only if direct funding cannot be obtained. For some period of time, generally three to seven years, the bank agrees to purchase the short-term commercial paper of a borrower or to provide credit if the borrower cannot place his notes at an interest cost below the rate at which the bank would provide financing. (Commercial paper is an unsecured obligation used by business and financial firms to raise short-term funds in the open market.) Under such an arrangement, the borrower not only is assured of the funding that might be needed to complete a project, but he also gains flexibility as business conditions change. By underwriting an NIF, the bank generates fee income and maintains a client relationship without actually extending funds.

Irrevocable commitments, such as lines of credit and NIFs, expose a bank to credit risk similar to that of commercial lending (that is, the counterparty may default on the loan), but the ultimate exposure depends on the likelihood and extent to which the commitment is drawn upon. For those commitments that are only partly drawn against, a bank's credit risk exposure is usually lower than its risk on a corresponding amount of commercial loans. However, under some forms of commitment, especially an NIF, the bank is likely to shoulder a credit risk that has been priced out of the market. Furthermore, an institution's liquidity may be strained should several large loan commitments be activated at one time.

Notwithstanding their potential risks, in their various forms loan commitments have been basic to banking for many years. Although they account for over a quarter of off-balance sheet commit-

ments, recent growth in this area has been quite modest relative to other contingent liabilities.[4]

Standby Letters of Credit. A standby letter of credit (SLC) is a contractual agreement issued by a bank in a customer's behalf. Unlike a loan commitment, which involves only the bank and its customer, an SLC entails the bank's commitment to a third party. If the bank customer cannot meet the terms and conditions of its contractual agreement with the third party, the issuing bank is obligated to do so as stipulated by the terms of the SLC. Because the commitment is relied on chiefly for credit enhancement or as an emergency source of funds, it is essentially a loan of a bank's credit rating rather than of its funds. In return for providing the letter, a bank receives a fee, as well as interest income should credit actually be extended.

Traditionally, SLCs have been used as backup lines of credit to support commercial paper offerings, municipal borrowings, and construction lending. Newer applications, such as the use of SLCs for mergers and acquisitions, are emerging. To some extent, direct-finance markets have fostered the growth in SLCs (see Table I). As third-party investors increasingly assume credit risk, they may require SLCs so as to lessen third-party exposure. At the same time, the bank's customer can secure more favorable interest rates when the credit standing of the issuing bank guarantees its performance. The issuing of standby letters of credit is a reasonable extension of commercial banks' lending relationships and of their expertise in assessing and diversifying credit risk. At relatively small expense, banks can obtain from current loan and deposit customers any additional information necessary for preparing an SLC.

Along with the advantages a bank can derive from heavy SLC activity, it also can expose itself to potentially significant increases in credit, liquidity, and capital risks. Credit risk inheres in the borrower's possible default or poor performance. Commercial banks attempt to protect themselves from such risk by estimating the likelihood of default (generally on the basis of historical loss rates on similar loans), by holding reserves to cover this risk, and by securing collateral interests from the borrower. Although historical loss ratios on SLCs are lower than those on a typical commercial loan portfolio, the fact that the majority of SLC contracts lack formal

collateral arrangements may point to a greater credit risk. Further, the probability is higher that an SLC will be called on for funds when the markets for credit desert the borrower.

Since SLCs are not funded, risks to liquidity and capital also are important factors for their issuers. Losses could mount quickly, threatening the bank's capital base, should several SLC borrowers default at the same time.[5] In addition, as with loan commitments, liquidity problems could result if several large SLCs were activated at once.

Furthermore, it should be noted that SLC activity may concentrate risk in the banking system. Assuming that a bank is not the direct investor, the system bears no risk when a bank customer borrows from a third party. With an SLC, however, at least part of the risk is transferred to the bank from the direct investor, as the SLC commits the bank to support the borrower. While this move reduces the risk of default to the direct investor, the SLC compels the issuing bank to adopt possible credit exposure. Large holdings of contingent claims like loan commitments and SLCs present the most serious funding risk. A bank with significant off-balance sheet risk of this kind could deteriorate rapidly and unexpectedly, since the draw-down rate on these instruments is unpredictable. In addition, borrowers usually activate standby letters of credit and loan commitments only when adverse economic conditions prevent them from meeting their obligations otherwise. At such a time, the market is likely to be similarly less receptive to the banks' needs for funds. Moreover, if negative events force a large number of borrowers to have recourse to their SLCs, the banking system as a whole may suffer. At a minimum, such a development would generate liquidity problems; at worst, it would lead to bank failures that could be transmitted system-wide. Fortunately, the probability of such systemic failure is extremely small.

Lastly, SLCs and loan commitments present an ill-defined legal risk to the bank. Few agreements related to off-balance sheet services have been challenged in court. Of particular concern is the fact that the legality of "material adverse change" clauses have not been court-tested. Technically, these clauses allow the bank to withdraw its commitment to lend in the face of material declines in the financial posi-

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Table 1.
Loan Commitments Off and On the Balance Sheet
for U.S. Commercial Banks
(Thousand $)

Off the Balance Sheet

Year's End	United States		15 Largest U.S. Banks		Banks in Southeastern States[1]	
	Standby Letters of Credit	Loan Commitments	Standby Letters of Credit	Loan Commitments	Standby Letters of Credit	Loan Commitments
1980	48,562,371		35,987,717		1,489,441	
1981	75,864,400		55,559,101		2,288,978	
1982	108,347,768		77,635,339		3,126,859	
1983	128,791,927	429,407,071	91,814,150	252,729,198	4,054,038	28,869,131
1984	159,845,636	493,244,304	111,663,855	270,988,057	4,691,523	35,642,194
1985	192,409,107	540,224,683	129,516,655	287,512,654	6,432,064	44,646,800
1986	187,284,588	568,130,305	123,690,957	303,682,893	8,237,655	48,959,862

On the Balance Sheet

Year's End	Total Gross Loans	Total Assets	Total Gross Loans	Total Assets	Total Gross Loans	Total Assets
1980	834,110,282	1,526,694,387	214,384,275	380,606,806	93,136,788	177,545,861
1981	925,784,533	1,675,798,040	251,066,165	412,955,716	101,563,219	195,739,869
1982	1,025,350,133	1,861,082,217	288,335,353	471,097,861	111,702,764	221,284,401
1983	1,122,374,657	2,018,831,238	299,894,491	480,221,026	127,168,028	249,148,772
1984	1,271,079,713	2,150,259,611	283,773,309	472,134,306	163,087,593	277,377,129
1985	1,398,498,824	2,361,073,881	293,614,984	501,457,046	189,705,307	316,472,026
1986	1,536,447,101	2,571,073,783	331,483,502	533,954,759	217,206,454	361,940,167

[1]*Southeastern states are defined as Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.*

Source: "Consolidated Reports of Income for Insured Commercial Banks, 1980-86," Board of Governors of the Federal Reserve System.

tion of the borrower. Until such contracts have been approved by the legal system, however, the duties, responsibilities, and liabilities of all parties will remain somewhat cloudy.

Futures, Forward Rate Agreements, and Standby Contracts. Futures contracts are commitments for delayed delivery of securities or money market instruments. According to these arrangements, the buyer agrees to purchase and the seller agrees to deliver at some future date a specific instrument at a mutually acceptable price or yield. These futures contracts on interest rates are standardized and traded on organized exchanges. Their market consists of two major players, hedgers and speculators. A hedger attempts to transfer risk in order to protect the value of his capital from adverse changes in interest rates. A speculator, on the other hand, accepts risk as he attempts to exploit any profit opportunities available in the market. As a counterbalance, a hedger will usually assume a position that is approximately equal in size and on the opposite side of the market to a related cash position. For example, he may be long the cash instrument (that is, he holds the cash instrument), and short the futures contract, by which he commits to sell the cash instrument at some specified future date at a price determined in the futures market in order to protect the value of the cash instrument that he now holds.

In a forward rate agreement, which is closely analogous to a financial interest rate futures contract, two parties agree on the interest rate to be paid on a nominal deposit of a specified maturity at a particular future date. Settled in

cash, the contracts are arranged over the counter and their terms are not standardized; generally they may be considered over-the-counter financial futures. While the individually negotiated forward contracts can be simpler and more flexible than futures, they are stricter in that they can be terminated before expiration only if both parties agree.

Standby contracts are optional forward arrangements in which the buyer purchases the right, but not the obligation, either to buy some financial instrument from or to sell the same to the contract seller at an agreed-upon price. On the other hand, the seller of the contract is obligated to sell or purchase the stipulated instrument under the same terms. The purchase (a "put" option) or sale (a "call" option) is tied to a future date requested by the buyer. One can view an optional forward contract as an insurance policy; the buyer is the insurance purchaser, while the seller is the policy writer.

Since forward and futures contracts represent a commitment to buy or sell a specific instrument in the future, the holder is exposed to all changes in the market value of the underlying instrument. The only way to terminate a forward or futures contract before maturity is to close it out or to hedge, that is, to take a position exactly opposite the original position. For the institution hedging a cash position, the loss/profit is offset to some degree by the profit/loss on the cash instrument that is being hedged. Especially for futures and forward contracts, the hedge design is critical to offsetting market risk.

Financial institutions usually occupy the role of hedgers in futures and forward contracts, attempting to cover the interest rate exposure of their portfolios without altering their liquidity profiles. In order to guarantee a successful hedge, they exploit the strong correlation between changes in the futures instrument chosen for the hedge and changes in the cash instrument. Considering the market risks accepted and the sizable potential for loss, the job of managing, hedging, and pricing futures and forward contracts demands significant expertise.

The counterparty risk associated with a forward contract derives from the fact that such contracts are not traded on the organized market but rather are two-party contracts. If the party to the agreement fails, an institution is at risk to the extent that it expects to receive a pay-

ment from the counterparty. One procedure for limiting this exposure is to require advance payment of an initial margin, usually set at 5 percent of the forward contract's value.

Unlike forward contracts, futures contracts carry a liquidity risk, or potential cash strain. An "open" position is marked to market daily, which means that its value fluctuates and gains or losses must be settled each day. If a large futures position is maintained, an adverse move in futures prices could pose liquidity problems when a contract holder tries to meet the required margin call.

Risk distribution is asymmetrical in a standby contract, for, according to what happens to the market price, the buyer may reap unlimited gain yet lose no more than the premium paid for the agreement. As an example, suppose an investor

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"Considering the market risks accepted and the sizable potential for loss, the job of managing, hedging, and pricing futures and forward contracts demands significant expertise."

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pays $1,000 for a call option to purchase U.S. Treasury bonds at an agreed purchase price (or "strike" price) of 75. If the current market price of the bonds fall below 75 (say, to 70), the investor will simply choose not to exercise his option. On the other hand, if the market price rises above 75, the investor will likely pursue his ability to buy the bonds below the going market price. Conversely, the seller of the option stands to gain only the $1,000 premium paid by the buyer of the option contract. His potential loss, however, is boundless: no matter how high the market price may rise, he is obligated to sell the bonds at 75. This situation creates counterparty risk for the buyer of the option, who, throughout the life of the contract, must shoulder the risk that the seller will fail to meet his obligation. The seller, on the other hand, runs no credit risk since the contract purchaser has no obligation to perform.

Money-center and regional banks alike commonly use forward and futures contracts in connection with their foreign exchange transactions. A bank customer with a future need for foreign exchange offsets the risk of an unfavorable exchange rate movement by entering into a forward contract with the bank. For a fee, the bank essentially adopts the customer's risk, but at the same time covers its own position via the futures market. Banks are thus active in both the forward and futures markets, which function in a complementary way. As mentioned above, both types of contracts specify deferred purchases or sales of foreign exchange at a price determined today. Futures are standardized in terms of delivery date and denomination and are traded on an exchange where a clearinghouse stands between buyer and seller. These features make

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"Futures are standardized in terms of delivery date and denomination and are traded on an exchange.... [F]orward commitments are highly illiquid and thus are held to maturity."

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futures contracts highly liquid. Forward contracts, on the other hand, are tailor-made arrangements between the bank offering the contract and its customers, who seek flexibility in terms of contract maturity and denomination. Unlike futures contracts, forward commitments are highly illiquid and thus are held to maturity.

