

FEDERAL RESERVE BANK OF KANSAS CITY

# Economic Review



July/August 1990

Processing Food in Farm States: An Economic  
Development Strategy for the 1990s

Economic Development Programs  
For States in the 1990s

The Role of Government in Promoting  
Homeownership: The U.S. Experience

The Truth about Junk Bonds



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- Processing Food in Farm States: An Economic  
Development Strategy for the 1990s** 5  
By Alan D. Barkema, Mark Dräbenstott, and Julie Stanley
- Economic Development Programs  
For States in the 1990s** 25  
By Tim R. Smith and William F. Fox
- The Role of Government in Promoting  
Homeownership: The U.S. Experience** 37  
By Gordon H. Sellon, Jr.
- The Truth about Junk Bonds** 45  
By Sean Beckett

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Federal Reserve Bank of Kansas City

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# Contents

July/August 1990

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## **Processing Food in Farm States: An Economic Development Strategy for the 1990s** **5**

By Alan D. Barkema, Mark Drabenstott, and Julie Stanley

Many farm states have yet to replace jobs lost in the deep farm recession in the 1980s, despite the last three years of strong farm recovery. Convinced that farm production alone is no longer a sufficient engine for farm state economies, state policymakers believe turning farm products into food products will be a key to stronger economic growth in the 1990s.

Farm states face an uphill battle in becoming major food processing states because they are removed from the nation's population centers. Nonetheless, a strategy of developing food products suited to farm output and consumer markets could create jobs and boost incomes.

Barkema, Drabenstott, and Stanley examine how farm states can encourage growth in their food processing industries. The authors conclude that a successful food processing strategy will depend on whether farm states can use new technologies to help offset their location disadvantage.

## **Economic Development Programs for States in the 1990s** **25**

By Tim R. Smith and William F. Fox

State economic development programs have traditionally tried to create jobs by recruiting large manufacturing businesses from other states or countries. Notable examples in the 1980s were the Nissan and Saturn manufacturing plants attracted by Tennessee and the Toyota plant won by Kentucky.

The overall effectiveness of traditional recruitment programs in creating jobs is increasingly being called into question, however. Some states have already begun to move their economic development programs away from recruiting manufacturers toward encouraging business startups, fostering expansion of existing businesses, and preventing business failures.

Smith and Fox examine whether traditional recruitment programs are the best strategy for creating jobs. They conclude that states stand a better chance of boosting employment if they improve the economic environment for all businesses.

## **The Role of Government in Promoting Homeownership: The U.S. Experience** **37**

By Gordon H. Sellon, Jr.

Housing finance reform is an essential component of the economic changes taking place in Central and Eastern Europe. An important part of housing reform is the balance between government and

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the market in housing finance. An examination of the government's role in U.S. housing finance can shed some light on the proper scope for government in housing finance.

The traditional view is that the government should promote homeownership because the market may not produce enough homeownership. Sellon believes, however, that the primary reason for the government's large role in U.S. housing finance is to offset a highly inefficient and artificial structure of financial regulation. He argues that this regulatory system is biased against housing. With a more rational system of financial regulation, Sellon feels that the government could play a smaller role in housing finance.

Sellon examines the rationale for the government's role in promoting homeownership in the United States and describes the main U.S. government policies. He concludes that before Central and Eastern European countries define the government's role in housing finance, they must first set up a financial system that promotes competitive forces and the free flow of financial capital.

## **The Truth about Junk Bonds**

**45**

By Sean Beckett

For years, some critics have blamed junk bonds for a host of financial market ills. According to these critics, junk bonds fueled the merger mania of the 1980s, caused rapid growth in corporate debt in recent years, and increased financial market volatility.

If these accusations are accurate, it may be time for laws or regulations to restrict the use of junk bonds. But if the charges are not accurate, restricting the use of junk bonds would unnecessarily increase the cost of funds for many businesses.

Beckett examines whether junk bonds should be blamed for the rise in corporate mergers, corporate debt, and financial market volatility. He finds that the evidence does not support these three charges against junk bonds.

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# Processing Food in Farm States: An Economic Development Strategy for the 1990s

By Alan D. Barkema, Mark Drabenstott, and Julie Stanley

Officials in farm-dependent states are turning to the food processing industry as a critical source of economic growth in the 1990s. Many of these farm states—found mostly in the western Corn Belt and northern Great Plains—have yet to replace jobs lost in the deep farm recession in the 1980s, despite three years of strong farm recovery more recently. The 1980s farm downturn is strong evidence that farm production alone is no longer a sufficient engine for farm state economies. Consequently, turning farm products into food products is viewed as a key to stronger economic growth in the 1990s.

What can farm states do to encourage food processing activity in the 1990s? They face an uphill battle in expanding food manufacturing, but a strategy of developing food products suited to farm output and consumer markets will pay some dividends. The first section of this article identifies seven farm states with the greatest

potential to expand food processing activity: Arkansas, Idaho, Iowa, Kansas, Minnesota, Nebraska, and Wisconsin. The second section examines how these states can develop food products to encourage growth in food processing and identifies four products best suited to the seven states. The third section considers the outlook for these four food products in the 1990s. The article concludes that a successful food processing strategy will depend on investments in emerging food technologies that could offset the distance separating the farm states from major consumer markets.

## **I. Farm States with Food Processing Potential**

All farm states are interested in developing more food processing, but not all share the same prospects for success. Comparing the location of farm and food production is a useful first step in assessing development prospects. All farm states face a location disadvantage—they are a long way from major population centers. Nevertheless, farm states that are closer to major popu-

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Table 1  
**Average Hourly Earnings in Various Industries, December 1989**

<u>Industry</u>	<u>Average hourly earnings</u>
Manufacturing	\$10.66
Durable goods	\$11.18
Electrical equipment	10.52
Motor vehicles and equipment	14.50
Nondurable goods	9.95
Food and kindred products	9.47
Beverages	13.36
Grain mill products	11.26
Bakery products	10.69
Dairy products	10.34
Fats and oils	9.94
Sugar and confectionery products	9.61
Preserved fruits and vegetables	8.99
Meat products	7.82
Textile mill products	7.86
Apparel	6.45
Paper and allied products	12.11
Printing and publishing	11.07
Leather and leather products	6.73
Transportation and public utilities	12.70
Wholesale trade	10.62
Retail trade	6.66
Finance, insurance, and real estate	9.76

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, February 1990.

lation centers or have a base of food processing companies already established are more likely to succeed in expanding the food industry.

### **Why is food processing important to farm states?**

Farm states have linked their economic futures to food processing because it can boost economic activity arising from their abundant farm production. Food processing is a manufacturing industry that inherently increases the economic activity attached to farm products. It combines labor, machinery, energy, and technology to convert bulky farm products into packaged, palatable foodstuffs (Connor 1988, p. xxiii). Thus, food processing allows farm state economies to increase employment and income before farm products are shipped to distant markets.

The food processing industry is a big industry to target. Food processing shipments totaled \$388.4 billion in 1989, ranking first among the 20 key types of U.S. manufacturing during the year. The industry employs nearly 1.7 million people, making it the fourth-biggest manufacturing jobs category, after electrical machinery, nonelectrical machinery, and transportation equipment (Bureau of Economic Analysis 1990).

Targeting the food processing industry is desirable for farm states because the industry is so stable. The economies of farm states were highly cyclical in the 1980s. Historically, food manufacturing has been very steady and much less cyclical than many other types of manufacturing.<sup>1</sup>

Food processing jobs also generally pay attractive wages and thus have a welcome impact on state incomes. At \$9.47 an hour, food wages are not the highest among manufacturing industries, yet they are high relative to other types of nondurable manufacturing often found in rural areas—such as textiles, apparel, and leather goods (Table 1). Even so, wages paid in the food

industry range widely—from \$7.82 an hour in meat products to \$13.36 an hour in beverage products.

### **Which states depend on farm production?**

The first step in identifying states where a food processing strategy will be important is to define farm states. There is no accepted definition of a farm state in common usage. For the purposes of this article, a farm state is a state where farm output is significant to its overall economy. States that depend on agriculture have a sizable stake in adding economic value to their farm output.<sup>2</sup>

Specifically, farm states can be defined as states where farm output as a share of gross state output (GSP) is at least twice the national average.<sup>3</sup> Nationally, farm output is 2.2 percent of the total output of goods and services. The farm share of GSP is at least double the national average in just ten states: South Dakota, North Dakota, Nebraska, Iowa, Idaho, Kansas, Arkansas, Montana, Minnesota, and Wisconsin (Chart 1 and Table 2).

These ten farm states can expect stiff competition for the nation's food processing activity. The primary competition will come from other states that produce a large volume of farm products. The ten biggest include only half of the ten farm states—Iowa, Minnesota, Nebraska, Wisconsin, and Kansas. The five other states that lead the nation in agricultural production have large, diversified economies including strong food processing industries. The food processing industries in these larger, more diversified states are the primary competition for food processing initiatives in the farm states.<sup>4</sup>

### **Where is food processed?**

How successful can the ten farm states be in developing more food processing? One way to begin answering this question is to compare

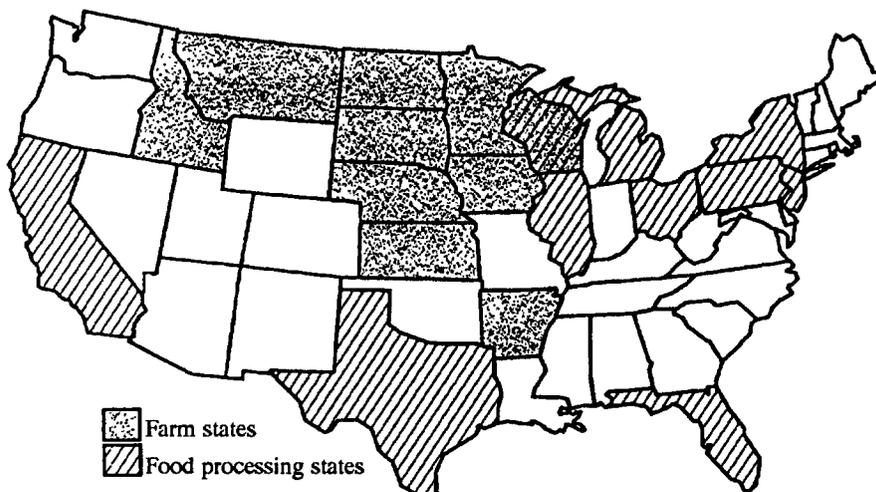
Table 2  
**The Importance of Farm Production in the 50 States, 1984-86 Average**

Farm share of gross state product					
Rank	State	Share (percent)	Rank	State	Share (percent)
1	South Dakota	17.48	26	Delaware	2.17
2	North Dakota	14.51	27	Illinois	2.06
3	Nebraska	13.85	28	New Mexico	2.01
4	Iowa	11.25	29	Arizona	1.93
5	Idaho	10.11	30	California	1.88
6	Kansas	6.77	31	Texas	1.77
7	Arkansas	6.34	32	Wyoming	1.71
8	Montana	5.55	33	Utah	1.63
9	Minnesota	5.02	34	Maine	1.51
10	Wisconsin	4.46	35	South Carolina	1.41
11	Kentucky	4.18	36	Ohio	1.37
12	Mississippi	4.14	37	Michigan	1.34
13	Oregon	3.54	38	Pennsylvania	1.22
14	Oklahoma	3.26	39	Virginia	1.16
15	Vermont	3.15	40	Louisiana	1.06
16	Indiana	3.01	41	Maryland	.93
17	Washington	2.94	42	Nevada	.74
18	Missouri	2.82	43	West Virginia	.70
19	North Carolina	2.71	44	New Hampshire	.52
20	Colorado	2.59	45	New York	.50
21	Alabama	2.54	46	Rhode Island	.45
22	Hawaii	2.44	47	Connecticut	.42
23	Florida	2.29	48	New Jersey	.39
24	Tennessee	2.24	49	Massachusetts	.30
25	Georgia	2.18	50	Alaska	.11
				National average	2.17

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, May 1988, and unpublished data.