Banks employ futures to hedge their net commitments in foreign exchange. At any time, a financial institution will have offsetting long and short (that is, buying and selling) commitments in forward contracts arranged with their customers. The bank's net long or short forward exposure can be hedged by taking an opposite position in the foreign exchange futures market. Generally, however, this hedge will not be perfect for a couple of reasons. First, the expiration dates for the futures contracts—which fall in only four months of the year—will not exactly coincide with those for the outstanding forward contracts. Thus, even if the net forward position is matched exactly by an offsetting futures position, the value of these positions will not be perfectly negatively correlated over time. The bank can only attempt to minimize the discrepancies.

A second reason that a bank cannot achieve a perfect counterbalance to its forward exposure is that the net forward position will vary over time as the bank creates new forward contracts and closes out old ones. The changes to the net forward position will not be perfectly predictable, and adjustments to the hedging futures position will not be perfectly offsetting. Altering the futures position frequently runs up transactions costs and, in any case, the fixed denomination of the futures will also result in some small net long or short exposures.

Aside from the virtual impossibility of achieving a perfect futures hedge, an additional risk arises because of the interim cash flows that a futures contract generates. While no money changes hands until a forward contract expires, a futures contract is marked to market, as was noted above. If a bank, for example, has a short futures position in Japanese yen and that currency is appreciating, the bank must meet variation margin calls, as it is losing money on its futures position. Although the bank would be profiting on its net long forward position in yen, it cannot realize that gain until the forward contracts expire. Therefore, such variation margin calls may strain a bank's liquidity in crisis situations, when reserves are demanded for other contingencies.

Whereas the principal amount of futures contracts held by banks may be quite large, the actual amount of risk exposure is fairly small. In a counterparty default, for instance, the potential loss is merely the cost of replacing the contract at current rates. Furthermore, daily payment of variation margin calls serves to reduce the replacement cost of the contract to a small fraction of its notional amount. This type of risk exposure is so minute that it has been excluded from consideration in the risk-based capital measures proposed jointly by the Board of Governors of the Federal Reserve System and the Bank of England. Spot foreign exchange contracts are excluded for the same reason.

Swaps. Generally, a swap is a financial transaction in which two parties agree to exchange

streams of payments over an agreed, and potentially unlimited, period of time, and these payment streams may extend over any time period.[6] It may be considered a special case of a forward agreement, which can provide a one-time, long-term hedge. The two main types of swaps are currency and interest rate swaps.

With an interest rate swap, no principal is transferred either initially or at maturity. Instead, interest payment streams of differing character are exchanged according to predetermined rules. A notional principal amount serves only for reference in calculating the amount of interest payment. By means of an interest rate swap, two parties can exchange debt service payments.

Of the three main types of interest rate swap, the first is the coupon or "plain vanilla" swap.[7] One party to the agreement provides fixed interest rate payments in return for variable rate payments from the other party; the amount of indebtedness, the maturity, and the payment date are the same for both. The second type of swap, the basic swap, involves the exchange of floating rate services based on different indices, for example, prime and LIBOR (London Interbank Offer Rate).

The third type of interest rate swap, a "circus" swap, is linked to a currency swap. A currency swap is a transaction in which two parties exchange specific amounts of two different currencies at the outset. They repay the resulting debt according to a predetermined schedule that reflects both interest payments and amortization of principal. Usually, fixed rates of interest are employed in each currency. For example, a borrower may wish to obtain deutsche marks to finance a venture in West Germany, but may not be able to secure funds readily or at an acceptable cost in Germany's capital markets. Simultaneously, this borrower may have easy access to U.S. capital markets and be able to borrow there on relatively attractive terms. If a counterparty who has a net asset position in deutsche marks and a desire for low-cost dollar funds can be identified, the opportunity for a currency swap exists. The combined interest rate and currency swap—a "circus" swap—calls for fixed rate service in one currency to be exchanged for floating rate service in another.

Interest rate swap volume rose to $57.4 billion in the first quarter of 1987, up from $39.9 billion during the corresponding quarter of 1986 and $49.5 billion in the fourth quarter of that year.[8] A survey also showed that 2,428 contracts with an average face value of $23.6 million were executed in the first quarter of 1987.[9]

The increase in the variety of end users on both sides of the swap market and a corresponding rise in credit risk has engendered some concern about purely brokered swaps. Because banks have a large customer base and expertise in assuming long-term market and credit risks, they can readily occupy the role of intermediary by entering into two offsetting swaps.[10] Generally, though, their swap arrangements are intended to hedge other balance sheet and off-balance sheet interest rate or currency exposures. For banks, the main risk of engaging in currency and interest rate swap

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"Securitization . . . allows hitherto relatively illiquid loans to be transformed into risk-diversified, high-return vehicles for intermediating funds."

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activities is posed by the possibility of a counterparty's default. Should the counterparty fail to meet his obligation, the bank can be left with a large, unbalanced exposure. With an interest rate swap, only the stream of payments is at risk; however, with a currency swap, the principal amount also may be jeopardized.

Securitization. A further advance in generating fee income and keeping assets off the balance sheet is securitization. Like other off-balance sheet activities, however, securitization may establish contingent claims on banks.

Securitization is the sale of securities representing an income flow backed by packaged assets. It allows hitherto relatively illiquid loans to be transformed into risk-diversified, high-return vehicles for intermediating funds. One method of securitization is to pool similar assets and subsequently issue securities backed

by that pool. To date, securities backed by mortgages, car loans, computer leases, credit card receivables, service center receivables, and truck leases have been issued.

Commercial bank securitization activity has so far been limited, but a pattern of operation is discernible. Most such cases involve four primary parties: the loan originator, the loan purchaser (an affiliated trust), the loan packager (underwriter of the securities), and a guarantor. These securitizations operate in much the same way as mortgage-backed securities issuance, except that in the majority of the latter the Government National Mortgage Association ("Ginnie Mae") or Federal Home Loan Mortgage Corporation ("Freddie Mac") acts as the purchaser and packager, with the U.S. government or a private corporation acting as guarantor.

"[S]ecuritization is not for everybody. For the most part, relatively large asset pools must be segregated to justify the legal and investment banking costs of effecting the transaction."

In the most common form of securitization, the loan originator (bank) segregates the assets in a subsidiary or separate trust, thus moving them off its balance sheet as long as no recourse to the bank is provided. For example, in the Marine Midland/Salomon Brothers Certificates for Automobile Receivables (CARs) deal, the loans were sold to an affiliate of Salomon Brothers, which in turn conveyed them to a separate trust. The loan originator receives an amount equal to the principal amount of the loans securitized and any premiums the seller of the package of loans can abstract.

Under the advice of the packager, usually an investment bank, the trust issues securities that represent fractional interests in its assets. The securities are often wholly or partly insured by a third-party guarantor, which may be one of a small number of insurance firms specializing in

financial guarantee insurance. The growth of such insurance has mirrored the growth in the commercial paper market, yet many financial insurance firms are hesitant to accept any risk. To date, these companies have required full recourse, in the way of a bank letter of credit or parent company guarantee, should a borrower default. The implications of their reluctance will be discussed below.

As with the now familiar mortgage-backed securities, the new issues pass ownership of the original loans or receivables to buyers of the securities. The loan originator generally retains servicing obligations and fees for the assets, in addition to origination fees and any premium gained from their sale. In this way, the seller earns fees both from making and servicing the loan, and yet need not continue to fund the asset and raise supporting capital. By retaining servicing obligations, the originating bank also retains its ability to realize the significant economies of scale present in large loan servicing operations.

On the investor end, the securities present small banks, thrifts, and institutional buyers with a twofold advantage: these investors can diversify into geographic and industry areas of commercial lending outside their normal scope and earn a rate of return above that associated with commercial paper of similar risk. For example, a commercial loan typically earns a return of 100-200 basis points above commercial paper rates for comparable maturities, and consumer loan rates are much higher than those of commercial loans. Even after servicing fees, the buyer of asset-backed securities tends to reap a risk-adjusted return superior to that available through other short-term investments. Furthermore, since the securities often entitle the holder to an interest in the underlying assets, the investor may be better collateralized than if investing in unsecured loans or other assets.

While it may prove an important tool for some institutions, securitization is not for everybody. For the most part, relatively large asset pools must be segregated to justify the legal and investment banking costs of effecting the transaction. One investment banker estimated that a bank must be able to issue securities backed by $50 million in assets for a private placement and $100 million for a public offering.[11] Clearly, minimums such as these may deter smaller

banks from accelerating their securitization activity.

Another important barrier to the wider practice of securitization is recourse. In deals that include recourse, the buyer and seller agree that if some of the securitized assets default, the seller will absorb the losses. When a counterparty has recourse to a bank, regulators have determined that the securitized assets should remain on the bank's books. The result is that when banks allow recourse, they must back the securitized assets with capital. A case in point occurred in 1984, when Citibank sold loan participations to Chatsworth, an independently owned, special-purpose corporation. Chatsworth then issued commercial paper based on the loans and guaranteed by Travelers Insurance Company. Under the sale and guarantee agreements, Travelers could look to Citibank if any of the participations turned sour. In the eyes of bank regulators, these "loans sold with recourse" represented bank borrowings, much like repurchase agreements, and so they could not be removed from Citibank's books. The Marine Midland and Valley National securitizations of car loans issued in early 1985 granted the guarantor recourse not to the bank, but to the bank holding company. Reluctantly, regulators allowed the selling banks to remove the assets from their books.

In a twist that may bypass the issue of recourse, some companies have structured securitizations utilizing a "spread account," or "overcollateralization." This account is funded with excess interest generated by the difference between the interest rate earned on the loan portfolio and that paid on the securities. The spread account is intended to absorb any future losses on the loans securitized; the historical default level of the securitized assets dictates the account's size. If estimated losses exceed actual losses, any funds left over once the security has matured become the property of the originating institution. On the other hand, if losses surpass the level of the spread account, investors are expected to absorb the difference.

Both the Comptroller of the Currency and the Federal Deposit Insurance Corporation support the notion of a spread account. They permit those commercial banks using spread accounts for recourse to remove the securitized assets from their balance sheets. In essence, both

regulators view the transaction as a sale. The Federal Reserve Board, however, considers securitization a financing and not a sale. Even with a spread account, the Board maintains that the bank's future earnings may be at risk.

A regulator's concern is to ensure that securitization improves the financial and competitive position of banks without jeopardizing the safety of the banking system. Securitizations of pooled loans differ from traditional loan sales or participations in that the securities issued are backed by loans to a host of borrowers, rather than by one or two individual credit extensions. Pooling the assets lowers the overall risk of default to a level below that of the individual loans taken separately, while the partial ownership afforded by securitization spreads that risk among many owners. In addition, the securities are more fungible because the default risk of a class of borrowing can be predicted with greater accuracy than can that of a single borrower.

At the same time that it dilutes the risk, however, pooling also clouds the buyer's credit decision. Instead of evaluating one or two borrowers, securities purchasers may need to evaluate a portfolio of 100 borrowers. Smaller banks and thrifts, possibly lacking the expertise required to make such an assessment, might therefore end up purchasing poor credits and increasing their risk profiles unacceptably. Furthermore, since providing full documentation to back the lending decision may not always be feasible, especially in the securitization of a very large portfolio, the investor must rely on the integrity of the originator/packager.

On the originating end, there are additional risks to consider. Once booked, an asset tends to remain the responsibility of the originating institution, even if no legal or financial liability is imputed. A soured securitized pool could so damage a bank's reputation—in an industry where an immaculate reputation is critical—that the event would sully the firm's future funding prospects. Hence, the originating bank may be subject to some serious credit risks even with a clean securitization. On the other hand, regulators fear that the larger banks, which are more active in employing loan sales, will bleed their portfolios by selling off their highest quality loans. On a non-risk-adjusted basis, such assets tend to be lower-earning, and so the incentive to remove them from the bank's books can be

quite strong. Obviously, though, no bank will be able to pursue this course for long, as its own credit standing will be downgraded as a result.

Pros and Cons of Off-Balance Sheet Activities

Notwithstanding the unquantifiable risks that have been touched on above, off-balance sheet techniques can frequently be used to limit known risks. In addition to the familiar hedging capabilities of swaps, futures, and forward contracts, securitization—an increasingly popular off-balance sheet activity—could enable community banks to diversify their loan portfolios in new ways. This potential could significantly strengthen the portfolios of many small agricultural and oil-patch banks. The benefits of judicious diversification could outweigh the risks, fortifying the banking system as a consequence.