Chart 1

## The Leading Farm and Food Processing States



Source: See Table 3.

the location of farm production and food production. Are the farm states already processing a lot of food? If not, are they near regions that do? The answers to these questions will describe the amount of food processing activity already occurring in the farm states and reveal the major source of competition the farm states face in further developing their food processing industries.

In general, farm states account for a relatively small share of the nation's total food processing output (Table 3). Some overlap exists in the location of the nation's farm production and food processing activities, but the overlap is relatively small.

The nation's food processing activity is con-

centrated in two regions, the Sun Belt and the industrial states spanning the Great Lakes and the Northeast. As shown in Chart 1, the top ten food processing states include three Sun Belt states (California, Florida, and Texas) and seven industrial states in the Great Lakes and Northeast regions (Wisconsin, Illinois, Michigan, Pennsylvania, New York, and New Jersey). These seven industrial states form a major food processing belt that accounts for more than a third of the nation's food processing activity.

Food processing appears to have located in the Sun Belt and Northeast primarily because these regions are close to the nation's major population centers. Nine of the ten leading food

Table 3

**Population and Food Processing Activity in the Major Food Processing States and the Farm States**

Major food processing states	Population <sup>1</sup>		Share of U.S. food processing output <sup>2</sup>		Food processing share of Gross State Product <sup>2</sup>	
	Thousands	(Rank)	Percent	(Rank)	Percent	(Rank)
California	29,063	(1)	11.90	(1)	1.67	(22)
Illinois	11,658	(6)	7.32	(2)	2.54	(10)
New York	17,950	(2)	5.90	(3)	1.23	(33)
Texas	16,991	(3)	5.86	(4)	1.31	(31)
Pennsylvania	12,040	(5)	5.34	(5)	2.12	(16)
Ohio	10,907	(7)	4.72	(6)	1.92	(19)
New Jersey	7,736	(9)	4.38	(7)	2.14	(15)
Wisconsin	4,867	(17)	3.56	(8)	3.27	(6)
Michigan	9,273	(8)	3.37	(9)	1.60	(24)
Florida	12,671	(4)	3.37	(10)	1.45	(30)
<b>Farm states</b>						
Wisconsin	4,867	(17)	3.56	(8)	3.27	(6)
Iowa	2,840	(29)	2.57	(13)	4.04	(2)
Minnesota	4,353	(21)	2.56	(14)	2.42	(13)
Nebraska	1,611	(36)	1.49	(22)	4.01	(3)
Kansas	2,513	(32)	1.48	(23)	2.50	(11)
Arkansas	2,406	(33)	1.47	(24)	3.35	(5)
Idaho	1,014	(42)	0.80	(32)	4.31	(1)
South Dakota	715	(45)	0.35	(39)	2.60	(9)
North Dakota	660	(47)	0.23	(42)	1.45	(29)
Montana	806	(44)	0.13	(48)	0.77	(42)

<sup>1</sup> 1989.

<sup>2</sup> 1984-86 average.

Sources: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Population Estimates and Projections, State Population and Household Estimates: July 1, 1989* (population data); Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, May 1988, and unpublished data (Gross State Product data).

processing states—all except Wisconsin—rank among the ten most populous states in the nation. More than half of the nation's population resides in the ten leading food processing states (Table 3). Unlike the three Sun Belt states, which are leaders in both farm and food production, all of the states of the northeastern food processing belt—except Illinois—produce a comparatively small volume of farm products.

In contrast to the high concentration of food processing activity in the Northeast and Sun Belt states, such activity in the ten farm states is limited. The ten farm states account for only 15 percent of the nation's total food output. Only one of the ten farm states, Wisconsin, is among the ten leading food processing states. Food processing activity in the ten farm states generally diminishes in states further removed from the food processing belt. For example, each of the westernmost farm states—Idaho, Montana, North Dakota, and South Dakota—processes only a small fraction of the nation's food. On the other hand, the three farm states adjacent to the food processing belt—Iowa, Minnesota, and Wisconsin—are the leading food processors among the ten farm states.

The food processing industry is nonetheless a vital part of the economy in farm states. Food processing accounts for an average 1.7 percent of GSP for the 50 states as a whole. Eight of the ten farm states exceed that average by a considerable amount (Table 3). By contrast, both food processing and farm production play a relatively small role in the large, well-diversified economies of the major food processing states. The clear challenge for farm states wishing to boost food processing activity is to find ways to compete effectively with the location advantages of the major food processing states.

### **Which farm states can expand food processing?**

Which farm states appear most able to

expand food processing in the 1990s? Two criteria define a farm state's ability to expand. The first is the distance from the state to major population centers. All farm states face a location disadvantage, but some are farther from major markets than others. The second is the presence of a viable food processing base from which to grow. States that have little or no food processing already established probably have little likelihood of successfully entering the competitive, capital-intensive industry.

One indicator of a farm state's food processing base is the amount of food processed in the state compared with the amount of farm products produced there. Put another way, the ratio of farm output to food processing output in each farm state approximates how much of the state's farm output is already processed before it is shipped elsewhere. A high farm-food output ratio indicates relatively little food processing activity and points to only a small base from which to expand. Conversely, a low farm-food output ratio indicates a much stronger food processing base that can be expanded more readily. In short, farm states do not share the same capacity to expand food processing. Those with more favorable location and with a food industry base already established have better prospects to expand.

Two groups of states emerge from examining the farm-food output ratios of the farm states. All ten farm states have farm-food output ratios above the national average of 1.25 (Table 4). But of more importance, the ten states appear to fall into two groups representing high and low potential for expanding food processing. The two groupings appear consistent with the location of the states relative to population centers.

**High-potential farm states.** The seven high-potential states have relatively low farm-food output ratios and are within striking distance of major consumer markets. The farm-food output ratios range from 1.36 in Wisconsin to 3.45 in Nebraska. The range of ratios indicates a big-

Table 4

## Major Farm Products and Food Processing Industries in the Farm States

Panel A—High Potential States				
Major farm products	Farm-food output ratio	Product share of state farm cash receipts (percent) <sup>1</sup>	Major food processing industries	Industry share of state food employment (percent) <sup>2</sup>
<i>Wisconsin</i>				
	1.36			
Dairy products		60	Dairy products	32
Meat animals		20	Meat products	23
			Preserved fruits and vegetables	14
<i>Arkansas</i>				
	1.89			
Poultry and eggs		45	Meat products	62
Meat animals		13	Preserved fruits and vegetables	12
Food grains		13		
Oil crops		13		
<i>Minnesota</i>				
	2.07			
Meat animals		30	Meat products	31
Dairy products		20	Dairy products	17
Feed grains		16	Preserved fruits and vegetables	12
Oil crops		15		
<i>Idaho</i>				
	2.35			
Meat animals		29	Preserved fruits and vegetables	61
Vegetables		21		
Dairy products		13		
Food grains		10		
Feed grains		10		
<i>Kansas</i>				
	2.71			
Meat animals		62	Meat products	50
Food grains		15	Bakery products	11
Feed grains		13	Grain mill products	11
<i>Iowa</i>				
	2.78			
Meat animals		50	Meat products	50
Feed grains		22	Grain mill products	20
Oil crops		20		
<i>Nebraska</i>				
	3.45			
Meat animals		63	Meat products	56
Feed grains		22	Grain mill products	14

Table 4 - Continued

Panel B—Low-Potential States				
Major farm products	Farm-food output ratio	Product share of state farm cash receipts (percent) <sup>1</sup>	Major food processing industries	Industry share of state food employment (percent) <sup>2</sup>
<i>South Dakota</i>				
	6.73			
Meat animals		57	Meat products	63
Feed grains		13	Dairy products	16
Oil crops		10	Bakery products	10
<i>Montana</i>				
	7.20			
Meat animals		52	Meat products	15
Food grains		24	Dairy products	29
Feed grains		13	Grain mill products	16
			Bakery products	21
<i>North Dakota</i>				
	9.98			
Meat animals		26	Meat products	11
Food grains		30	Dairy products	14
Feed grains		14	Preserved fruits and vegetables	17
Oil crops		12	Sugar and confectionery products	17

<sup>1</sup> Average 1986-88.  
<sup>2</sup> 1987.  
Sources: U.S. Department of Agriculture, Economic Research Service, *Economic Indicators of the Farm Sector, State Financial Summary, 1988* (product share of state farm cash receipts); U.S. Department of Commerce, Bureau of the Census, *County Business Patterns, 1987*, various issues (industry share of state food employment).

ger food processing base in some states than others. Nevertheless, each state in the high-potential group—Wisconsin, Arkansas, Minnesota, Idaho, Kansas, Iowa, and Nebraska—has a strong food processing base from which to grow.

The seven high-potential states face different

challenges in terms of their location. Wisconsin, Minnesota, and Iowa are along the western fringe of the northeastern food processing belt. Arkansas is well-positioned to serve the Sun Belt population centers. Idaho, Kansas, and Nebraska are somewhat further removed from consumer markets. Despite their location differences, all

of the high-potential states face a distinct challenge in overcoming the high shipping costs that result from their distance to population centers.

**Low-potential farm states.** Low-potential states have a weak food processing base and are a long way from consumer markets. Farm-food output ratios in the low-potential states range from 7.0 to 10.0, significantly higher than in the high-potential states. Farm output is generally smaller in Montana, North Dakota, and South Dakota than in the other farm states. Nevertheless, farm output far outweighs food production in these northern Great Plains states. These states lack a dominant farm commodity to spark food processing development. In addition, these three sparsely populated states are a long distance from population centers, a strong negative factor for expanding food processing activity. Given the limited potential for expanding food processing in these three states, the remainder of this article will focus on the seven states with high potential for expanding their food processing industry.