Still, in the aggregate, the risks inherent in off-balance sheet transactions pose a greater threat to the banking system than they have formerly. The growth of contingent liabilities presents a particular problem for capital regulation as currently designed. Existing regulation assumes that banks act privately to take on more risk than is publicly desirable. This logic argues for applying capital guidelines to off-balance sheet activities as well, since they augment risk. Extending capital requirements to include some portion of off-balance sheet activities will force banks to recognize their accompanying risk and should tend to reduce unwarranted exposures.

The risk-adjusted capital proposals issued by federal regulators in 1987 aim to bring capitalization policies more into line with the risks posed by current banking operations.[12] The proposals address off-balance sheet exposures by including letters of credit and loan commitments in the determination of capital requirements. By raising the level of required capital, these higher standards will not only mandate a thicker capital cushion but will also augment the influence of market discipline over prudent bank operation.

NOTES

[1] In traditional microeconomic theory, a tax on a good serves to raise the price of the good relative to other goods. As a result, the price ratio is altered and agents will begin to substitute non-taxed goods for the taxed good. The case is analogous for activities that have capital requirements and those without such requirements. In order to reduce costs, businesses will attempt to reduce their use of capital-intensive activities and replace them with services that do not have capital requirements.

[2] Proctor (1986), p. 242.

[3] Computed by Federal Reserve Bank of Atlanta from data obtained from the Federal Reserve Board of Governors' tapes on Commercial Bank Call and Income Reports.

[4] Computed by the Federal Reserve Bank of Atlanta from data obtained from the Federal Reserve Board of Governors' tapes on Commercial Bank Call and Income Reports, Schedule RC-L: Commitments and Contingencies. Figures are as of December 31, 1986.

[5] Bennett (1986), p. 25.

[6] For a discussion on the motivations for a swap, see Wall and Pringle (1987).

[7] For a recent article on the "plain vanilla" swap and its application as a means of financing, see Wall (July 1986).

[8] These figures are from a survey released by the International Swap Dealers Association. See Weiner (1987).

[9] The figures tend to overstate the amount of risk to which institutions are exposed with interest rate swaps. These figures are based on notional amounts or principals which are not exchanged in an interest rate swap. Thus, this amount is not at risk. Only the differences in the streams of interest payments are exchanged, and it is this amount that is at risk.

[10] For a discussion on commercial banks as intermediaries for interest rate swaps, see Bank for International Settlements (April 1986), pp. 45-55.

[11] Arnold (1986).

[12] The Federal Reserve Board's risk-adjusted proposals can be found in the *Federal Register*, March 24, 1987, pp. 9304-12. FDIC proposals appear in the *Federal Register*, April 9, 1987, pp. 11476-92. Proposals by the Comptroller of the Currency appear in the *Federal Register*, June 17, 1987, pp. 23045-54.

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Book Review

Reference Works in Business and Economics

Jerry J. Donovan

The books reviewed here are new and recently published monographs (1984-87) that have broad reference application in business and economics. Included also, however, are two rather specialized titles published by the International Monetary Fund, since these deal with concepts coming to the fore as the importance of international trade increases. Despite their proven excellence, continuing serial publications such as the annual *Economic Report of the President* do not fall within the scope of this review.

Accounting, Banking, Finance, and Economics

Barron's Finance and Investment Handbook, by John Downes and Jordan Elliot Goodman. Woodbury, New York: Barron's Educational Series, 1987. 994 pages. $18.95.

Designed as a desktop reference for investors of all kinds, this handbook seems sophisticated and comprehensive enough to suit the professional while being sufficiently basic and accessible for the student or occasional inquirer.

The reviewer, associate librarian of the Atlanta Fed's research library, is a specialist in banking, economics, and finance information.

The book focuses on the application of financial and investment information, and so its format incorporates a wealth of answers to timely questions. For instance, what do futures contracts for interest rates or for stock indexes involve? What are mortgage-backed (pass-through) securities and zero-coupon securities? A self-contained dictionary of finance and investment (pp. 159-541) covers these kinds of terms.

Exhaustive lists of agencies and other organizations useful to the investor make up another section of the book. Included, for example, is a hierarchical array of the Federal Reserve System with the addresses and telephone numbers for the Board, the District banks, and the Branch banks. Elsewhere, a useful selection of historical data and charts illustrates the performance of phenomena like the Bond Buyer Index, NASDAQ, and the Wilshire 5000 Equity Index. A thoroughly constructed table of contents and in-depth index permit ready access to points of inquiry. Recommended as a handy, compact reference book.

Dictionary of International Finance, by Julian Walmsley. Second edition. New York: John Wiley & Sons, 1985. 222 pages. $39.95.

This edition of a well-respected work emphasizes international topics and introduces

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coverage of terminology related to growing areas like financial futures and options markets. Most entries consist of a concise definition or discussion of a term followed by a brief bibliography of further reference sources. Some definitions are accompanied by diagrams, as well.

"Balance of trade" is textually defined in American English terminology, but the French, U.K., and Continental idiomatic differences fundamental to understanding this concept are noted. "Futures" are discussed comprehensively not only in reference to commodities but also to financial instruments such as stock index futures. Additional terms of contemporary interest are "interest rate swaps" and "securitization." Names of foreign organizations appear in the original language with their respective acronyms: "Banco Centroamericano de Intergracion Economica" and BCIE. The "Bank for International Settlements (BIS)" entry exemplifies this dictionary's thorough scholarship: it refers the user to the Basle Agreement, for comparison, and to the European Monetary Fund, which the BIS administers. Recommended for research/scholarly use.

Handbook of United States Economic and Financial Indicators, by Frederick M. O'Hara, Jr. and Robert Stignano. Westport, Connecticut: Greenwood Press, 1985. 224 pages. $35.00.

Information about the most important U.S. measures of economic activity is uniquely compiled in this handbook. More than 200 indicators, drawn from 50 or more fully documented sources, are encompassed. Indicators may take many forms: volumes, ratios, indexes, composites, and so on, and they may be viewed over the short or the long term. The book is designed for use by researchers who need quick answers about various indicators, help in finding their current and historical values, and the names and addresses of their issuing agencies.

In addition to its inclusive treatment of serious economic indicators, the book also explains tongue-in-cheek "nonquantitative" measures (for example, the Hemline Index, Superbowl Predictor, and Drinking Couple Count) for the edification and delight of readers who must grapple with the often whimsical terminology of Wall Street. Besides the body of main entries, the work carries an alphabetical index and three

appendixes (Nonquantitative Indicators, Abbreviations List and Guide to Sources, and List of Compilers of Indicators). Recommended for research/scholarly use.

The Desktop Encyclopedia of Corporate Finance and Accounting, by Charles J. Woelfel. Chicago: Probus Publishing, 1987. 518 pages. $27.50.

Beyond its authoritative definitions, this encyclopedia describes accounting and financial reporting theory, principles, and practices. It deals with conceptual foundations to provide a solid understanding of financial statements. Both a reference and a sourcebook, the work contains more than 270 short articles on accounting and finance, accompanied by some 2,500 entries for definitions of related concepts. The book was written with the cooperation of the Financial Accounting Standards Board, whose pronouncements are quoted throughout. The encyclopedia is alphabetized and indexed for easy access, and it offers over 75 exhibits to illustrate complex concepts. Readers who wish to explore topics further are assisted by extensive cross-referencing and bibliographies of primary and secondary sources.

Typical of the helpful discussions and information are the "Beta Coefficient" to assess market risk of stocks; the names of the current "Big 8" accounting partnerships; "Foreign Operations and Exchanges," which, for U.S. companies doing business abroad, describes the considerations regarding foreign currency transactions and the translation of financial statements denominated in a foreign currency; "Ratios," including such profitabilty measures as return on total assets and return on invested capital, with a three-page table spelling out kinds of financial statement ratios and interpreting their usefulness; and the concept of the "Value Added Statement" seen as the portion of the selling price of a commodity or service attributable to a stage of production. Recommended as a desk reference book, as well as for research/scholarly use.

Glossary of Financial Services Terminology. Chicago: The Institute of Financial Education, 1987. 85 pages. $4.95.

This terse but inclusive glossary speaks to the impact on vocabulary brought about by deregula-

tion, tax reform, and recently expanded menus of financial products and services. Offered by the Institute of Financial Education, a nationwide educational organization for personnel of savings and loan associations and cooperative banks, the book concisely defines the new vocabulary with the savings institution professional in mind.

The alphabetically arranged entries convey succinct working definitions of both old and new concepts. The reader can, for instance, find the terms ACH, ATM, ARM, and FPM; discussions of Chapters 7, 11, and 13 bankruptcies; junk bonds; and repurchase agreements ("repos"). Recommended for thrift institution executives and office personnel as well as for scholarly use.

Dictionary of Banking and Financial Services, by Jerry M. Rosenberg. Second edition. New York: John Wiley & Sons, 1985. 708 pages. $34.95.

The expansion and deregulation of the financial services industries have brought about enormous changes in the terminology used to describe their growth and their testing of regulatory boundaries. While some researchers may prefer F.L. Garcia's revision of Munn's *Encyclopedia of Banking and Finance* (eighth edition, 1983), this second edition of Rosenberg's *Dictionary of Banking and Finance* reflects in its different title, and in its substance, the vast changes that have occurred in financial services since the onset of deregulation.

The totally new work incorporates into its text, for instance, all the entries from the American Bankers Association's prodigious *Banking Terminology*; picks up abbreviations like EFT, ARM, ATM, and the venerable GIGO—for "garbage in, garbage out"; and scrutinizes the shades of meaning for terms such as "arbitrage," giving an equal nod to the spellings "arbitrager (arbitrageur)" to denote a practitioner. Alphabetically arranged and abundantly cross-referenced, the book is recommended for research/scholarly use.

Dictionary of Economics and Business, by S. E. Stiegler. Second edition. Aldershot, England, and Brookfield, Vermont: Gower Publishing, 1985. 462 pages. $35.50.

This rigorous dictionary of economics will facilitate the business person's search for a con-

cise definition of economic terms, or of concepts from statistics, computing, government, and industrial relations where these fields overlap economics. As one would expect, some terms are specific to the United Kingdom. The dictionary handily defines terms like "lagged relationship" and discusses such economic concepts as the Edgeworth-Bowley box diagram (see Chart 1).

Working definitions are given for the E.C.U. (European Currency Unit), the E.E.C. (European Economic Community), and the E.M.A. (European Monetary Agreement), although, oddly, LIBOR (London Inter-Bank Offer Rate) is omitted. The GATT is taken up, as are Keynesian analysis and assorted current topics in the world of communication (for example, L.A.N., or local area network). Recommended for business people, particularly those doing business abroad, and for research/scholarly use.

Dictionary of Economics and Financial Markets, by Alan Gilpin. Fifth edition. London: Butterworths, 1986. 245 pages. $42.95.

Beyond its utility in the area of economic definitions per se, this volume focuses on commodity, stock, financial, and futures markets for the benefit of students of applied economics and readers who wish to enhance their understanding of the financial press. An exposition of "futures contract," for example, includes the detailed elements of a typical futures transaction—information basic to understanding stock index futures as well as portfolio insurance, two phenomena receiving widespread attention since October 19, 1987 ("Black Monday").

In another vein, the author has enjoyed the cooperation of the Board of Governors of the Federal Reserve System in his detailed exposition of the nature and activities of the central bank of the United States. The entry illustrates the impact that open market operations and the regulation of deposits and loans have on spending, consumption, and investment, and, in turn, on the determinants of production, employment, and prices in the United States.

Within the volume's scope are LIBOR, to which interest rates on many variable-rate securities are tied, as well as short position, "stocks sold short and not covered as of a particular date." While much new material in this work relates to the United States, Canada, Aus-

Chart 1.
The Edgeworth-Bowley Box Diagram
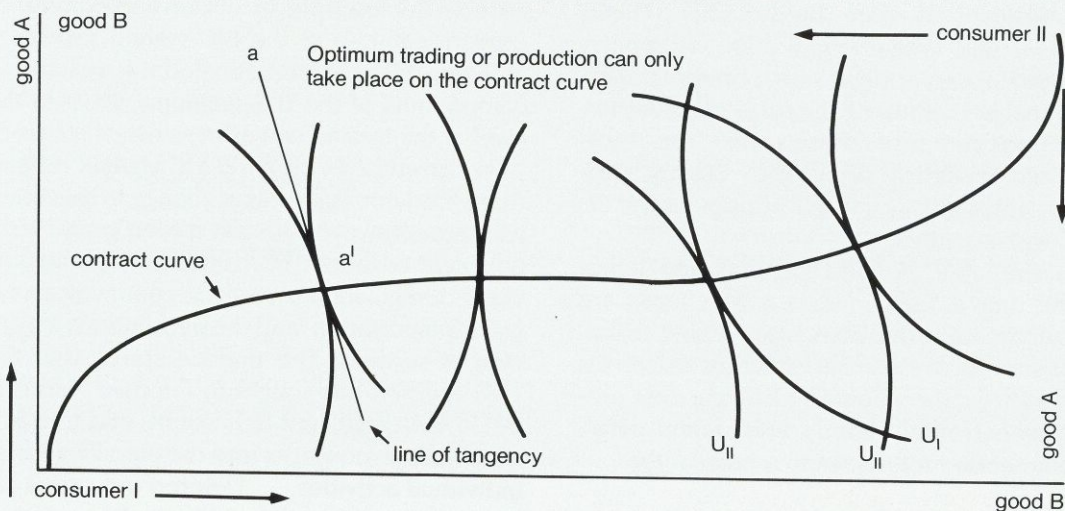
good A

good B

a

Optimum trading or production can only take place on the contract curve

consumer II

contract curve

a^I

line of tangency

U_II

U_II

U_I

good A

consumer I

good B

tralia, and the European Economic Community, the book remains heavily oriented toward the economics and finance of Britain. Recommended as a handy desk reference and for research/ scholarly use, especially for those interested in business abroad.

Forecast and Historical Statistical Data

Key Indicators of County Growth, 1970-2010: Households, Income, Population, Employment. Washington, D.C.: NPA Data Services, 1987. 529 pages. $195.00.

This compendium of economic and demographic trends of the U.S. county economies includes historical and projected county (or equivalent) data for ten key indicators, including population, households, personal income, and employment. Each indicator typically is broken down into several facets; for example, employment subdivides into full- and part-time jobs as well as earnings per job. These data, presented systematically for four actual years and four forecast years, constitute the 1986 Regional Economic Projections Series (REPS) from NPA

Data Services, Inc., an affiliate of the National Planning Association. Neither organization's forecasts are regarded as *official,* since the statistical methodology employed reflects the judgment of those private establishments. Nevertheless, the basic time series data on which their projections are based have been obtained from the Bureau of the Census and are official. Hence, the historical statistics exhibited in the tables can be accepted as official.

The series contain "consistent historical data for the period 1967-1986 . . . and projections for the years 1987-2010, for 52 economic indicators . . . and for 156 population series . . . and household indicators. The projection methods reflect the national and international as well as the regional and local economic growth trends, and the current demographic patterns of births, deaths, and regional population movements."

The volume opens with an overview of the geographic structure and growth of the U.S. county economies, illustrated by 12 maps showing county detail for the 48 contiguous states. The overview is followed by an analysis of structural features based on 1985 data, and then an analysis of growth trends with projected changes over the period 1987-2010. The data section, which comes next, presents the statistics in

tabular form, tagging them with appropriate FIPS (Federal Information Processing Standards) Codes to identify uniquely the geographical entities tabulated. Tables are arranged alphabetically by state, then county. (These tables are also available in a PC-ready version formatted for easy application in popular spreadsheet analysis software.) The concluding section of the book comprises three appendixes: metropolitan statistical areas with County FIPS Codes, states with County FIPS Codes, and state maps with counties.

Since reliable, detailed economic and demographic data at the county level frequently are difficult to locate, this book is a welcome arrival. Whether or not a researcher embraces its forecast methodology, the volume's historical data present an extremely handy and useful array. Recommended for research/scholarly use.

Main Economic Indicators: Historical Statistics, 1964-1983. Paris: Organisation for Economic Cooperation and Development, Department of Economics and Statistics, 1984. 656 pages. $35.00.

Most of the time series published in *Main Economic Indicators,* the OECD's monthly periodical, over the period 1964-83 are cumulated in this bilingual (English/French) reference work. For the organization's 25 member nations, the tables provide data on national accounts, industrial production, stocks and orders, construction activity, retail and wholesale trade, labor force, wages, prices, finance, foreign trade, and balance of payments. Recommended for research/scholarly use.

Statistical Data Definitions and Concepts

Standard Industrial Classification Manual, 1987. Washington, D.C.: Government Printing Office for the Office of Management and Budget, 1987. 703 pages. $24.00.

This is the first major revision of the standard industrial classification (SIC) scheme since 1972. The system was adopted by the federal government in 1941 to facilitate the collection and presentation of statistical data for manufacturing and nonmanufacturing industries. Since then, SIC codes have been used in the arrangement of

all U.S. Census statistics on various industries. Additionally, the codes have been taken up by many nongovernment sources to organize data in market guides, directories of companies, and indexes (for example, in all Dun and Bradstreet directories). Use of the SIC system promotes comparability of statistical data describing components of the U.S. economy down to the level of the individual business establishment.

As currently revised, the *SIC Manual* reflects three fundamental areas of change in the American economy over the last fifteen years: technological advances in manufacturing and services; deregulation of banking, communications, and transportation; and the tremendous expansion of services. The preface states that the 1987 revision has sought to improve "industry detail, coverage, and definitions, and to clarify classification concepts and the classification of individual activities. . . . Deleted industries are merged into other industries, and new industries are created by subdividing or restructuring existing industries. Various industries have also been changed by transfers of individual activities, primarily to increase the accuracy, consistency, and usefulness of the classifications." This fine-tuning is apparent in the revised codes for "Computer and Data Processing Services" (see Chart 2).

An appendix is devoted to two-way conversion tables for codes from 1972 and 1987. Principles and procedures for the review of the Standard Industrial Classification constitute a second appendix, and the third is a glossary of abbreviations.

Aside from being indispensable for anyone involved in tabulating or interpretating U.S. industry statistics, the 1987 SIC Manual is an important tool for capturing the impact of the basic shifts that have occurred in the domestic economy since 1972.

IMF Glossary; English-French-Spanish, 1986. Washington, D.C.: International Monetary Fund, 1986. 286 pages. $15.00.

While this authoritative work is entitled a "glossary," it is more in the nature of a polyglot thesaurus or dictionary of synonyms, since it does not define the terms which it systematically lists in English, French, and Spanish. The substance of the book is the International Monetary Fund's controlled vocabulary, that is, the words,

Chart 2.
Expanded Classification for "Computer and Data Processing Services," SIC Manual, 1972 vs. 1987

	1972		1987
737	**Computer and Data Processing Services**	737	**Computer and Data Processing Services**
7372	Computer programming and other software services	7371	Computer programming services
7374	Data processing services	7372	Prepackaged software
7379	Computer related services, not elsewhere classified	7373	Computer integrated systems design
		7374	Data processing and preparation
		7375	Information retrieval services
		7376	Computer facilities management
		7377	Computer rental and leasing
		7378	Computer maintenance and repair
		7379	Computer related services, nec

Source: *Standard Industrial Classification Manual, 1972* (Washington, D.C.: Government Printing Office for the Office of Management and Budget, 1972), p. 601; and ibid. (1987), p. 440.

Chart 3.
"Balance of Payments" Example from IMF Glossary

B-12	balance of payments assistance	aide au titre de la balance des paiements concours (financiers) au titre de la balance des paiements	asistencia con fines de balanza de pagos
B-13	Balance of Payments Division [IMF-STA]	Division de la balance des paiements	División de Balanza de Pagos
B-14	*Balance of Payments Manual* [IMF]	*Manuel de la balance des paiements*	*Manuel de Balanza de Pagos*
B-15	balance of payments need	besoin resultant (de la situation) de la balance des paiements	necesidad de balanza de pagos
B-16	balance of payments position	position de balance des paiements situation des paiements exterieurs solde de paiements exterieurs [*parfois*]	posición de balanza de pagos situación de balanza de pagos saldo de la balanza de pagos [*a veces*]
B-17	balance of payments test [SDR]	critère-test de la situation de la balance des paiements	prueba de la situación de la balanza de pagos
B-18	balance of trade trade balance	balance commerciale	balanza comercial

Source: *IMF Glossary,* 1986 (Washington, D.C.: International Monetary Fund, 1986), p. 13.

phrases, and institutional titles most commonly encountered in IMF documents about money and banking, public finance, balance of payments, and economic growth. The English terms, with French and Spanish equivalents, are arranged alphabetically in the first section of the book and are frequently cross-referenced to codes denoting their source, subject field, or country (see Chart 3).

Sections permitting alphabetical access by French and by Spanish follow, along with a sec-

tion that lists abbreviations and acronyms in alphabetical order, regardless of language. Of particular interest to persons concerned with foreign currencies is the last section of the book, which specifies currency units for all 141 member nations of the IMF.

While this book is primarily intended as an aid for IMF language personnel, it clearly will be useful to many researchers in banking, finance, and economics whose work deals with areas of the world where English, French, or Spanish is

Chart 4.

Descriptor	⟶	**VOCATIONAL TRAINING**
Language equivalents	⟶	**FORMATION PROFESSIONNELLE/** ⟵ Facet
		FORMACION PROFESIONAL—06.03.07
Scope note	⟶	*ACTIVITIES AIMED AT PROVIDING THE SKILLS,*
		KNOWLEDGE, AND ATTITUDES REQUIRED FOR
		EMPLOYMENT IN A PARTICUALR OCCUPATION
		(OR A GROUP OF RELATED OCCUPATIONS).
Synonym (used for)	⟶	*UF:* OCCUPATIONAL TRAINING
		TT: TRAINING ⟵ Top term
Broader term	⟶	*BT:* TRAINING
		NT: AGRICULTURAL TRAINING ⟵ Narrower terms
		APPRENTICESHIP
		BASIC TRAINING
		FURTHER TRAINING
		IN-SERVICE TRAINING
		INDUSTRIAL TRAINING
		MODULAR TRAINING
		PERSONNEL TRAINING
		PREVOCATIONAL TRAINING
		RETRAINING
		SANDWICH TRAINING
Related terms	⟶	*RT:* APPRENTICES
		OCCUPATIONS
		TRAINEES
		TRAINING ALLOWANCES
		TRAINING CENTRES
		VOCATIONAL EDUCATION
Synonym	⟶	*OCCUPATIONAL TRAINING*
Descriptor	⟶	USE: VOCATIONAL TRAINING—06.03.07 ⟵ Facet

Source: *Macrothesaurus for Information Processing in the Field of Economic and Social Development* (New York: United Nations, 1985), p. xiv.

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spoken or who are making subject presentations there.

Macrothesaurus for Information Processing in the Field of Economic and Social Development, prepared by Jean Viet. New York: United Nations, 1985. 347 pages. $35.00.

The introduction to this thesaurus states that it forms a "common tool for indexing, processing and retrieving of information contained in documents issued by diverse specialized agencies, principally those of the United Nations system, and thereby promotes the mutual exchange of data." The book is divided into four parts: (1) an alphabetical list of terms in English, accompanied by their French and Spanish equivalents; (2) a display of subject headings, or "descriptor groups," arranged by subject code number; (3) a hierarchical index which presents chains of descriptors that can be traced in the thesaurus from broader terms, or "Top Terms" (TT), down to the most specific terms; and (4) the key-word-out-of-context index, wherein all significant words used to make up the descriptors are arranged in alphabetical order (see Chart 4). The first three hierarchical sections are particularly useful for determining precise components of the concepts employed in U.N. documents on economics and social development. This revised edition strives for compatibility with other U.N. sectoral thesauruses serving agriculture, industry, labor, education, population, science, technology, culture, communication, health, and the environment. Recommended for research/scholarly use.

A Manual on Government Finance Statistics. Washington, D.C.: International Monetary Fund, 1986. 373 pages. $10.00.