## **II. The Challenge for Farm States: Developing Successful Food Products**

States with high potential for expanding their food processing industry already have a food processing base from which to grow; but how can they expand that base? The answer lies in developing successful food products. Product development is a combination of four steps: choosing, where possible, food products in growing demand; assessing the competition in food product markets; developing promising technologies; and adding value to farm state products. In brief, the farm states must target markets carefully, choosing to compete in markets where prospects for growth are bright, where competition is less concentrated, and where technological developments may open new market niches. But

these steps must be taken within the overall constraint of using the states' own farm products. This section examines the factors affecting each of the four product development steps and concludes by identifying four promising food products farm states can target to boost food processing activity.

### **Choosing growth markets**

Farm states should target food products that promise to be in growing demand. Demographic trends in the consumer population are likely to play a strong role in determining patterns of growth among various food products. By anticipating the influence of these demographic trends on patterns in food demand, farm states can improve their chances of success in expanding their food processing activity.

The major trend likely to characterize the U.S. food market in the years ahead is clear: the consumer will demand more food products offering greater convenience with high nutritional value. Spurring the demand for such food products is a changing U.S. lifestyle that will limit the time available for meal preparation. More than four-fifths of all U.S. households now have a single parent or two wage earners. Within five years, two-thirds of all households will contain just one or two persons; two-thirds of all women will be in the work force; and three-fourths of all households will own microwave ovens (U.S. Department of Commerce 1990). With meals on-the-run becoming the national norm, continued growth in the consumer's demand for convenient food products can be expected.

At the same time, consumers are becoming increasingly concerned about the nutritional value of processed food products. As a result, consumers will demand—and be willing to pay for—a growing variety of food products that provide a high level of convenience without sacrificing nutritional quality. This strong trend in consumer food demand is almost certain to play a

major role in determining prospects for growth in the food processing products of greatest importance to the farm states.

### **Assessing the competition**

Farm states are most likely to succeed by targeting food products with markets that can be entered easily. Thus, states must promote food products that can compete in a crowded national food market. Economic incentives—gains in employment and income—resulting from increased food processing activity range widely across the many food industries. Farm states can expect stiffer competition in those food industries where economic incentives are greater. Some of the food industries that offer the largest economic payoffs are already highly concentrated and thus are virtually closed to entry by the farm states. Futile efforts to enter those industries would simply deplete scarce development funds. Instead, farm state strategies should target those food industries where the probability of successfully entering the market is reasonable, even if the potential rewards are somewhat smaller.

The economic boost likely to accompany increased food processing ranges widely across food products, depending on the value added to raw farm products and the number of jobs created. Food products associated with higher levels of value added and increased employment naturally attract strong competition. Thus, farm states targeting such food products face a low probability of successful entry into these markets.<sup>5</sup> In addition, production of many high value-added products is dominated by a few large, well-entrenched firms. If farm states target those products, they must recruit branch plants of large companies. Studies show that recruiting out-of-state manufacturers is less effective than fostering indigenous businesses (Smith and Fox 1990). Processing activity in some food markets is also highly concentrated geographically. Farm states are likely to have difficulty promoting

products whose production and distribution are based elsewhere, unless ways of overcoming locational disadvantages are found. Farm states are more likely to boost activity in food industries that are more diffuse geographically, especially those industries that use locally produced farm products.

### **Developing new technologies**

Farm states should focus additional effort on emerging food technologies that offer great promise for boosting local processing activity. New methods in both production and distribution will help farm states capitalize on their abundance of raw food products, while effectively minimizing the distance from their fields to major food markets.

Emerging technologies with the greatest promise for farm states are developments in weight-reducing processes, packaging, and biotechnology. Weight-reducing processes reduce shipping costs. For example, in recent years meat packers have cut beef into frozen portions and shipped them in boxes, rather than shipping the much heavier carcasses. The development of boxed beef has helped encourage the meat packing industry to move from urban centers to the southern plains states. In the future, similar innovations in other food products could offset the distance from farm states to consumer markets.

Two other new types of packaging promise to extend product shelf life and allow shipment to distant markets. Controlled-atmosphere packaging involves placing a food product in a sealed package with low levels of oxygen and high levels of carbon dioxide to maintain freshness. Retort pouch packaging replaces the customary can or jar with a paper-foil pouch in which food is sealed and heated under pressure. The pouch packaging weighs less than conventional packaging materials, which reduces shipping costs and helps farm states overcome their locational disad-

vantage. In addition, the method leads to a high-quality product because the heating time required to ensure sterility is reduced (Labuza 1985, p. 74).

Advances in biotechnology may also open new food frontiers to farm states by developing new farm products and creating new uses for existing farm products. Genetic engineering may enable plant and animal scientists to develop crops and animals with more desirable food qualities. For example, wheat varieties may be developed with protein characteristics suited to a particular bakery product. Or, cattle may be genetically altered to reduce particular types of fat. Genetic advances such as these may not lead immediately to greater food processing activity; yet they may enhance cooperation between farm producer and food processor, a link that may lead to more economic activity in the farm states.

Biotechnology may also lead to fermentation techniques that would convert farm products into enzymes with useful properties. Worldwide, the food processing industry uses \$445 billion of enzymes in producing its products (Hopper and Lund 1990). For example, producing the artificial sweetener aspartame requires the use of an enzyme reaction. New research may find ways to produce these enzymes from current crops, enhancing the opportunity to add value to raw farm products.

### **Adding value to farm state products**

Market growth, market access, and technology will be important factors in successful food product development. But farm states must build their food processing strategies on the farm and food product strengths they already have. A readily available supply of certain farm products provides food processing industries in the farm states one competitive advantage to help offset the disadvantage of being far from consumer markets. But to take advantage of their cheap supply of farm products, compatible food prod-

ucts must be developed. Farm and food production activities differ markedly among the farm states. Nevertheless, the farm states are similar in that the food processing activity already underway in each state is based on its leading farm products (Table 4).

The seven high-potential farm states—Wisconsin, Minnesota, Arkansas, Idaho, Iowa, Kansas, and Nebraska—have successfully built strong food processing industries around a diverse set of homegrown farm products. The dairy industry is a leading industry in Wisconsin and Minnesota. Wisconsin's dairy industry generates about three-fifths of all farm product sales in the state and about a sixth of all dairy farm sales in the nation. The dairy processing industry, in turn, is Wisconsin's dominant food processing industry, employing nearly a third of the state's food processing workers.<sup>6</sup> Dairy production is also a leading industry in Minnesota's farm economy, but the state's livestock, grain, and soybean production yield a farm economy that is more diverse than that of Wisconsin. Meat and poultry dressing plants and the dairy processing industry are the leading food processing employers in the state, accounting for nearly half of the state's food processing employment.

Arkansas and Idaho are similar in that each has successfully exploited a relatively narrow food market niche. In Arkansas, broiler production generates 45 percent of the state's farm product sales. In turn, the state's huge broiler industry supports a poultry dressing and processing industry that accounts for more than 60 percent of the state's food processing employment. In Idaho, more than 60 percent of the state's food processing workers are employed in the vegetable processing industry, which is spawned by the state's substantial vegetable production.

The three remaining high-potential farm states, Iowa, Kansas, and Nebraska, produce a broad range of similar farm and food products. Huge grain and soybean crops support large livestock feeding industries, the dominant farm

enterprise in each state. Together, Iowa, Kansas, and Nebraska account for about 30 percent of the nation's livestock sales, a volume that has given rise to the region's large meat products industry. The meat products industry—primarily meat packing plants—employs at least half of all food processing workers in each of the three states. In addition to providing ample feed for livestock in these states, grain production serves as the raw material for a number of grain and bakery products. These grain processing industries are the second leading food processing employers in the three states.

In sum, the seven farm states with high potential for developing additional food processing activity have already established a base in four key industries: meat products, dairy products, preserved vegetables, and grain products. The challenge facing the farm states is determining how to unlock even more value from these homegrown farm products before they are shipped elsewhere.

### **III. Prospects for Key Food Products in the Farm States**

As farm states grapple with strategies for developing their food products, what are their prospects for succeeding in the 1990s? Put another way, when farm state officials combine all elements of food product development—growth in consumer markets, access to markets, and new technology—what is the outlook for each of the four key food products?

#### **Meat products**

Large livestock production has already allowed the farm states to establish a strong beachhead in the meat products industry. Growth in the industry will be strongly influenced by the consumer's growing appetite for convenient food products. Favoring the industry's growth are emerging packaging technologies that mesh

with growing demand for processed meat and poultry products requiring little preparation time.

The demand for all meat products has trended higher in recent years, largely due to a surge in poultry consumption. Rising poultry consumption, however, has been accompanied by a sharp drop in red meat consumption. After cresting in 1976, per capita consumption of red meat has fallen about 21 pounds (16 percent). More than offsetting the slump in demand for red meat has been a 23-pound (63 percent) surge in per capita poultry consumption (Putnam 1990).

The shift in consumption from red meat to poultry is due in part to the consumer's acceptance of the poultry industry's numerous offerings of innovative, competitively priced food products. Although the red meat industry has lagged behind in developing new product offerings, the industry has begun to add more value to its products before shipping. For example, about 86 percent of the nation's total beef production is now shipped as boxed beef (U.S. Department of Commerce 1990).

Looking ahead, the red meat industry's ability to curb the consumer's shift to poultry will depend on whether it can develop new convenience products to meet consumer demands. New packaging technologies may play a major role in determining the balance between the demand for red meat and poultry. Meat packers already ship beef and fresh turkeys to processing plants under controlled-atmosphere storage. Further innovations in controlled-atmosphere packaging might expand meat markets by extending the shelf life of meat products. Retort pouch packaging could be used for meat products, reducing weight and shipping costs relative to shipping boxed beef. Thus, further packaging innovations may allow farm states to add more value to meat products before shipping.

Favoring further development of the meat products industry in the farm states is the relative ease with which farm states can enter meat prod-

Table 5

### Characteristics of Farm State Food Processing Industries

	Four-firm concentration ratio <sup>1</sup>	Four-state concentration ratio <sup>2</sup>	Value ratio <sup>3</sup>
	(percent)	(percent)	(percent)
<i>Food and kindred products</i>	n.a.	28	39
<i>Meat products</i>	n.a.	26	21
Meatpacking plants	29	37	17
Sausages and other prepared meats	19	32	22
Poultry dressing plants	22	45	34
Poultry and egg processing	22	41	20
<i>Dairy products</i>	n.a.	35	29
Creamery butter	41	63	5
Natural and processed cheese	34	60	22
Condensed and evaporated milk	35	53	42
Ice cream and frozen desserts	22	33	27
Fluid milk	16	27	32
<i>Preserved fruits and vegetables</i>	n.a.	35	50
Canned fruits and vegetables	21	46	46
Dehydrated fruits, vegetables, and soup	42	83	41
Frozen fruits and vegetables	27	57	46
<i>Grain mill products</i>	n.a.	31	44
Flour and grain mill products	40	31	31
Cereal breakfast foods	86	55	97
Blended and prepared flour	58	43	30
Wet corn milling	74	76	36
Dog, cat, and other pet food	52	36	60
Prepared feeds	20	30	24
<i>Bakery products</i>	n.a.	31	73
Bread, cake, and related products	34	32	76
Cookies and crackers	59	40	67

<sup>1</sup> 1982.