The focus of this manual is on national government financial transactions—taxing, borrowing, spending, and lending. It relates these, in a definitional sense, to other data available for an economy, to wit, sets of national accounts and national accounting report systems. Emphasis is placed on how to summarize and organize government financial statistics in formats appropriate for analysis, planning, and policy determination. The volume features a glossary, along with in-depth indexing. Helpful in understanding the theoretical underpinnings of government finance reporting, the manual is recommended for research/scholarly use.

Working Paper Series Available

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	AUG 1987	JUL 1987	AUG 1986	ANN % CHG		AUG 1987	JUL 1987	AUG 1986	ANN % CHG
UNITED STATES									
Commercial Bank Deposits	1,710,703	1,727,468	1,592,789	+ 7	S&Ls Total Deposits	676,799	676,830	621,394	+ 9
Demand	358,327	372,950	353,322	+ 1	NOW	33,488	34,478	27,882	+20
NOW	156,004	157,834	124,925	+25	Savings	159,109	161,536	143,812	+11
Savings	516,114	518,079	467,756	+10	Time	481,310	478,463	447,119	+ 8
Time	717,077	711,213	688,537	+ 4	Credit Union Deposits	66,195	66,396	47,671	+39
					Share Drafts	8,940	9,357	6,842	+31
					Savings & Time	55,973	56,212	39,741	+41
SOUTHEAST									
Commercial Bank Deposits	203,632	203,673	186,785	+ 9	S&Ls Total Deposits	86,013	86,423	80,862	+ 6
Demand	39,962	41,289	38,828	+ 3	NOW	5,317	5,524	4,406	+21
NOW	21,618	21,969	16,820	+29	Savings	19,698	20,023	18,376	+ 7
Savings	57,938	57,855	52,642	+10	Time	60,407	60,246	57,567	+ 5
Time	88,069	86,330	82,876	+ 6	Credit Union Deposits	7,418	7,435	5,617	+32
					Share Drafts	871	922	679	+28
					Savings & Time	6,284	6,223	4,684	+34
ALABAMA									
Commercial Bank Deposits	20,730	20,808	18,694	+11	S&Ls Total Deposits	4,263	4,301	4,860	-12
Demand	4,014	4,117	4,046	- 1	NOW	248	260	267	- 7
NOW	2,180	2,184	1,619	+35	Savings	775	784	948	-18
Savings	4,691	4,688	3,995	+17	Time	3,297	3,307	3,663	-10
Time	10,217	10,197	9,532	+ 7	Credit Union Deposits	997	983	834	+20
					Share Drafts	142	148	158	-10
					Savings & Time	809	808	695	+16
FLORIDA									
Commercial Bank Deposits	79,248	78,774	70,652	+12	S&Ls Total Deposits	55,989	56,210	55,985	+ 0
Demand	15,274	15,994	14,492	+ 5	NOW	3,332	3,476	2,907	+15
NOW	9,687	9,853	7,288	+33	Savings	13,625	13,852	13,266	+ 3
Savings	27,326	27,033	24,064	+14	Time	38,418	38,245	39,274	- 2
Time	28,499	27,446	26,491	+ 8	Credit Union Deposits	3,858	3,888	2,912	+32
					Share Drafts	450	481	336	+34
					Savings & Time	3,117	3,142	2,316	+35
GEORGIA									
Commercial Bank Deposits	32,614	32,751	29,852	+ 9	S&Ls Total Deposits	7,426	7,510	6,328	+17
Demand	8,547	8,626	8,138	+ 5	NOW	878	903	586	+50
NOW	3,072	3,129	2,352	+31	Savings	1,593	1,626	1,381	+15
Savings	8,882	8,939	8,649	+ 3	Time	4,989	5,013	4,410	+13
Time	13,588	13,443	12,134	+12	Credit Union Deposits	1,418	1,426	1,006	+41
					Share Drafts	159	164	98	+62
					Savings & Time	1,238	1,244	900	+38
LOUISIANA									
Commercial Bank Deposits	27,910	28,129	27,874	+ 0	S&Ls Total Deposits	9,880	9,919	6,741	+47
Demand	4,893	5,109	5,068	- 3	NOW	389	403	298	+31
NOW	2,229	2,270	1,893	+18	Savings	2,117	2,146	1,513	+40
Savings	8,080	8,112	7,621	+ 6	Time	7,373	7,374	4,935	+49
Time	13,120	13,048	13,725	- 4	Credit Union Deposits	*	*	*	
					Share Drafts	*	*	*	
					Savings & Time	*	*	*	
MISSISSIPPI									
Commercial Bank Deposits	14,110	14,102	13,244	+ 7	S&Ls Total Deposits	1,798	1,805	1,178	+53
Demand	2,292	2,355	2,375	- 3	NOW	93	98	77	+21
NOW	1,418	1,421	1,136	+25	Savings	274	272	170	+61
Savings	3,024	3,042	2,770	+ 9	Time	1,349	1,343	870	+55
Time	7,610	7,512	7,257	+ 5	Credit Union Deposits	*	*	*	
					Share Drafts	*	*	*	
					Savings & Time	*	*	*	
TENNESSEE									
Commercial Bank Deposits	29,020	29,109	26,469	+10	S&Ls Total Deposits	6,657	6,678	5,770	+15
Demand	4,942	5,088	4,709	+ 5	NOW	377	384	271	+39
NOW	3,032	3,112	2,532	+20	Savings	1,314	1,343	1,098	+20
Savings	5,935	6,041	5,543	+ 7	Time	4,981	4,964	4,417	+13
Time	15,035	14,684	13,737	+ 9	Credit Union Deposits	1,145	1,138	865	+32
					Share Drafts	120	129	87	+38
					Savings & Time	1,120	1,029	773	+45

Notes: All deposit data are extracted from the Federal Reserve Report of Transaction Accounts, other Deposits and Vault Cash (FR2900), and are reported for the average of the week ending the 1st Monday of the month. Most recent data, reported by institutions with over $26.8 million in deposits and $2.6 million of reserve requirements as of June 1986, represents 95% of deposits in the six state area. The major differences between this report and the "call report" are size, the treatment of interbank deposits, and the treatment of float. The total deposit data generated from the Report of Transaction Accounts eliminates interbank deposits by reporting the net of deposits "due to" and "due from" other depository institutions. The Report of Transaction Accounts subtracts cash in process of collection from demand deposits, while the call report does not. The Southeast data represent the total of the six states. Subcategories were chosen on a selective basis and do not add to total.
* = fewer than four institutions reporting.

FINANCE

$ millions

UNITED STATES

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	1,721,352	1,710,764	1,600,243	+ 8	S&Ls Total Deposits	678,574	676,628	624,761	+ 9
Demand	358,909	358,299	347,216	+ 3	NOW	34,488	33,490	27,885	+24
NOW	161,629	156,077	126,830	+27	Savings	156,617	158,931	144,259	+ 9
Savings	516,407	516,126	474,141	+ 9	Time	484,845	481,328	449,438	+ 8
Time	721,255	717,121	690,673	+ 4	Credit Union Deposits	66,296	66,196	48,306	+37
					Share Drafts	9,127	8,941	6,752	+35
					Savings & Time	56,014	55,971	40,351	+39

SOUTHEAST

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	205,285	203,612	186,931	+10	S&Ls Total Deposits	86,380	86,229	81,280	+ 6
Demand	40,159	39,884	37,791	+ 6	NOW	5,476	5,326	4,353	+26
NOW	22,346	21,660	17,142	+30	Savings	19,372	19,710	18,509	+ 5
Savings	57,693	57,938	52,965	+ 9	Time	60,884	60,596	57,782	+ 5
Time	89,383	88,073	83,024	+ 8	Credit Union Deposits	7,409	7,418	5,680	+30
					Share Drafts	876	871	667	+31
					Savings & Time	6,196	6,184	4,744	+31

ALABAMA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	20,912	20,729	18,683	+12	S&Ls Total Deposits	4,255	4,273	4,853	-12
Demand	4,068	4,014	3,915	+ 4	NOW	256	249	266	- 4
NOW	2,232	2,180	1,641	+36	Savings	760	775	961	-21
Savings	4,702	4,692	4,008	+17	Time	3,284	3,297	3,623	- 9
Time	10,424	10,217	9,597	+ 9	Credit Union Deposits	986	997	845	+17
					Share Drafts	144	142	142	+ 1
					Savings & Time	814	809	707	+15

FLORIDA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	79,910	79,252	70,858	+13	S&Ls Total Deposits	56,015	55,989	55,886	+ 0
Demand	15,354	15,224	14,118	+ 9	NOW	3,453	3,332	2,836	+22
NOW	10,033	9,729	7,351	+36	Savings	13,362	13,565	13,290	+ 1
Savings	27,208	27,332	24,298	+12	Time	38,576	38,478	39,166	- 2
Time	28,924	28,500	26,567	+ 9	Credit Union Deposits	3,853	3,858	2,992	+29
					Share Drafts	453	450	338	+34
					Savings & Time	3,115	3,117	2,371	+31

GEORGIA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	33,074	32,614	29,508	+12	S&Ls Total Deposits	7,307	7,385	6,488	+13
Demand	8,403	8,547	7,880	+ 7	NOW	878	878	610	+44
NOW	3,221	3,072	2,434	+32	Savings	1,518	1,571	1,408	+ 8
Savings	8,827	8,882	8,569	+ 3	Time	4,943	4,971	4,506	+10
Time	13,994	13,589	11,996	+17	Credit Union Deposits	1,424	1,418	1,052	+35
					Share Drafts	156	159	105	+49
					Savings & Time	1,248	1,238	942	+32

LOUISIANA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	27,938	27,886	27,884	+ 0	S&Ls Total Deposits	10,290	10,127	7,391	+39
Demand	5,002	4,865	5,000	+ 0	NOW	406	397	305	+33
NOW	2,276	2,229	1,928	+18	Savings	2,162	2,211	1,615	+34
Savings	8,079	8,078	7,713	+ 5	Time	7,709	7,520	5,478	+41
Time	13,084	13,122	13,700	- 4	Credit Union Deposits	*	*	*	
					Share Drafts	*	*	*	
					Savings & Time	*	*	*	

MISSISSIPPI

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	14,195	14,110	13,414	+ 6	S&Ls Total Deposits	1,810	1,798	990	+83
Demand	2,293	2,292	2,302	- 0	NOW	96	93	75	+28
NOW	1,451	1,418	1,206	+20	Savings	269	274	141	+91
Savings	2,982	3,024	2,814	+ 6	Time	1,351	1,349	691	+96
Time	7,753	7,610	7,312	+ 6	Credit Union Deposits	*	*	*	
					Share Drafts	*	*	*	
					Savings & Time	*	*	*	

TENNESSEE

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Commercial Bank Deposits	29,256	29,021	26,584	+10	S&Ls Total Deposits	6,703	6,657	5,672	+18
Demand	5,039	4,942	4,576	+10	NOW	387	377	261	+48
NOW	3,133	3,032	2,582	+21	Savings	1,301	1,314	1,094	+19
Savings	5,895	5,930	5,563	+ 6	Time	5,021	4,981	4,318	+16
Time	15,204	15,035	13,852	+10	Credit Union Deposits	1,146	1,145	791	+45
					Share Drafts	123	120	82	+50
					Savings & Time	1,019	1,020	724	+41

Notes: All deposit data are extracted from the Federal Reserve Report of Transaction Accounts, other Deposits and Vault Cash (FR2900), and are reported for the average of the week ending the 1st Monday of the month. Most recent data, reported by institutions with over $26.8 million in deposits and $2.6 million of reserve requirements as of June 1986, represents 95% of deposits in the six state area. The major differences between this report and the "call report" are size, the treatment of interbank deposits, and the treatment of float. The total deposit data generated from the Report of Transaction Accounts eliminates interbank deposits by reporting the net of deposits "due to" and "due from" other depository institutions. The Report of Transaction Accounts subtracts cash in process of collection from demand deposits, while the call report does not. The Southeast data represent the total of the six states. Subcategories were chosen on a selective basis and do not add to total.
* = fewer than four institutions reporting.