<sup>2</sup> 1987.

<sup>3</sup> 1986 ratio of value added in processing to value of product shipments.

Sources: U.S. Department of Commerce, Bureau of the Census, *1982 Census of Manufactures, Concentration Ratios in Manufacturing* (four-firm concentration ratio); U.S. Department of Commerce, Bureau of the Census, *County Business Patterns, 1987*, various issues (four-state concentration ratio); U.S. Department of Commerce, Bureau of the Census, unpublished data (value ratio).

uct markets. This article uses two gauges of market competition to measure this ease: 1) the four-firm concentration ratio, or the share of the market in a given product controlled by the four largest firms, and 2) the four-state concentration ratio, or the share of jobs found in the four dominant states for each product. The four-firm concentration ratio in meat products is relatively low, ranging from only 19 percent in sausages and other prepared meats to 29 percent in meat packing plants (Table 5). Similarly, at 26 percent the four-state concentration ratio is the lowest among the four major food industries of importance to the farm states. The low concentration ratios indicate that competition in meat product markets is relatively diffuse. Although more recent data may reflect a more concentrated industry, the market for meat products is more open to the farm states than markets for many other food products. Thus, there appears to be an opportunity to build on the existing meat processing activity the farm states already enjoy.

Economic activity generated by the meat products industry is smaller than that generated by many other food processing industries, however. The amount of value added to raw farm products in meat processing is relatively low. One measure of the amount of value added to raw farm products in various food processing industries is the ratio of value added in processing to the total value of food shipments. A high ratio indicates a substantial amount of economic activity generated by the processing industry. Only 21 percent of the value of the meat products industry's total shipments is added in processing plants, well below the average 39 percent added by all food processing industries. On the other hand, the meat products industry is relatively labor intensive, promising the creation of many jobs. But the industry's average wage is relatively low (Table 1). Still, with new technologies promising to boost the amount of value added in the industry's plants, and with a strong farm state presence in the industry already in

place, the meat products industry is a likely target for farm state development efforts.

## Dairy products

Prospects for further developing the dairy products industry in the farm states are relatively bright. Although new entrants to the industry will face well-entrenched competition, two of the farm states, Minnesota and Wisconsin, are already among the industry's leaders. Moreover, technological advances could boost milk processing activity in the farm states.

Consumer demand varies widely across the range of dairy products. Per capita consumption of all dairy products has grown slowly in recent years, edging up only 7 percent during the 1980s to 582 pounds in 1988 (Putnam 1990). The market for fluid milk and cream has been one of the weakest segments of the dairy market, with per capita consumption falling sharply in the 1970s and edging down further in the 1980s. Similarly, consumption of frozen dairy products has stagnated since the early 1970s. Sales of low-calorie frozen desserts, however, are expected to be relatively strong in the years ahead, as makers of ice cream and other frozen desserts recognize the consumer's growing nutritional concerns. The cheese market is expected to be the strongest in the dairy industry, spurred by increased use of cheese in convenience foods and other food products (U.S. Department of Commerce 1990).

This array of prospects for various dairy products suggests that dairy processing strategies in the farm states—especially Minnesota and Wisconsin—have successfully targeted the strongest segments of the dairy products market. A strong position in butter, condensed milk, and cheese production has placed Minnesota and Wisconsin among the four leading dairy processing states. Thus, the industry's relatively high four-firm and four-state concentration ratios do not necessarily preclude additional dairy process-

ing activity in the farm states (Table 5). Still, Minnesota and Wisconsin lag behind other states in fluid milk processing, largely due to their distance from major consumer markets.

Recent advances in milk processing techniques, however, may bolster prospects for fluid milk processing in these two farm states. Much of the fluid milk produced in Minnesota and Wisconsin is processed into other products because milk, which is 87 percent water, is heavy and costly to transport long distances to major consumer markets. Although processing milk into other products adds value and economic activity, milk supplies in these two states are so large that further gains are available from shipping more milk to other parts of the country.

Two new technologies may eventually boost milk shipments from the farm states. Newly emerging membrane filtration techniques remove the water from milk through a series of fine filters while retaining nutritional and taste qualities. Milk could be transported in concentrated form and then reconstituted near the point of final sale (Fleming and Kenney 1989).<sup>7</sup> A second new technique is freeze concentration, the same process used to concentrate fruit juices, which would provide a milk concentrate to be sold in the frozen food case. In sum, these new food packaging technologies could significantly enhance dairy processing activity in the farm states by shrinking the locational disadvantage.

### **Preserved fruits and vegetables**

Prospects are mixed for bolstering food processing activity in the preserved fruits and vegetables industry, the dominant processing industry in Idaho. A relatively high value added rewards successful entrants into this market. A handful of states—including Idaho—have captured a substantial share of the market, however, and will be formidable competition for new entrants to the industry. Advances in food technology should continue the industry's record

of success in meeting the consumer's demand for convenient, highly nutritious products. But the new technologies are likely to offer only marginal gains to the industry's activity in the farm states.

The consumer's increasing appetite for food products that provide both convenience and nutrition has had a major impact in the preserved fruits and vegetables industry. Many of the industry's product offerings are microwavable, spurring demand among a consumer population with limited time for meal preparation. For example, per capita consumption of frozen vegetables increased a fourth during the 1980s, to nearly 18 pounds, and per capita consumption of frozen potatoes increased two-thirds since the early 1970s, to about 22 pounds in 1988. The consumer's increasing concern for nutritional value—as well as for convenience—promises to maintain the market's growth. In addition, the rapidly increasing number of elderly Americans provides another source of growth for easily prepared, highly nutritious product offerings (U.S. Department of Commerce 1990, and Putnam 1990).

Successful new products in the rapidly growing market would likely be rewarded with a substantial boost in economic activity. Processing activity in the preserved fruits and vegetables industry accounts for half of the value of product shipments, the second highest among all food processing industries (Table 5).

New activity in the farm states, however, will meet strong competition from established market players. Although firm concentration ratios are relatively low, geographic concentration ratios in the industry are high. Nearly 60 percent of the nation's employment in the frozen fruits and vegetables industry and over 80 percent of employment in the dehydrated fruits and vegetables industry are located in just four states (including Idaho, a high-potential farm state).

New food packaging technologies further enhance the prospects for the preserved fruits and vegetables industry and might allow farm states

some additional diversification of their crop bases into fresh produce. Some food companies are already using controlled-atmosphere packaging to ship lettuce plants (complete with roots) in a package infused with carbon dioxide. Such "living plants" arrive at retail markets in better condition and have a longer shelf life than lettuce packaged more conventionally. Similarly, the retort pouch can be used to boost the quality of processed vegetable products. These new technologies may allow farm states to make additional inroads into the fruits and vegetables processing industry. But the new technologies will benefit the industry's established players as well, and farm state gains are likely to be limited.

### **Grain mill and bakery products**

Further processing of huge, locally grown grain crops appears to be a natural method of stimulating additional economic activity in farm states. The value added in selected grain processing industries is among the highest of all food processing industries. But the market for these highly desirable industries is also highly concentrated among a few large firms, potentially limiting farm state gains.

Demand for flour and cereal products has risen in recent years, a positive factor for farm state milling and baking industries. Wheat flour is the dominant product in this food group, accounting for three-fourths of total flour and cereal product consumption. Driving the increase in consumption is a strong demand for fresh baked goods, crackers, pasta products, and breakfast cereals. Consumption of cereal and bakery products is larger in older households, indicating the demand for flour and cereal products will remain strong as the large baby-boom generation ages (Putnam 1990, and U.S. Department of Commerce 1990). With demand strengthening for flour and cereal products, the grain and bakery products industries would seem a natural source for adding value to the huge

grain crops produced in the farm states.

In addition, these industries offer substantial economic benefits. For example, in the cereal breakfast foods industry, the value added in processing is 97 percent of the value of product shipments, the highest percentage among all food processing industries (Table 5).

Farm states may have difficulty tapping these markets, however. Markets for many grain-based products tend to be dominated by a few large well-capitalized firms in a few states, posing an effective barrier to entry by farm states. For example, 86 percent of the market for cereal breakfast food is controlled by four firms, one of the highest concentration ratios in the food industry. More than half of the breakfast food industry's jobs are found in just four states. Similarly, four-firm and four-state concentration ratios are relatively high for flour, wet corn milling, and cookies and crackers. Thus, these markets appear difficult to enter unless farm states chase branch plants of major food companies, a costly and difficult approach to development.

Although the grain product markets appear to be natural avenues for using farm state grains, the cost of shipping farm state grain to distant processing points is relatively inexpensive. In addition, technological advances that would enhance grain processing activity in the farm states by reducing the cost of shipping finished grain products or by some other means do not appear likely. In sum, a large portion of the farm states' huge grain crops are likely to remain a ready supply for processing industries elsewhere.

## **IV. Conclusions**

Officials in farm states are turning to food processing as an engine for economic growth in the 1990s. The food industry is an attractive target for economic development because adding value to abundant farm production creates jobs and boosts incomes. Yet the ten farm states are

not major food processing states. To the contrary, a corridor of states spanning from the Great Lakes to the East Coast processes more than a third of the nation's food supply. Based on a comparison of farm output relative to food output, the seven farm states with the greatest potential to expand food processing are Arkansas, Idaho, Iowa, Kansas, Minnesota, Nebraska, and Wisconsin.

Overall, farm states face an uphill battle in becoming major centers for processing the nation's food supply. They have a huge supply

of farm products to process, but they are removed from the nation's population centers. Thus, farm states may need help from new technology to offset their locational disadvantage. In the past, farm states have made enormous investments to boost the productivity of agriculture through the funding of research at agricultural experiment stations and land grant universities. Adding value to farm production may require that more of the research effort be focused on the development of new food processing and transportation technologies.

## Endnotes

<sup>1</sup> One piece of evidence indicating the stability of food processing is the pattern of growth in the food processing component of the nation's aggregate gross state product (GSP). The food processing component of manufacturing has grown more slowly than other manufacturing industries, but food processing has been more stable. Based on a regression from 1972 to 1986, the manufacturing component of the nation's GSP grew 2.27 percent a year with a standard error of 0.35 percent. Food processing grew 2.18 percent a year, with a standard error of 0.21 percent. Non-food manufacturing grew 2.27 percent a year, with a standard error of 0.38 percent.