EMPLOYMENT

UNITED STATES

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	119,861	120,302	118,272	+1	Nonfarm Employment - thous.	102,925	102,154	100,549	+2
Total Employed - thous.	114,527	113,027	110,229	+4	Manufacturing	19,357	19,221	19,113	+1
Total Unemployed - thous.	6,857	7,088	8,015	-14	Construction	5,287	5,367	5,258	+1
Unemployment Rate - % SA	5.9	6	7		Trade	24,244	24,218	23,798	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	16,771	16,051	16,524	+1
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	24,433	24,447	23,428	+4
Mfg. Avg. Wkly. Hours	40.6	40.9	41.0	-1	Fin., Ins. & Real. Est.	6,642	6,708	6,387	+4
Mfg. Avg. Wkly. Earn. - $	407	403	399	+2	Trans., Com. & Pub. Util.	5,434	5,386	5,301	+3

SOUTHEAST

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	16,416	16,368	16,094	+2	Nonfarm Employment - thous.	13,459	13,322	13,090	+3
Total Employed - thous.	15,369	15,265	14,814	+4	Manufacturing	2,357	2,346	2,322	+2
Total Unemployed - thous.	1,048	1,103	1,271	-18	Construction	801	806	800	+0
Unemployment Rate - % SA	6.6	6.9	8.1		Trade	3,367	3,357	3,266	+3
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	2,328	2,221	2,261	+3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	2,958	2,945	2,836	+4
Mfg. Avg. Wkly. Hours	41.1	41.2	41.4	-1	Fin., Ins. & Real. Est.	799	802	776	+3
Mfg. Avg. Wkly. Earn. - $	364	359	358	+2	Trans., Com. & Pub. Util.	744	741	724	+3

ALABAMA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	1,921	1,904	1,902	+1	Nonfarm Employment - thous.	1,493	1,491	1,462	+2
Total Employed - thous.	1,787	1,766	1,718	+4	Manufacturing	363	362	357	+2
Total Unemployed - thous.	134	138	184	-27	Construction	77	78	77	0
Unemployment Rate - % SA	7.6	7.5	9.7		Trade	331	330	325	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	295	295	289	+2
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	272	271	261	+4
Mfg. Avg. Wkly. Hours	41.5	41.4	41.6	-0	Fin., Ins. & Real. Est.	71	71	70	+1
Mfg. Avg. Wkly. Earn. - $	367	362	359	+2	Trans., Com. & Pub. Util.	72	72	71	+1

FLORIDA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	5,902	5,925	5,603	+5	Nonfarm Employment - thous.	4,795	4,735	4,587	+5
Total Employed - thous.	5,592	5,589	5,251	+6	Manufacturing	525	523	515	+2
Total Unemployed - thous.	311	336	352	-12	Construction	344	343	343	+0
Unemployment Rate - % SA	5	5.7	6.1		Trade	1,307	1,301	1,236	+6
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	728	678	692	+5
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	1,273	1,272	1,204	+6
Mfg. Avg. Wkly. Hours	39.9	40.3	40.8	-2	Fin., Ins. & Real. Est.	357	357	342	+4
Mfg. Avg. Wkly. Earn. - $	329	328	330	-0	Trans., Com. & Pub. Util.	251	250	245	+2

GEORGIA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	3,067	3,084	3,081	-0	Nonfarm Employment - thous.	2,762	2,753	2,712	+2
Total Employed - thous.	2,913	2,928	2,907	+0	Manufacturing	572	570	570	+0
Total Unemployed - thous.	153	156	174	-12	Construction	157	160	162	-3
Unemployment Rate - % SA	5.2	5.2	5.8		Trade	697	696	680	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	464	458	449	+3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	540	537	520	+4
Mfg. Avg. Wkly. Hours	41.3	41.8	41.5	-0	Fin., Ins. & Real. Est.	151	152	149	+1
Mfg. Avg. Wkly. Earn. - $	353	346	347	+2	Trans., Com. & Pub. Util.	173	171	168	+3

LOUISIANA

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	1,991	1,966	2,004	-1	Nonfarm Employment - thous.	1,497	1,484	1,509	-1
Total Employed - thous.	1,793	1,761	1,735	+3	Manufacturing	170	168	166	+2
Total Unemployed - thous.	198	205	269	-26	Construction	85	85	90	-6
Unemployment Rate - % SA	10.3	10.5	12.6		Trade	360	359	366	-2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	311	304	319	-3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	318	315	317	+0
Mfg. Avg. Wkly. Hours	41.8	41.5	42.4	-1	Fin., Ins. & Real. Est.	84	84	86	-2
Mfg. Avg. Wkly. Earn. - $	464	448	450	+3	Trans., Com. & Pub. Util.	108	107	106	+2

MISSISSIPPI

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	1,178	1,160	1,181	-0	Nonfarm Employment - thous.	875	853	856	+2
Total Employed - thous.	1,073	1,046	1,051	+2	Manufacturing	227	225	224	+1
Total Unemployed - thous.	105	113	131	-20	Construction	37	36	37	-1
Unemployment Rate - % SA	9.8	9.8	12.2		Trade	189	189	184	+3
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	197	180	193	+2
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	139	137	135	+3
Mfg. Avg. Wkly. Hours	40.7	40.4	40.9	-0	Fin., Ins. & Real. Est.	39	39	38	+3
Mfg. Avg. Wkly. Earn. - $	312	306	309	+1	Trans., Com. & Pub. Util.	40	40	40	+1

TENNESSEE

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
Civilian Labor Force - thous.	2,358	2,329	2,323	+2	Nonfarm Employment - thous.	2,036	2,007	1,965	+4
Total Employed - thous.	2,211	2,174	2,151	+3	Manufacturing	501	498	490	+2
Total Unemployed - thous.	147	155	162	-9	Construction	102	103	89	+14
Unemployment Rate - % SA	7	7.5	7.9		Trade	482	481	475	+1
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	332	307	320	+4
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	415	413	400	+4
Mfg. Avg. Wkly. Hours	40.7	41.3	41.1	-1	Fin., Ins. & Real. Est.	97	98	91	+6
Mfg. Avg. Wkly. Earn. - $	360	362	354	+2	Trans., Com. & Pub. Util.	100	100	93	+8

NOTES: All labor force data are from Bureau of Labor Statistics reports supplied by state agencies.
Only the unemployment rate data are seasonally adjusted.
The Southeast data represent the total of the six states.

EMPLOYMENT

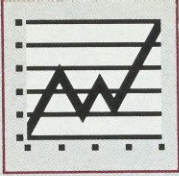|	OCT 1987	SEP 1987	OCT 1986	ANN % CHG		OCT 1987	SEP 1987	OCT 1986	ANN % CHG
UNITED STATES									
Civilian Labor Force - thous.	120,744	119,884	118,699	+2	Nonfarm Employment - thous.	103,749	102,913	100,984	+3
Total Employed - thous.	113,898	113,027	110,857	+3	Manufacturing	19,345	19,349	19,041	+2
Total Unemployed - thous.	6,845	6,857	7,842	-13	Construction	5,285	5,292	5,204	+2
Unemployment Rate - % SA	6	5.9	6.9		Trade	24,298	24,246	23,793	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	17,445	16,774	17,066	+2
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	24,522	24,395	23,464	+5
Mfg. Avg. Wkly. Hours	41.1	40.6	40.7	+1	Fin., Ins. & Real. Est.	6,619	6,642	6,383	+4
Mfg. Avg. Wkly. Earn. - $	409	405	396	+3	Trans. Com. & Pub. Util.	5,471	5,456	5,366	+2
SOUTHEAST									
Civilian Labor Force - thous.	16,487	16,415	16,124	+2	Nonfarm Employment - thous.	13,545	13,465	13,186	+3
Total Employed - thous.	15,493	15,364	14,881	+4	Manufacturing	2,367	2,358	2,323	+2
Total Unemployed - thous.	1,034	1,051	1,244	-17	Construction	809	805	804	+1
Unemployment Rate - % SA	6.4	6.6	7.8		Trade	3,383	3,365	3,289	+3
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	2,371	2,329	2,305	+3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	2,967	2,960	2,854	+4
Mfg. Avg. Wkly. Hours	41.5	41.1	41.2	+1	Fin., Ins. & Real. Est.	799	799	777	+3
Mfg. Avg. Wkly. Earn. - $	365	363	348	+5	Trans. Com. & Pub. Util.	746	743	727	+3
ALABAMA									
Civilian Labor Force - thous.	1,932	1,920	1,907	+1	Nonfarm Employment - thous.	1,502	1,495	1,472	+2
Total Employed - thous.	1,798	1,786	1,727	+4	Manufacturing	365	364	359	+2
Total Unemployed - thous.	134	134	180	-26	Construction	77	77	77	0
Unemployment Rate - % SA	7.2	7.6	9.8		Trade	333	331	327	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	301	296	296	+2
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	271	272	261	+4
Mfg. Avg. Wkly. Hours	41.7	41.8	41.0	+2	Fin., Ins. & Real. Est.	70	71	70	+1
Mfg. Avg. Wkly. Earn. - $	367	371	354	+4	Trans. Com. & Pub. Util.	72	72	72	+1
FLORIDA									
Civilian Labor Force - thous.	5,962	5,902	5,667	+5	Nonfarm Employment - thous.	4,839	4,800	4,635	+4
Total Employed - thous.	5,666	5,592	5,336	+6	Manufacturing	527	525	517	+2
Total Unemployed - thous.	296	311	331	-11	Construction	346	344	344	+1
Unemployment Rate - % SA	4.7	5	5.4		Trade	1,319	1,306	1,250	+6
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	750	733	712	+5
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	1,277	1,275	1,211	+5
Mfg. Avg. Wkly. Hours	40.2	40.1	40.7	-1	Fin., Ins. & Real. Est.	358	357	345	+4
Mfg. Avg. Wkly. Earn. - $	327	330	328	-0	Trans. Com. & Pub. Util.	253	250	246	+3
GEORGIA									
Civilian Labor Force - thous.	3,083	3,067	3,040	+1	Nonfarm Employment - thous.	2,775	2,762	2,728	+2
Total Employed - thous.	2,927	2,913	2,868	+2	Manufacturing	573	572	568	+1
Total Unemployed - thous.	156	154	172	-9	Construction	161	159	165	-2
Unemployment Rate - % SA	5.4	5.2	6		Trade	700	697	686	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	471	463	455	+4
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	540	539	522	+3
Mfg. Avg. Wkly. Hours	42.6	41.3	41.0	+4	Fin., Ins. & Real. Est.	150	151	149	+1
Mfg. Avg. Wkly. Earn. - $	361	354	342	+6	Trans. Com. & Pub. Util.	172	173	169	+2
LOUISIANA									
Civilian Labor Force - thous.	1,994	1,991	1,997	-0	Nonfarm Employment - thous.	1,508	1,499	1,515	-0
Total Employed - thous.	1,792	1,792	1,731	+4	Manufacturing	171	170	167	+2
Total Unemployed - thous.	202	199	266	-24	Construction	86	86	90	-4
Unemployment Rate - % SA	9.6	10.3	12.8		Trade	360	360	366	-2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	318	312	323	-2
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	322	319	319	+1
Mfg. Avg. Wkly. Hours	42.2	41.8	42.0	+0	Fin., Ins. & Real. Est.	84	84	85	-2
Mfg. Avg. Wkly. Earn. - $	465	454	442	+5	Trans. Com. & Pub. Util.	108	107	106	+2
MISSISSIPPI									
Civilian Labor Force - thous.	1,180	1,177	1,179	+0	Nonfarm Employment - thous.	878	875	860	+2
Total Employed - thous.	1,072	1,072	1,051	+2	Manufacturing	227	227	224	+1
Total Unemployed - thous.	108	105	128	-16	Construction	36	37	37	-2
Unemployment Rate - % SA	10.2	9.8	12.2		Trade	188	189	184	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	199	197	194	+3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	141	139	136	+4
Mfg. Avg. Wkly. Hours	40.6	40.7	40.4	+0	Fin., Ins. & Real. Est.	39	39	38	+3
Mfg. Avg. Wkly. Earn. - $	307	312	302	+2	Trans. Com. & Pub. Util.	41	40	41	+1
TENNESSEE									
Civilian Labor Force - thous.	2,337	2,357	2,335	+0	Nonfarm Employment - thous.	2,044	2,035	1,977	+3
Total Employed - thous.	2,239	2,210	2,168	+3	Manufacturing	505	501	489	+3
Total Unemployed - thous.	138	148	168	-18	Construction	102	103	91	+12
Unemployment Rate - % SA	6.6	7.2	7.8		Trade	483	482	475	+2
Insured Unemployment - thous.	N.A.	N.A.	N.A.		Government	334	328	325	+3
Insured Unemploy. Rate - %	N.A.	N.A.	N.A.		Services	416	416	405	+3
Mfg. Avg. Wkly. Hours	41.8	40.6	42.3	-1	Fin., Ins. & Real. Est.	98	97	91	+8
Mfg. Avg. Wkly. Earn. - $	364	359	321	+13	Trans. Com. & Pub. Util.	100	100	94	+7

NOTES: All labor force data are from Bureau of Labor Statistics reports supplied by state agencies.
       Only the unemployment rate data are seasonally adjusted.
       The Southeast data represent the total of the six states.

GENERAL

	LATEST DATA	CURR PERIOD	PREV. PERIOD	YEAR AGO	ANN % CHG		AUG 1987	JULY(R) 1987	AUG 1986	ANN % CHG
UNITED STATES										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	3,589.7	3,529.7	3403.6	+ 5	Prices Rec'd by Farmers				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Index (1977=100)	125	128	125	0
Plane Pass. Arr. (thous.,		N.A.	N.A.	N.A.		Broiler Placements (thous.)	88,006	89,586	81,213	+ 8
Petroleum Prod. (thous.)	JUL	8,203.5	8,358.9	8,809.9	- 7	Calf Prices ($ per cwt.)	81.60	80.30	61.10	+34
Consumer Price Index						Broiler Prices (¢ per lb.)	31.60	28.10	45.90	-31
1967=100	AUG	342.7	340.8	328.6	+ 5	Soybean Prices ($ per bu.)	4.95	5.25	4.98	- 1
Kilowatt Hours - mils.	JUN	207.8	188.9	196.0	+ 6	Broiler Feed Cost ($ per ton)	(Q3)193	(Q2)183	(Q3)190	+ 2
SOUTHEAST										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	436.8	428.9	419.2	+ 4	Prices Rec'd by Farmers				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Index (1977=100)	115	114	122	- 6
Plane Pass. Arr. (thous.)	JUL	6,115.9	5,715.9	5,561.7	+10	Broiler Placements (thous.)	36,789	37,388	34,450	+ 7
Petroleum Prod. (thous.)	JUL	1,421.0	1,423.0	1,412.0	+ 1	Calf Prices ($ per cwt.)	81.30	79.28	59.04	+38
Consumer Price Index						Broiler Prices (¢ per lb.)	30.31	26.28	45.13	-37
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.12	5.33	5.13	- 0
Kilowatt Hours - mils.	JUN	35.1	31.4	34.2	+ 3	Broiler Feed Cost ($ per ton)	(Q3)181	(Q2)173	(Q3)184	- 2
ALABAMA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	45.9	45.2	44.8	+ 2	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JUN., JUN.	832		854	- 3
Plane Pass. Arr. (thous.)	JUL	195.2	175.8	159.0	+23	Broiler Placements (thous.)	12,802	13,024	11,911	+ 7
Petroleum Prod. (thous.)	JUL	56.0	56.0	59.0	- 5	Calf Prices ($ per cwt.)	77.60	78.00	57.70	+34
Consumer Price Index						Broiler Prices (¢ per lb.)	31.00	25.00	43.00	-28
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.05	5.29	5.17	- 2
Kilowatt Hours - mils.	JUN	4.9	4.5	4.5	+ 9	Broiler Feed Cost ($ per ton)	(Q3)185	(Q2)177	(Q3)189	- 2
FLORIDA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	171.6	169.2	163.6	+ 5	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.						Dates: JUN., JUN.	3,298		3,092	+ 7
Plane Pass. Arr. (thous.)	JUL	2,929.8	2,639.6	2,677.6	+ 9	Broiler Placements (thous.)	2,233	2,430	2,139	+ 4
Petroleum Prod. (thous.)	JUL	22.0	22.0	29.0	-24	Calf Prices ($ per cwt.)	86.40	83.70	61.40	+41
Consumer Price Index	JUL	MAY	JUL			Broiler Prices (¢ per lb.)	30.00	25.50	46.00	-35
1977=100 MIAMI		180.5	179.1	171.2	+ 5	Soybean Prices ($ per bu.)	5.05	5.29	5.17	- 2
Kilowatt Hours - mils.	JUN	10.9	9.3	10.1	+ 8	Broiler Feed Cost ($ per ton)	185	177	189	- 2
GEORGIA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	83.6	82.2	79.4	+ 5	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates:JUN., JUN.	1,133		1,223	- 7
Plane Pass. Arr. (thous.)	JUL	2,229.8	2,177.7	2,086.8	+ 7	Broiler Placements (thous.)	14,800	14,951	13,854	+ 7
Petroleum Prod. (thous.)		N.A.	N.A.	N.A.		Calf Prices ($ per cwt.)	79.00	76.90	57.20	+38
Consumer Price Index						Broiler Prices (¢ per lb.)	29.00	25.50	46.00	-37
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	4.97	5.15	5.11	- 3
Kilowatt Hours - mils.	JUN	6.3	5.6	6.2	+ 2	Broiler Feed Cost ($ per ton)	185	177	189	- 2
LOUISIANA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	50.3	49.4	50.8	- 1	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JUN., JUN.	422		483	-13
Plane Pass. Arr. (thous.)	JUL	329.4	304.3	309.0	+ 7	Broiler Placements (thous.)	N.A.		N.A.	
Petroleum Prod. (thous.)	JUL	1,265.0	1,267.0	1,240.0	+ 2	Calf Prices ($ per cwt.)	84.00	82.20	61.40	+37
Consumer Price Index						Broiler Prices (¢ per lb.)	31.50	29.30	47.00	-33
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.18	5.49	5.32	- 3
Kilowatt Hours - mils.	JUN	5.4	4.7	5.4	0	Broiler Feed Cost ($ per ton)	165	159	169	- 2
MISSISSIPPI										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	26.0	25.0	24.9	+ 4	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates:JUN., JUN.	562		704	-20
Plane Pass. Arr. (thous.)	JUL	50.7	47.3	43.4	+17	Broiler Placements (thous.)	6,951	6,982	6,547	+ 6
Petroleum Prod. (thous.)	JUL	78.0	78.0	84.0	- 7	Calf Prices ($ per cwt.)	81.20	80.60	60.40	+34
Consumer Price Index						Broiler Prices (¢ per lb.)	31.50	29.30	46.30	-32
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.09	5.24	4.89	+ 4
Kilowatt Hours - mils.	JUN	2.4	2.1	2.4	0	Broiler Feed Cost ($ per ton)	165	159	169	- 2
TENNESSEE										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	59.4	57.9	55.7	+ 7	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates:JUN., JUN.	772		753	+ 3
Plane Pass. Arr. (thous.)	JUL	381.0	371.2	286.0	+33	Broiler Placements (thous.)	N.A.		N.A.	
Petroleum Prod. (thous.)		N.A.	N.A.	N.A.		Calf Prices ($ per cwt.)	79.70	74.90	56.50	+41
Consumer Price Index						Broiler Prices (¢ per lb.)	30.00	26.80	44.50	-33
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.24	5.42	5.24	0
Kilowatt Hours - mils.	JUN	5.2	5.2	5.6	- 7	Broiler Feed Cost ($ per ton)	208	205	205	+ 1

NOTES: Personal Income data supplied by U. S. Department of Commerce. Taxable Sales are reported as a 12-month cumulative total. Plane Passenger Arrivals are collected from 26 airports. Petroleum Production data supplied by U. S. Bureau of Mines. Consumer Price Index data supplied by Bureau of Labor Statistics. Agriculture data supplied by U. S. Department of Agriculture. Farm Cash Receipts data are reported as cumulative for the calendar year through the month shown. Broiler placements are an average weekly rate. The Southeast data represent the total of the six states. N. A. = not available. The annual percent change calculation is based on most recent data over prior year. R = revised.

	LATEST DATA	CURR PERIOD	PREV PERIOD	YEAR AGO	ANN % CHG		SEPT 1987	AUG(R.) 1987	SEPT 1986	ANN % CHG
UNITED STATES										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	3,589.7	3,529.7	3,430.6	+ 5	Prices Rec'd by Farmers				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Index (1977=100)	129	127	122	+ 6
Plane Pass. Arr. (thous.)		N.A.	N.A.	N.A.		Broiler Placements (thous.)	86,469	88,006	80,839	+ 7
Petroleum Prod. (thous.)	AUG	8,155.3	8,203.5	8,653.1	- 6	Calf Prices ($ per cwt.)	86.00	82.30	64.10	+34
Consumer Price Index						Broiler Prices (¢ per lb.)	28.50	31.60	37.80	-25
1967=100	SEPT	344.4	342.7	330.2	+ 4	Soybean Prices ($ per bu.)	5.00	5.02	4.74	+ 5
Kilowatt Hours - mils.	JUL	231.3	207.8	217.8	+ 6	Broiler Feed Cost ($ per ton)	(Q3)193	(Q2)183	(Q3)190	+ 2
SOUTHEAST										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	436.8	428.9	419.2	+ 4	Prices Rec'd by Farmers				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Index (1977=100)	120	115	118	+ 2
Plane Pass. Arr. (thous.)	AUG	5,979.8	6,115.9	5,805.3	+ 3	Broiler Placements (thous.)	36,117	36,789	34,639	+ 4
Petroleum Prod. (thous.)	AUG	1,411.0	1,421.0	1,427.0	- 1	Calf Prices ($ per cwt.)	84.50	81.39	61.16	+38
Consumer Price Index						Broiler Prices (¢ per lb.)	27.27	30.30	36.78	-26
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.21	5.28	4.76	+ 9
Kilowatt Hours - mils.	JUL	40.2	35.1	38.2	+ 5	Broiler Feed Cost ($ per ton)	(Q3)181	(Q2)173	(Q3)184	- 2
ALABAMA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	45.9	45.2	44.8	+ 2	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JULY, JULY	972		1,005	- 3
Plane Pass. Arr. (thous.)	AUG	186.5	195.2	159.9	+17	Broiler Placements (thous.)	12,260	12,802	12,196	+ 1
Petroleum Prod. (thous.)	AUG	56.0	56.0	59.0	- 4	Calf Prices ($ per cwt.)	83.10	79.40	60.30	+38
Consumer Price Index						Broiler Prices (¢ per lb.)	26.50	31.00	35.00	-24
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.24	5.38	5.02	+ 4
Kilowatt Hours - mils.	JUL	5.5	4.9	5.1	+ 8	Broiler Feed Cost ($ per ton)	185	177	189	- 2
FLORIDA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	171.6	169.2	163.6	+ 5	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.						Dates: JULY, JULY	3,312		3,339	- 1
Plane Pass. Arr. (thous.)	AUG	2,940.3	2,929.9	2,806.4	+ 5	Broiler Placements (thous.)	2,296	2,233	2,041	+12
Petroleum Prod. (thous.)	AUG	22.0	22.0	29.0	-24	Calf Prices ($ per cwt.)	84.90	84.70	64.10	+32
Consumer Price Index	SEPT	JUL	SEPT			Broiler Prices (¢ per lb.)	27.50	30.50	37.00	-26
1977=100 MIAMI		181.3	180.5	174.3	+ 4	Soybean Prices ($ per bu.)	5.05	5.05	5.02	+ 0
Kilowatt Hours - mils.	JUL	12.4	10.9	10.9	+14	Broiler Feed Cost ($ per ton)	185	177	189	- 2
GEORGIA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	83.6	82.2	79.4	+ 5	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JULY, JULY	1,308		1,453	-10
Plane Pass. Arr. (thous.)	AUG	2,092.5	2,229.8	2,182.5	- 4	Broiler Placements (thous.)	14,686	14,800	13,969	+ 5
Petroleum Prod. (thous.)		N.A.	N.A.	N.A.		Calf Prices ($ per cwt.)	81.30	77.30	58.00	+40
Consumer Price Index						Broiler Prices (¢ per lb.)	27.00	29.00	36.00	-25
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.05	4.92	4.81	+ 5
Kilowatt Hours - mils.	JUL	7.1	6.3	7.0	+ 1	Broiler Feed Cost ($ per ton)	185	177	189	- 2
LOUISIANA										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	50.3	49.4	50.8	- 1	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JULY, JULY	480		542	-11
Plane Pass. Arr. (thous.)	AUG	342.1	329.3	304.0	+13	Broiler Placements (thous.)	N.A.	N.A.	N.A.	
Petroleum Prod. (thous.)	AUG	1,255.0	1,265.0	1,255.0	0	Calf Prices ($ per cwt.)	87.50	83.40	61.70	+42
Consumer Price Index						Broiler Prices (¢ per lb.)	27.50	30.50	37.00	-26
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.31	5.49	4.46	+19
Kilowatt Hours - mils.	JUL	5.9	5.4	5.9	0	Broiler Feed Cost ($ per ton)	165	159	169	- 2
MISSISSIPPI										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	26.0	25.0	24.9	+ 4	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JULY, JULY	644		780	-17
Plane Pass. Arr. (thous.)	AUG	47.8	50.8	46.1	+ 4	Broiler Placements (thous.)	6,876	6,951	6,433	+ 7
Petroleum Prod. (thous.)	AUG	78.0	78.0	84.0	- 7	Calf Prices ($ per cwt.)	88.00	84.60	63.10	+39
Consumer Price Index						Broiler Prices (¢ per lb.)	28.90	31.50	41.30	-30
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.21	5.31	4.82	+ 8
Kilowatt Hours - mils.	JUL	2.8	2.4	2.8	0	Broiler Feed Cost ($ per ton)	165	159	169	- 2
TENNESSEE										
Personal Income						Agriculture				
($ bil. - SAAR)	Q1	59.4	57.9	55.7	+ 7	Farm Cash Receipts - $ mil.				
Taxable Sales - $ bil.		N.A.	N.A.	N.A.		Dates: JULY, JULY	908		862	+ 5
Plane Pass. Arr. (thous.)	AUG	370.6	380.9	306.4	+21	Broiler Placements (thous.)	N.A.	N.A.	N.A.	
Petroleum Prod. (thous.)		N.A.	N.A.	N.A.		Calf Prices ($ per cwt.)	82.40	78.60	59.20	+39
Consumer Price Index						Broiler Prices (¢ per lb.)	27.50	30.50	35.50	-23
1967=100		N.A.	N.A.	N.A.		Soybean Prices ($ per bu.)	5.17	5.18	4.79	+ 8
Kilowatt Hours - mils.	JUL	6.5	5.2	6.5	0	Broiler Feed Cost ($ per ton)	208	205	205	+ 1