<sup>2</sup> The farm state definition used in this article is similar to the U.S. Department of Agriculture's definition of a *farm-dependent* county. A farm-dependent county is one in which agriculture accounts for more than 20 percent of the county's total personal income. In addition, the Agriculture Department defines a *farm-important* county as a county where farming accounts for 10 to 20 percent of the county's total personal income.

An alternative definition of farm state is a state that produces a large quantity of farm production. But many of the states with large farm output have large, diversified economies and thus are much less dependent on a food processing strategy. California, the nation's largest producer of farm products, is a prime example.

<sup>3</sup> The most recent gross state product data available are for 1986. This analysis is based on an average of the GSP

data for 1984 through 1986 to smooth variations in the data caused by changing weather, shifts in farm policy, and other short-term effects.

<sup>4</sup> The ten states that lead the nation in farm output in descending order are California, Texas, Iowa, Illinois, Florida, Minnesota, Nebraska, Wisconsin, Kansas, and North Carolina. Thus, the five nonfarm states among the ten leading producers of farm products are California, Texas, Illinois, Florida, and North Carolina. Two of these five states (Texas and Illinois) are focusing some development effort on food processing, but the strategy is generally aimed at rural development rather than statewide development.

<sup>5</sup> In essence, farm states must consider both the risks and the rewards of pursuing various food processing industries. A strategy designed to capture industries offering the greatest rewards—in terms of jobs and income created in adding value to raw farm products—may also face the greatest risk of failure. For example, the cereal breakfast food industry leads all food processing industries in the amount of value added to raw farm products. But the breakfast food industry is highly concentrated in the hands of a few well-entrenched firms. Thus, a potentially large economic payoff—the large value added—is offset by a very slight chance of successfully capturing a piece of the industry. In contrast, the meatpacking industry offers a lower reward (in terms of value added) than the breakfast food industry. But since the industry is not as concentrated

as the breakfast food industry, the probability of boosting the industry's activity in the farm states is greater.

<sup>6</sup> The analysis of farm production data in this section is based on an average of the three most recent years of data available, 1986 to 1988, to smooth variations caused by changing weather, shifts in farm policies, and other short-term effects. Food processing employment data are for

1987, the most recent data available.

<sup>7</sup> Two filtration methods are now being tested, reverse osmosis and ultrafiltration. In reverse osmosis, milk is forced through a semipermeable membrane under pressure. The membrane allows water molecules to pass, but nothing else. Ultrafiltration is a similar technique, but the milk passes through a series of progressive membranes.

## References

- Bureau of Economic Analysis. 1990. *Survey of Current Business*. U.S. Department of Commerce, April.
- Connor, John M. 1988. *Food Processing, An Industrial Powerhouse in Transition*, Lexington, Mass.: Lexington Books.
- Fleming, Ann, and Jeannine Kenney. 1989. "Will Consumers Benefit from New Dairy Technologies?" *National Food Review*, January/March, pp. 17-21.
- Hopper, Paul F., and Daryl B. Lund. 1990. Testimony before the House Subcommittee on Department Operations, Research and Foreign Agriculture, Committee on Agriculture, U.S. House of Representatives, February 6.
- Labuza, Theodore P. 1985. "Future Food Products: What Will Technology Be Serving Up to Consumers in the Years Ahead?" Proceedings of the 1985 Annual Meeting of the Association of Food and Drug Officials, Madison, Wisc.
- Putnam, Judith Jones. 1990. "Food Consumption, Prices, and Expenditures, 1967-88," U.S. Department of Agriculture, Economic Research Service.
- Smith, Tim R., and William F. Fox. 1990. "Economic Development Programs for States in the 1990s," *Economic Review* Federal Reserve Bank of Kansas City, July/August.
- U.S. Department of Commerce, International Trade Administration. 1990. *U.S. Industrial Outlook*, Washington: Government Printing Office, January.



# Economic Development Programs for States In the 1990s

By Tim R. Smith and William F. Fox

State economic development programs have traditionally tried to create jobs by recruiting large manufacturing businesses from other states or countries. Such programs first appeared in the 1930s, when southern states successfully used tax incentives and subsidies to attract textile manufacturers from the Northeast. Since then, manufacturers have remained the primary targets for state economic development efforts. Such programs brought big economic development prizes to some states in the 1980s, at times netting high payoffs. Notable examples in the 1980s were the Nissan and Saturn manufacturing plants attracted by Tennessee, and the Toyota plant won by Kentucky. However, the overall effectiveness of traditional recruitment programs in creating

jobs is increasingly being called into question.

Programs aimed at helping indigenous, or homegrown, businesses will likely be more appropriate than traditional recruitment programs for the 1990s. Some states have already begun to move their economic development programs away from recruiting manufacturers toward encouraging business startups, fostering expansion of existing businesses, and preventing business failures. Today, most jobs are created by small indigenous nonmanufacturing businesses. Thus, states that continue to focus on recruiting heavy industry may overlook more promising economic development strategies.

The first section of this article describes the broad range of traditional state recruitment programs that states believe will create jobs. The second section examines how well traditional recruitment programs have met the goal of creating jobs. The third section outlines strategies for refocusing existing programs and adopting new programs aimed at indigenous businesses. The article concludes that states stand a better chance of boosting employment if they more

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aggressively shift the focus of their efforts from recruiting large manufacturing businesses to providing a more favorable economic environment for all businesses.

## **I. Traditional Economic Development Programs**

Programs designed to attract businesses from other states and countries—especially large manufacturing plants—form the mainstay of most efforts to promote economic development. The emphasis on recruitment surfaced soon after World War II, as manufacturing employment grew and states generally believed that large manufacturing businesses provided the best source of new jobs.<sup>1</sup> Manufacturing employment swelled from 15.5 million in 1947 to 20.2 million in 1969. In addition, employment levels shifted substantially across states, as branch plants of northern-based manufacturing firms started up or relocated in southern states. Combined, these new employment opportunities in manufacturing fortified states' belief that the best job creation strategy was to recruit manufacturing businesses. Today, many states have been left with a legacy of traditional recruitment programs aimed at attracting manufacturing businesses.<sup>2</sup>

### **Reducing business taxes**

The most common traditional recruitment technique involves reducing or limiting business taxes. State policymakers believe lower business taxes will increase profits, thereby attracting new businesses and new jobs. Business tax reduction usually takes one of four forms. Each form allows businesses to retain more profits.

In the first form, states can lower tax rates to limit business taxes and let businesses keep a larger share of their profits. State taxes that most directly affect businesses are corporate income, sales and use, and property taxes. While nearly all states impose these taxes on businesses,

they do so at widely different rates.<sup>3</sup>

Second, states can offer tax credits to lower business tax liabilities. Tax credits allow the tax reduction to be directed to industries a state deems important to its economic future. Arkansas, Nebraska, and Indiana, for example, encourage job creation by granting corporate income tax credits for each new manufacturing job. Arkansas offers a tax credit for motion picture expenditures, and Mississippi offers tax credits for job creation in some high-technology industries.

Third, states can limit the base upon which business taxes are levied. By narrowing the tax base, a state tries to reduce business tax liabilities for a given tax rate, increasing the chances that businesses in the state will be profitable. For example, many states provide sales tax exemptions for manufacturing equipment.<sup>4</sup> In this way, the sales tax base is narrowed by excluding a business-related item from the tax base. Another example is that states can allow deductions to the corporate income tax, so as to limit the base of this tax. States also can offer businesses property tax abatement, or forgiveness, on the real property associated with new manufacturing facilities. Abatements of this kind often apply to particular industries or geographic areas.

Fourth, states can negotiate tax reductions for certain individual businesses. These tax concessions are normally used to attract new businesses or to prevent businesses from leaving a state. For example, property tax concessions helped attract the Nissan plant in Smyrna, Tennessee. And recent changes in Nebraska's tax law were aimed at attracting and retaining manufacturing businesses.

### **Other programs**

States can use several other programs to attract businesses in addition to tax reduction. These other programs further illustrate the magnitude of traditional recruitment programs.

### ***Credit programs to recruit businesses.***

States provide many forms of financing to recruit businesses in the hope of creating jobs. These programs normally attempt to reduce the cost of financing manufacturing facilities. For example, Kentucky and Mississippi offer direct loans and loan guarantees for industrial buildings and equipment. Kentucky agreed to pay interest on funds borrowed to finance the recent Toyota plant. Some states issue industrial development bonds, and most states allow local governments to issue them. These bonds exempt bondholders from paying federal income tax on the bonds' interest, although such exemptions have been limited by recent changes in federal tax law.

***Infrastructure.*** States often build infrastructure to attract manufacturers and jobs from other states. The most common public infrastructure investments are highways and water and sewerage systems. While infrastructure improvements and expansions are usually provided for all residents and businesses, states increasingly are building or improving infrastructure to attract individual manufacturers (Fox and Smith 1990). For example, Tennessee provided highway upgrades to improve access to both the Saturn and Nissan plants.

***Education and training.*** Many states try to attract businesses by improving the skills of their labor force. Education and training programs increase the profitability of businesses by increasing the productivity of workers and reducing labor costs. Traditionally, education and training have been tailored to meet the needs of manufacturing businesses. For example, Tennessee provided \$11 million to Nissan and \$30 million to Saturn to help workers develop job-specific skills for the new plants. Similar training programs were designed in Michigan for Mazda, in Illinois for Diamond Star Motors, and in Kentucky for Toyota (Milward and Newman 1990). Most training of this kind occurs at state universities and vocational technical schools, although Tennessee also helped send many

Nissan employees to Japan for training.

***State promotion.*** All states promote themselves as good places to do business. States commonly advertise their most attractive attributes and economic development programs through newspapers, videos, and trade shows. In addition, state economic development departments frequently help businesses comply with the myriad of government regulations. They also provide information to project development teams on possible sites for locating within the state. The audience for state promotion efforts such as these includes businesses in other countries (Smith 1989). For example, 39 states have opened trade offices in Japan.

## **II. Traditional Recruitment: The Best Strategy for Creating Jobs?**

The breadth of these programs shows how strongly states rely on the traditional recruitment strategy. Such efforts may have been appropriate when U.S. manufacturing employment was growing. More recently, however, some policymakers have begun to question whether the traditional recruitment strategy can create jobs.

The number of jobs created by the traditional recruitment strategy depends on how well recruitment programs attract large manufacturing businesses and how many jobs these businesses bring with them. Before deciding whether the traditional strategy creates jobs effectively, two questions must be asked.<sup>5</sup> First, *do recruitment programs attract businesses?* Surveys and empirical studies suggest that, at best, recruitment programs have a small effect on business location decisions. Second, *are large manufacturing businesses good sources of new jobs?* Employment trends and evidence about the contribution of large businesses to job growth suggest that large manufacturing businesses are no longer a major source of new jobs. Consequently, policymakers are asking a third question, *are there better sources for new jobs?*

## Do recruitment programs attract businesses?

Researchers have relied on two types of studies to determine whether recruitment programs are effective in inducing businesses to relocate. The two types of studies are surveys of factors important in the location decisions of individual plants, and empirical studies of the relationship between various government programs and economic growth.