NOTES: Personal Income data supplied by U. S. Department of Commerce. Taxable Sales are reported as a 12-month cumulative total. Plane Passenger Arrivals are collected from 26 airports. Petroleum Production data supplied by U. S. Bureau of Mines. Consumer Price Index data supplied by Bureau of Labor Statistics. Agriculture data supplied by U. S. Department of Agriculture. Farm Cash Receipts data are reported as cumulative for the calendar year through the month shown. Broiler placements are an average weekly rate. The Southeast data represent the total of the six states. N. A. = not available. The annual percent change calculation is based on most recent data over prior year. R = revised.

CONSTRUCTION

	SEP 1987	AUG 1987	SEP 1986	ANN % CHG		SEP 1987	AUG 1987	SEP 1986	ANN % CHG
12-month cumulative rate									
UNITED STATES									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	47,458	47,265	53,213	-11	Value - $ Mil.	96,311	96,711	92,398	+4
Industrial Bldgs.	7,828	8,032	8,696	-10	Residential Permits - Thous.				
Offices	13,883	13,715	14,955	-7	Single-family units	1,051.0	1,057.2	1,052.0	-0
Stores	12,565	12,450	11,939	+5	Multifamily units	540.0	543.2	711.6	-24
Hospitals	2,424	2,425	2,478	-2	Total Building Permits				
Schools	1,053	1,070	1,171	-10	Value - $ Mil.	143,770	143,976	145,611	-1
SOUTHEAST									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	7,705	7,722	8,596	-10	Value - $ Mil.	15,962	15,909	15,823	+1
Industrial Bldgs.	968	993	1,105	-12	Residential Permits - Thous.				
Offices	1,883	1,871	2,172	-13	Single-family units	206.2	206.2	205.8	+0
Stores	2,477	2,474	2,304	+8	Multifamily units	115.6	116.7	150.4	-23
Hospitals	412	397	396	+4	Total Building Permits				
Schools	171	174	145	+18	Value - $ Mil.	23,666	23,631	24,419	-3
ALABAMA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	525	545	574	-9	Value - $ Mil.	645	656	663	-3
Industrial Bldgs.	50	52	62	-20	Residential Permits - Thous.				
Offices	161	164	142	+13	Single-family units	10.8	10.9	10.8	0
Stores	186	180	158	+18	Multifamily units	4.2	4.5	8.7	-52
Hospitals	13	16	24	-47	Total Building Permits				
Schools	19	26	20	-2	Value - $ Mil.	1,170	1,200	1,237	-5
FLORIDA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	3,777	3,740	4,314	-12	Value - $ Mil.	9,141	9,073	8,687	+5
Industrial Bldgs.	392	399	453	-13	Residential Permits - Thous.				
Offices	847	837	1,093	-23	Single-family units	111.6	111.6	106.0	+6
Stores	1,156	1,147	1,195	-3	Multifamily units	80.1	80.2	93.4	-14
Hospitals	296	289	218	+36	Total Building Permits				
Schools	39	39	40	-3	Value - $ Mil.	12,918	12,813	13,001	-1
GEORGIA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	1,747	1,748	1,816	-4	Value - $ Mil.	3,583	3,573	3,722	-4
Industrial Bldgs.	251	267	355	-29	Residential Permits - Thous.				
Offices	505	496	387	+30	Single-family units	48.5	48.3	51.7	-6
Stores	579	568	455	+27	Multifamily units	18.9	19.0	26.4	-28
Hospitals	17	17	38	-56	Total Building Permits				
Schools	69	65	37	+87	Value - $ Mil.	5,330	5,321	5,539	-4
LOUISIANA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	440	465	648	-32	Value - $ Mil.	434	454	623	-30
Industrial Bldgs.	36	40	26	+35	Residential Permits - Thous.				
Offices	96	94	210	-54	Single-family units	6.9	7.0	9.4	-27
Stores	169	179	165	+2	Multifamily units	0.7	1.4	3.2	-78
Hospitals	21	16	41	-50	Total Building Permits				
Schools	25	26	31	-20	Value - $ Mil.	874	920	1,271	-31
MISSISSIPPI									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	234	238	258	-9	Value - $ Mil.	302	308	366	-17
Industrial Bldgs.	29	28.6	25.3	+15	Residential Permits - Thous.				
Offices	56	61	75	-25	Single-family units	5.1	5.1	5.8	-12
Stores	76	75	79	-5	Multifamily units	1.1	1.2	3.0	-63
Hospitals	17	17	12	+48	Total Building Permits				
Schools	7	7	6	+13	Value - $ Mil.	536	546	624	-14
TENNESSEE									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	982	986	986	+0	Value - $ Mil.	1,856	1,845	1,761	+5
Industrial Bldgs.	210	209	184	+14	Residential Permits - Thous.				
Offices	217	219	264	-18	Single-family units	23.3	23.3	22.2	+5
Stores	312	325	252	+24	Multifamily units	10.6	10.4	15.7	-32
Hospitals	48	42	62	-23	Total Building Permits				
Schools	12	11	11	+10	Value - $ Mil.	2,837	2,831	2,748	+3

NOTES: Data supplied by the U.S. Bureau of the Census, Housing Units Authorized by Building Permits and Public Contracts, C-40. Nonresidential data excludes the cost of construction for publicly owned buildings. The southeast data represents the total of the six states.

CONSTRUCTION

12-month cumulative rate

	OCT 1987	SEP 1987	OCT 1986	ANN. % CHG		OCT 1987	SEP 1987	OCT 1986	ANN. % CHG
UNITED STATES									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	50,873	47,458	50,844	+0	Value - $ Mil.	95,926	96,311	93,044	+3
Industrial Bldgs.	7,650	7,828	8,572	-11	Residential Permits - Thous.				
Offices	13,863	13,883	14,631	-5	Single-family units	1,041.6	1,051.0	1,055.6	-1
Stores	12,664	12,565	12,007	+5	Multifamily units	528.5	540.0	695.5	-24
Hospitals	2,423	2,424	2,542	-5	Total Building Permits				
Schools	1,033	1,053	1,227	-16	Value - $ Mil.	143,462	143,770	143,888	-0
SOUTHEAST									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	7,766	7,705	8,215	-5	Value - $ Mil.	15,788	15,962	15,933	-1
Industrial Bldgs.	925	968	1,095	-16	Residential Permits - Thous.				
Offices	1,883	1,883	2,014	-9	Single-family units	204.6	206.2	205.5	-0
Stores	2,311	2,477	2,327	-1	Multifamily units	111.5	115.6	148.9	-25
Hospitals	585	412	394	+48	Total Building Permits				
Schools	265	171	158	+68	Value - $ Mil.	23,524	23,666	24,148	-3
ALABAMA									~
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	532	525	564	-6	Value - $ Mil.	642	645	668	-4
Industrial Bldgs.	40.7	49.7	66.3	-39	Residential Permits - Thous.				
Offices	182	161	136	+34	Single-family units	10.6	10.8	10.9	-3
Stores	174	186	170	+2	Multifamily units	4.2	4.2	8.4	-50
Hospitals	14	13	23	-39	Total Building Permits				
Schools	22	19	19	+15	Value - $ Mil.	1,175	1,170	1,232	-5
FLORIDA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	3,792	3,777	4,065	-7	Value - $ Mil.	9,103	9,141	8,685	+5
Industrial Bldgs.	382	392	425	-10	Residential Permits - Thous.				
Offices	782	847	1,005	-22	Single-family units	111.4	111.6	105.1	+6
Stores	1,083	1,156	1,154	-6	Multifamily units	78.3	80.1	93.4	-16
Hospitals	301	296	224	+34	Total Building Permits				
Schools	97	39	43	+125	Value - $ Mil.	12,895	12,918	12,750	+1
GEORGIA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	1,785	1,747	1,788	-0	Value - $ Mil.	3,530	3,583	3,794	-7
Industrial Bldgs.	251	251	341	-26	Residential Permits - Thous.				
Offices	496	505	394	+26	Single-family units	48.0	48.5	51.9	-8
Stores	529	579	484	+9	Multifamily units	17.9	18.9	26.4	-32
Hospitals	122	17	32	+286	Total Building Permits				
Schools	98	69	41	+137	Value - $ Mil.	5,316	5,330	5,582	-5
LOUISIANA									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	405	440	592	-32	Value - $ Mil.	433	434	609	-29
Industrial Bldgs.	16	36	45	-65	Residential Permits - Thous.				
Offices	88	96	174	-49	Single-family units	7.0	6.9	9.1	-23
Stores	156	169	155	+1	Multifamily units	0.7	0.7	3.1	-77
Hospitals	87	21	41	+113	Total Building Permits				
Schools	20	25	36	-45	Value - $ Mil.	838	874	1,201	-30
MISSISSIPPI									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	231	234	253	-9	Value - $ Mil.	300	302	365	-18
Industrial Bldgs.	29	29	27	+9	Residential Permits - Thous.				
Offices	53	56	65	-18	Single-family units	5.0	5.1	5.9	-15
Stores	70	76	81	-14	Multifamily units	1.1	1.1	2.8	-61
Hospitals	22	17	16	+37	Total Building Permits				
Schools	11	7	7	+51	Value - $ Mil.	531	536	618	-14
TENNESSEE									
Nonresidential Building Permits - $ Mil.					Residential Building Permits				
Total Nonresidential	1,021	982	954	+7	Value - $ Mil.	1,779	1,856	1,812	-2
Industrial Bldgs.	207	210	191	+8	Residential Permits - Thous.				
Offices	231	217	241	-4	Single-family units	22.6	23.3	22.6	0
Stores	298	312	284	+5	Multifamily units	9.3	10.6	14.8	-37
Hospitals	40	48	58	-31	Total Building Permits				
Schools	17	12	11	+52	Value - $ Mil.	2,770	2,837	2,766	+0

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Federal Reserve Bank of St. Louis

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Federal Reserve Bank of Atlanta
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Atlanta, Georgia 30303-2713

Address Correction Requested