Most surveys of business location decisions conclude that public programs are much less important to the location decision than such factors as labor costs and access to markets. Surveys are generally designed to ask corporate participants in recent branch plant decisions to reveal the most important factors in their location decisions. For example, Schmenner (1982) concludes from results of several comprehensive surveys that taxes affect only those location decisions where all other factors are equal. He also concludes that while high taxes might deter businesses from locating at a particular site, low taxes are not likely to attract businesses. Furthermore, because personal taxes affect the quality of life in an area, they are likely to have a larger effect than do business taxes on business location.

Schmenner bolstered his conclusion that taxes play a minor role in location decisions by surveying 410 of the Fortune 500 companies. In this survey, firms identified factors considered essential in the choice of a state or region in which to start or relocate a branch plant. Low taxes and available government financing were essential location factors to only 1 percent of branch plant openings and to none of the relocating plants. To find out what factors were most important, firms were asked to identify which factors helped tip the scales in favor of a particular site. Such factors were regarded as desirable but not essential in choosing a location. Nearly 75 percent of the respondents cited a favorable labor climate, and 60 percent cited low land

costs. But only 35 percent of the respondents cited low taxes, and only 25 percent cited government help with infrastructure and labor training.<sup>6</sup> From this survey information, Schmenner concludes that most firms locate branch plants without much regard to specific recruitment programs.

Empirical studies also suggest that traditional recruitment activities have only a small effect on business location decisions. Although focusing on the effects of taxes, these studies evaluate the effects of other programs as well.<sup>7</sup>

Carlton (1982) examined the effects of taxes and recruitment programs on employment at new branch plants of manufacturing firms. He also considered the effects of such other location factors as prices for labor and energy on where plants located.<sup>8</sup> The study found that neither taxes nor other types of incentives were significant location factors. Energy prices, particularly the price of electricity, were important, though. In addition, firm size, the availability of engineers and other workers in the local market, and the concentration of employment in an area were important location factors for at least one of the industries.

Bartik (1985) also found that recruitment efforts exert only a small influence on branch plant locations. He examined the effects of several factors on the location of 1,607 manufacturing branch plants from 1972 to 1978, including unemployment insurance, workers' compensation, corporate income, and property tax rates. Bartik's findings suggest that the corporate income tax rate influences where businesses locate. However, he estimates that a 10 percent increase in a state's corporate income tax rate would deter only 2 to 3 percent of businesses. Moreover, other tax rates tend not to be significant factors in location decisions.

Bartik's study also points out that several other factors influence branch plant location. For example, more roads lead to more plant locations, suggesting that state infrastructure programs are important. Higher unionization of

labor in a state leads to fewer plant locations, while a high degree of existing manufacturing activity attracts more plants.

Fox and Murray (1990) provide limited evidence linking taxes and other recruitment programs to the location or startup of businesses. Their study examined the location effects of taxes and a broader set of recruitment programs on 68,520 businesses relocating or starting up in Tennessee from 1980 to 1986. All industries were represented in the study. The study found that high taxes were generally more important to small businesses than to large businesses. Taxes were not important in the location choices of businesses with more than 50 employees. The study also revealed that high sales tax rates discouraged manufacturers of durable goods. Furthermore, a highly educated work force and ready access to interstate highways help attract business.

Overall, empirical studies of business location suggest that recruitment activities have little or no effect on business location decisions. Empirical evidence thus reinforces survey results suggesting that such factors as access to markets, unionization, and a high concentration of similar businesses in an area are more important determinants of location decisions.

### **Are large manufacturing businesses good sources of new jobs?**

The traditional recruitment strategy assumes that large manufacturing businesses can provide a lot of new jobs. But are these businesses good sources of new jobs?

Recruiting manufacturing businesses is not likely to be an effective job creation strategy. Manufacturing employment has experienced no net growth of employment since 1969. Furthermore, manufacturing's share of total employment has declined throughout the postwar period (Chart 1). Manufacturing accounted for 35.4 percent of total employment in 1947, 28.7 percent

in 1969, and only 18.1 percent in 1989.<sup>9</sup>

Although manufacturing employment has not increased since 1969, some states have continued to recruit manufacturing businesses—primarily large manufacturing plants—from other states. However, the evidence shows that U.S. firms seldom relocate or start up branch plants. Schmenner's survey showed that startups of new branch plants of large firms in his sample accounted for an average of only about 15,900 new jobs in each state from 1970 to 1979.<sup>10</sup> Moreover, only 445 branch plants relocated during the period, an average of less than one relocation per state each year—and only 61 of these plants relocated across state borders. Consequently, noticeable job growth in a state is not likely to stem from relocations, and only limited growth is likely to stem from new branch sites.

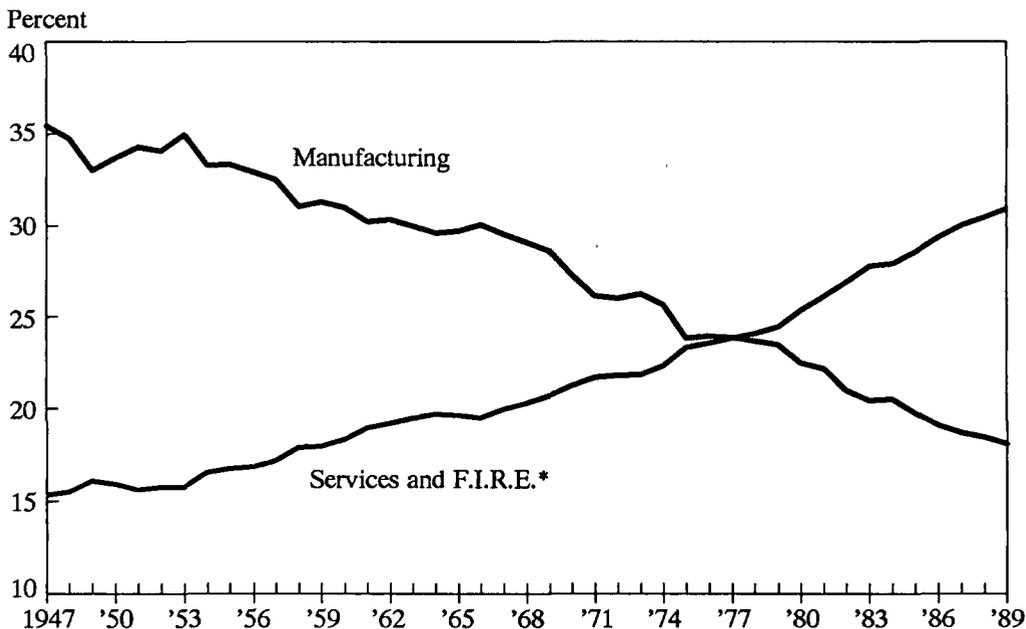
### **Are there better sources for new jobs?**

If large manufacturing businesses are not good sources of new jobs, where can policy-makers turn? Evidence suggests that other types of businesses offer greater promise for job creation.

Several nonmanufacturing industries offer greater potential for future development programs. For example, the finance, insurance, and real estate (FIRE) sector and the services sector have grown rapidly since World War II. From 1947 to 1989, FIRE employment grew at a 3.3 percent rate and services employment grew at a compound annual rate of 4.1 percent. As a result, the share of employment in these two sectors grew significantly (Chart 1). By 1989, there were 26.9 million jobs in the services sector and 6.8 million in the FIRE sector. These and other nonmanufacturing industries thus hold promise for employment growth in many states.<sup>11</sup>

Further evidence suggests that economic development strategies focusing on large new businesses will ignore the richest sources of potential new jobs—new small businesses or

Chart 1  
**Employment Shares**  
 (Percent of total U.S. nonagricultural employment)



\*Finance, insurance, and real estate.

Source: U.S. Department of Labor.

expansions of existing businesses. Evidence on the types of businesses most responsible for job creation is scant because most business location studies mix the effects of new firms with the expansion, contraction, or closing of existing firms. And national data on business entries do not exist. However, comprehensive data are available on business entries in Tennessee for the years 1979 through 1986. These data illustrate that the majority of job creation in Tennessee occurred in new small businesses or expansions of existing businesses (Fox and others 1987, and Fox and Murray forthcoming).

The Tennessee data on business entries suggest that small businesses account for most new firms and the new jobs that come with them.<sup>12</sup> Only 100 businesses with more than 200

employees—0.16 percent of all new businesses—started or relocated in the state from 1980 to 1985.<sup>13</sup> On the other hand, 56,228 firms with 20 or fewer employees started or relocated in the state. Although precise data on employment at these new small businesses are not available, their overwhelmingly larger number suggests their employment impact far exceeded that of large businesses.

The data also suggest that most employment gains occur through expansions rather than new locations or startups. Employment gains at expanding firms accounted for six times more new jobs than new startups from 1979 to 1986 in Tennessee, a state known for its success in recruiting large manufacturing businesses. And 60 percent of national manufacturing gains in the

1970s were due to plant expansions (Schmenner 1982). The Tennessee data on business entries and national employment trends thus suggest that large manufacturing businesses are not likely to be a strong source of new jobs for most states. Therefore, traditional recruitment strategies overlook indigenous businesses and their greater potential to create jobs.

### **III. New Directions for Economic Development Programs**

The potential of indigenous businesses—especially small businesses—to create jobs suggests that states should focus on building a strong economic environment to help these businesses grow. To carry out such a strategy, states should shift the focus of traditional programs from recruiting large manufacturing businesses to fostering the growth of smaller indigenous businesses. States also should consider a new class of programs designed to enhance the environment for entrepreneurs, existing businesses, and small firms. Such a strategy, though not proven, is more likely to be successful than traditional recruitment programs.

#### **Redirecting business recruitment programs**

State economic development programs are likely to generate more jobs if they are redirected to include indigenous businesses. These efforts stand a better chance of creating significant numbers of new jobs if all businesses, not just large manufacturers, can reap benefits from these programs. That is, the programs are more likely to succeed if they are made available to the businesses that hold the most promise for job growth in the 1990s, namely, small nonmanufacturing businesses.

One way states can aim economic development programs toward a broader range of businesses is by viewing these programs as ways to

improve a state's overall economic environment. In this way, development programs can build on states' strengths and overcome their weaknesses to provide a healthier setting for businesses. In other words, if a state creates a favorable economic environment, it increases the likelihood that new businesses will start and existing businesses will prosper. In addition, states might also benefit from business relocation because a favorable economic environment increases the likelihood that businesses will move from states with less favorable economic environments.

Although states should de-emphasize recruitment, their development strategies could retain some recruitment efforts. Some states have attracted wholesale, computer, and banking businesses. Other states continue to target specific manufacturing industries. For example, some farm states have aimed their economic development efforts at food processing industries (Barkema, Drabenstott, and Stanley 1990). But these recruitment efforts should be modest and aimed at carefully identified targets that are particularly promising to individual states.

#### **Programs for business creation and expansion**

Programs for creating and nurturing businesses have already begun to capture the attention of some state policymakers. However, programs focusing on indigenous businesses are still less prevalent than traditional recruitment programs. These newer programs usually entail using public funds to encourage business startups and the expansion or retention of existing businesses. Because it is still too soon to evaluate the indigenous programs, states should proceed cautiously and carefully monitor the success of the programs they adopt. Each state can then choose a mix of programs that most improves its environment for business startups and expansions. Four main types of new programs are available to states: small business development

centers, research and development programs, technology transfer programs, and credit programs for new businesses.

***Small business development centers.*** Good management practices are important to the success of small businesses. States are helping small and startup businesses learn such practices as marketing, organization, and financial controls through small business development centers. Frequently associated with universities, these centers provide management consulting services to individual businesses. In addition, states often provide financial and training assistance or low-cost space to encourage small business startups. Some states—Indiana, Massachusetts, and Georgia, for example—have developed programs to help entrepreneurs identify investors. A key strategy in Oklahoma's five-year economic development plan is assisting entrepreneurs and small businesses.

***Research and development programs.*** Although high-technology businesses will create a relatively small share of new jobs over the next decade, several states believe they can attract a substantial part of the growth if they can help develop emerging technologies. To do so, states increasingly are establishing partnerships between their universities and private businesses.<sup>14</sup> Often these businesses are started by faculty entrepreneurs who receive help in moving ideas from research laboratories to the market. Some state policymakers believe that closer partnerships between state universities and businesses can help identify cutting-edge research areas with market potential. Pennsylvania's Ben Franklin Partnership and Ohio's Thomas Edison Program are two well-known research and development partnership efforts. In addition, Tennessee has provided funds for research and new facilities for development of applications of biotechnology to help clean up environmental waste.

***Technology transfer programs.*** States are increasingly providing direct technical assistance

to businesses. Agricultural extension services at land grant universities have provided technical assistance to agriculture for well over a century, but manufacturing extension services are relatively new. Many states are now developing such services to deliver technology to manufacturing businesses, often using existing capabilities at state universities. For example, the University of Tennessee has developed the Center for Industrial Services over a period of several decades. This center provides teams of engineers to help improve manufacturing processes. Ohio State University has developed the Ohio Technology Transfer Organization (OTTO) to improve the flow of new technology to small businesses.<sup>15</sup>

***Credit programs for new businesses.*** States have designed two new kinds of credit programs to provide financing to risky startup businesses. By doing so, states are filling a gap left by traditional financing mechanisms, which often exclude risky enterprises with a potential for large payoffs.

States have established *venture capital funds* to spur the startup or expansion of high-potential businesses with low probability of success. Such businesses have the potential to boost economic development through rapid growth, but may have difficulty securing private capital. Venture capital funds often take equity positions in a startup business, effectively tying repayment of the assistance to the success of the business. For example, Tennessee operates venture capital funds through a for-profit corporation at the University of Tennessee. Some states also set up clearing houses to match entrepreneurs with venture capital funds.

Another way states have stepped in to fill financing gaps for new businesses is through *business and industrial development companies* (BIDCOs). These new financial institutions are created by states to provide credit to new businesses that are more risky than businesses using conventional bank loans but less risky than

businesses seeking venture capital funds. Public funds are used to attract private investors to start a BIDCO. Once established, the BIDCO operates as a private institution under state regulation to provide flexible financing to moderately risky businesses. Unlike commercial banks, BIDCOs can take an equity interest in the businesses they lend to or receive a share of profits to offset below-market interest. Moreover, BIDCOs provide more management assistance and get more involved in the day-to-day operations of businesses than banks. Michigan, a pioneer in the BIDCO programs, has established six BIDCOs.<sup>16</sup>

These examples of programs aimed at helping create and expand businesses suggest that states are already beginning to change the direction of their economic development programs. Although it is too soon to know if programs that focus on business creation and expansion will be more effective than traditional recruitment programs, new and existing businesses appear to hold untapped potential for state economic development.

#### **IV. Conclusions**

State economic development programs traditionally recruit large manufacturing businesses

from other states or countries. Because recruitment efforts were successful in landing a few high-profile manufacturing plants in the 1980s, states have been reluctant to de-emphasize these traditional programs. But despite the visible prizes, empirical evidence suggests that recruitment efforts have very little effect on business location decisions. Moreover, if trends established during the past four decades continue, large manufacturing businesses will not provide a significant source of new jobs in the 1990s.

Most states stand a better chance of creating jobs if they emphasize an economic development strategy that builds a strong economic environment for indigenous businesses. Manufacturing industries will always be a source of jobs in some states due to transitions within the manufacturing sector, but smaller firms in services sectors hold greater overall promise for job creation. Traditional economic development programs need to be reoriented toward providing a sound economic environment for all businesses, especially indigenous businesses. In addition, new programs aimed at the startup, expansion, and retention of businesses will likely be more appropriate for the 1990s than traditional recruitment programs.

## Endnotes

<sup>1</sup> In addition to creating new jobs, state development strategies frequently include other goals, such as increasing incomes and locating jobs in depressed geographical areas.

<sup>2</sup> This discussion of recruitment programs and the discussion of other state economic development programs in the third section of this article are based on a directory of these programs prepared by the National Association of State Development Agencies (1986). For further discussion and examples of state economic development programs, see Clarke 1986.

<sup>3</sup> Tax effort—a measure of the extent to which a state taxes its available resources relative to the national average—indicates the wide variation in tax rates across states. For example, the U.S. Advisory Commission on Intergovernmental Relations (1989) reports that Nevada, Texas, Washington, and Wyoming collected no corporate net income tax in 1986, while corporate taxes in Massachusetts and New York were about double the national average. See U.S. Advisory Commission on Intergovernmental Relations (1989) for additional information on state tax effort for a variety of different types of taxes.

<sup>4</sup> Exempting manufacturing equipment from sales taxes is also consistent with the sales tax concept, which intends for the sales tax to be imposed on consumption-oriented transactions rather than production-oriented transactions.

<sup>5</sup> Because of its focus on states' goal of job creation, this article defines effectiveness in terms of job creation. However, policymakers must ultimately weigh the benefits and costs of all economic development programs to determine their appropriateness.

<sup>6</sup> To get a better idea of how plant openings were actually influenced by government programs, Schmenner (1982) measured how many firms actually received the benefits of these programs. Only 14 percent of a sample of 161 Fortune 500 plant openings from 1970 to 1979 received tax concessions, 38 percent obtained physical assistance with infrastructure, 30 percent received labor training, and 21 percent used industrial revenue bonds.

<sup>7</sup> Studies based on overall indicators of economic growth, such as capital investment (Papke 1987), employment (Wasylenko and McGuire 1985), and personal income (Romans and Subrahmanyam 1979) often find that taxes and other public programs influence economic growth. However, the major findings are sensitive to the time period studied, the data used, and the methodology employed (Carroll and Wasylenko 1990). Most of this research cannot directly evaluate the effectiveness of programs to recruit

business because the data do not allow separation of economic growth generated by indigenous businesses from that generated by recruited businesses.

<sup>8</sup> The study was confined to the fabricated plastic, communication transmitting equipment, and electronic component industries mainly because their locations are not tied to local economic conditions and because they had many new branch plants in the time period studied (1967-71).

<sup>9</sup> The manufacturing employment trend does not suggest a deindustrialization trend. On the contrary, productivity gains have allowed the share of manufacturing output in real gross national product to remain nearly constant, despite the decline in the manufacturing employment share during the postwar period. Moreover, overall trends mask transitions in individual manufacturing industries. At any given time, some industries will be expanding and others will be contracting. These industrial transitions affect each state in a different way.

<sup>10</sup> Together these plants accounted for 37 percent of the nation's manufacturing employment in 1977. These 410 firms had 17,759 locations with average employment of 492.6 at each plant. The firms opened only 2,318 new branch plants during each year of the 1970s. These firms were responsible for fewer than 15,900 net new jobs since they also closed other facilities and had employment expansions and declines.

<sup>11</sup> The comparison of manufacturing and nonmanufacturing businesses in this article focuses on direct job creation. Some individual manufacturing businesses may create a significant number of indirect jobs in other industries because of large multiplier effects. These multiplier effects will be different for each industry and location. Some observers argue that manufacturing jobs have a more positive effect on local incomes because manufacturing wages are generally higher than wages in other sectors. However, recent earnings data from the Bureau of Labor Statistics suggest that average hourly earnings in manufacturing are only about \$1 higher than in services and nearly equal to hourly earnings in wholesale trade.

<sup>12</sup> Data on the number of active and newly entering plants are drawn from the Tennessee Department of Employment Security Master Employer and 202 Files. A "firm" is defined to be an Employment Security account number (Fox and Murray forthcoming).

<sup>13</sup> The 58 large manufacturing plants entering Tennessee accounted for only 1.7 percent of all new manufacturing establishments. Most new firms are small. Peak employment at all new establishments averaged 9.5 employees,

compared with average employment of 20 at all Tennessee firms in 1980.

14 The Council of State Policy and Planning Agencies (1990) recently concluded that these programs may be oriented too much toward universities.

15 A report by the National Governors Association argues that states can play a role in technology transfer, but mostly as a catalyst. The major responsibility for maintaining

technology must remain with the private sector (National Governors Association 1990).

16 Herbers (1990) identifies public-private financing arrangements, such as BIDCOs, as part of a third wave of economic development efforts. In the third wave, states are supplementing public funds with private funds to increase the scale of economic development efforts.

## References

- Barkema, Alan, Mark Drabenstott, and Julie Stanley. 1990. "Processing Food in Farm States: An Economic Development Strategy for the 1990s." Federal Reserve Bank of Kansas City, *Economic Review*, July/August.
- Bartik, Timothy. 1985. "Business Location Decisions in the U.S.: Estimates of the Effect of Unionization, Taxes, and Other Characteristics of States." *Journal of Business and Economic Statistics*, January.
- Carlton, Dennis W. 1983. "The Location and Employment Choices of New Firms: An Econometric Model with Discrete and Continuous Endogenous Variables." *The Review of Economics and Statistics*, August.
- Carroll, Robert, and Michael Wasylenko. 1990. "The Shifting Rate of Fiscal Variables and Their Effect on Economic Development." *Proceedings of the Eighty-Second Annual Conference of the National Tax Association*.
- Clarke, Mariane K. 1986. *Revitalizing State Economies: A Review of State Economic Development Policies and Programs*. Washington: Center for Policy Research and Analysis, National Governors Association.
- Council of State Policy and Planning Agencies. 1990. "State Technology Programs: A Preliminary Analysis of Lessons Learned." Washington: Council of State Policy and Planning Agencies.
- Fox, William F., and Matthew N. Murray. Forthcoming. "Local Public Policies and Interregional Business Development." *Southern Economic Journal*.
- Fox, William F., and Tim R. Smith. 1990. "Public Infrastructure Policy and Economic Development." Federal Reserve Bank of Kansas City, *Economic Review*, March/April.
- Fox, William F., and others. 1987. "Entries and Exits of Firms in the Tennessee Economy 1985-1989," University of Tennessee monograph, May.
- Herbers, John. 1990. "A Third Wave of Economic Development," *Governing*, June.
- Milward, H. Brinton, and Heidi Hosbach Newman. 1990. "State Incentive Packages and the Industrial Location Decision," in Ernest J. Yanarella and William C. Green, eds., *The Politics of Industrial Recruitment: Japanese Automobile Investment and Economic Development in the American States*. Westport, Conn.: Greenwood Press, Inc.
- National Association of State Development Agencies. 1986. *Directory of Incentives for Business Development in the United States: A State-by-State Guide*. Washington: Urban Institute Press.
- National Governors Association. 1990. "Promoting Technological Excellence: The Role of State and Federal Extension Activities." Washington: National Governors Association.
- Papke, Leslie E. 1987. "Subnational Taxation and Capacity Mobility: Estimates of Tax-Price Elasticities," *National Tax Journal*, June.
- Romans, Thomas, and Ganti Subrahmanyam. 1979. "State and Local Taxes, Transfers and Regional Economic Growth," *Southern Economic Journal*, October.
- Schmenner, Roger W. 1982. *Making Business Location Decisions*. Englewood Cliffs, N.J.: Prentice-Hall, Inc.
- Smith, Tim R. 1989. "Foreign Direct Investment: A Source of Jobs for Tenth District States?" Federal Reserve Bank of Kansas City, *Economic Review*, July/August.
- U.S. Advisory Commission on Intergovernmental Relations. 1989. *1986 State Fiscal Capacity and Effort*. Washington: U.S. Advisory Commission on Intergovernmental Relations.
- Wasylenko, Michael, and Therese McGuire. 1985. "Jobs and Taxes: The Effect of Business Climate on States' Employment Growth Rates," *National Tax Journal*, December.



# The Role of Government in Promoting Homeownership: The U.S. Experience

By Gordon H. Sellon, Jr.

**T**his conference has offered a unique opportunity for a wide-ranging exchange of views on housing finance. Yesterday's sessions provided a comparative view of housing finance systems and emphasized the importance of housing finance reform to the economic development plans of Central and Eastern European countries. This session of the conference focuses on philosophies of housing finance or, more specifically, on the goals and objectives of a housing finance system.

The issue I would like to address today is the role of the government vis-a-vis the market in a housing finance system. Since the potential

scope for government involvement in housing is rather large, I will confine my discussion to policies designed to promote homeownership.

In many Eastern and Central European countries, housing has been viewed as a right, that is, as part of the social responsibility of the government. In contrast, a market-oriented approach would view housing as a consumer good to be provided by the market without government interference. Thus, an important part of housing reform in Eastern and Central Europe is a decision about the appropriate balance between government and the market in housing finance.

One approach to this problem is to look at how other countries have resolved this issue. Today, I would like to discuss the balance between the market and the government in the U.S. system of housing finance. The United States is particularly interesting because, while the market makes basic decisions about prices and quantities, the government attempts to alter these decisions through taxes and subsidies designed to increase homeownership. In explaining the large role of the government in U.S. housing

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finance, I will argue that most government programs are not designed to overcome limitations of the market mechanism, but rather, are largely a response to a highly artificial and inefficient structure of financial regulation. Thus, I believe that with a more rational system of financial regulation, the government's role in U.S. housing finance could be substantially reduced.

The paper is divided into three parts. The first section examines the rationale for a governmental role in promoting homeownership in the U.S. system of housing finance. The second section describes the main types of policies used in the United States and how they work. The final section discusses how the U.S. experience may be relevant to housing finance reforms in other countries.

### **What is the Rationale for Government Policies Promoting Homeownership?**

There are two general arguments for a governmental role in promoting homeownership. A traditional view is that the market, left to itself, may not produce either an economically efficient or a socially acceptable level of homeownership. A somewhat different view advanced in this paper is that the system of financial regulation may bias the amount of homeownership below levels normally provided by the market. In the United States, I believe this second view provides more insight into the government's large role in housing finance.

### **Limitations of the market**

The key feature of the market mechanism is that consumer goods are allocated on the basis of preferences and ability to pay. In the case of housing, homeownership will be achieved by those who desire to be homeowners and who have the necessary income and wealth.

A traditional economic argument for

government intervention in a market is based on an imperfection in the market. This imperfection may result from an externality in production or consumption or from the characteristics of a public good. In these cases, the market may not produce an economically efficient amount of a good, and government actions in the form of taxes or subsidies may be appropriate to move the market closer to an economically efficient level of operation.

In housing finance, I believe it is difficult to identify a natural market imperfection that would lead to an economically inefficient level of homeownership. Thus, it is hard to justify government policies promoting homeownership on strictly economic grounds.<sup>1</sup>

One can make the argument, however, that the market will tend to produce a socially or politically unacceptable level of homeownership. A feature of homeownership is that it is extremely expensive relative to other consumer goods. The purchase of a home requires money for a downpayment plus income sufficient to cover interest and principal payments. Depending on the distribution of income in society, the market may tend to produce a relatively low level of homeownership. If homeownership is socially and politically desirable, government actions may be required to supplement the market mechanism.

In the United States, I think it follows from this discussion that there is no good economic argument for promoting homeownership. The social or political explanation is plausible, but, in my opinion, plays a secondary role to an explanation based on regulatory bias.

### **Regulatory bias**

Markets are rarely allowed to operate freely. Most countries have elaborate systems of financial regulation designed to promote such goals as economic stability, the value of the currency, and consumer protection.

In the United States, much of the system of financial regulation dates back to the Great Depression in the 1930s. While much of this legislation was modified or dismantled in the last decade, I believe the evolution of housing policy in the United States has been strongly shaped by the regulatory structure of the 1930s. Specifically, I will argue that this regulatory structure was strongly detrimental to housing finance and homeownership.

During the 1930s, most changes in the structure of financial regulations were designed to stabilize and promote confidence in the financial system. Indeed, a number of authors have argued that these reforms promoted stability at the expense of competition (Huertas 1987). Yet, competition is an essential element in the market mechanism. Thus, to the extent that these regulations suppressed competition, they tended to impede the free flow of financial capital and so resulted in an inefficient allocation of financial resources.

I believe this regulatory system had particularly adverse effects on housing. To develop this point, I would like to examine three features of the 1930s system: geographic restrictions on financial intermediaries, product specialization of intermediaries, and development of a standardized mortgage contract. The net effect of these developments was to reduce the pool of investors who might fund housing, which lowered the flow of funds into housing and raised the cost of housing to consumers.

**Geographic restrictions.** The U.S. financial system has long been biased in favor of small, local deposit intermediaries. For example, such deposit intermediaries as banks and savings and loans have not been able to conduct full-scale deposit-taking and lending activities on a nationwide basis. These geographic restrictions have tended to limit the size of financial institutions and reduce the mobility of capital.

For many years funds for housing came primarily from deposits at local savings institu-

tions. Because capital was not permitted to flow freely between regions, the cost and availability of housing finance varied considerably (Frederikson 1971). In particular, housing tended to be underprovided in rapidly growing regions with strong housing demand.

**Functional specialization.** Historically, financial institutions in the United States developed along functional lines. For example, commercial banks tended to specialize in business loans, while savings and loan associations and mutual savings banks provided housing loans. This historical development became the basis for a regulatory specialization in the 1930s, as financial institutions were restricted in the products they provided (Huertas 1987).

These regulations, like the geographic restrictions, impeded the flow of financial capital. Thus, housing was very dependent on the flow of funds into institutions specializing in housing finance. Because housing institutions competed with other local institutions for deposits, any competitive advantage of other institutions in attracting deposits led to reduced funding for housing, higher housing costs, and reduced homeownership.

**Standardized mortgage contract.** Beginning in the 1930s, the government promoted the use of a single, standardized mortgage contract. The key features of this contract were a long maturity (20 to 30 years), a fixed interest rate, and the ability of the borrower to cancel or prepay the mortgage on demand. These features were designed to be favorable to the borrower and so tended to stimulate housing demand. At the same time, the rigid terms of the contract made mortgages inherently unattractive to many investors. Those investors who wanted yields higher than deposit yields, short maturities, and certain cash flows would invest in corporate or government securities rather than in housing.<sup>2</sup>

The combined effect of these regulatory policies was to fragment capital markets and

reduce competition. As a result, the allocation of funds to housing was reduced and the cost of housing increased. In this sense, I believe that financial regulations in the United States biased homeownership below market-determined levels and provided the impetus for government programs to stimulate homeownership.

## **Government Policies Promoting Homeownership**

Since the 1930s, a great variety of government programs have served to increase homeownership in the United States. The overall effect of these programs has been to offset the negative impact on housing caused by the regulatory structure. Most of these policies work by increasing the flow of capital into housing markets or by directly reducing the cost of homeownership.

### **Actions to channel funds through the private sector**

Government policies to encourage a greater flow of funds through private intermediaries fall into two categories: insurance guarantees and restrictions on investment options for small investors.

Two forms of insurance guarantees were introduced in the 1930s. *Deposit insurance* was originally designed to promote financial stability by increasing public confidence in banks and other deposit intermediaries. Under this program, investor deposits in eligible institutions were insured by the government up to a fixed dollar limit. *Mortgage insurance* was developed to make housing more affordable and to make mortgages more attractive to investors. Under this program, mortgages conforming to government guidelines were federally insured.

Deposit insurance had a stimulative effect on housing because deposits at savings and loans and other specialized housing intermediaries

were generally insured. To the extent that investors valued the safety of investments in the deposit liabilities of these institutions relative to uninsured investments, the total flow of funds into housing increased. In addition, since these investors were willing to pay for this insurance through a reduced interest rate on deposits, savings institutions were able to pass on the lower cost of funds to homebuyers in the form of lower mortgage rates.

Mortgage insurance also stimulated housing. With government guarantees on mortgages, borrowers were able to reduce downpayments and pay a lower interest rate. Moreover, government guarantees made local mortgage loans from across the country attractive as investments to national financial intermediaries, such as insurance companies. Thus, mortgage insurance had the dual effect of overcoming geographic regulatory barriers and broadening the investor base.

One result of the 1930s regulatory structure was that housing was very susceptible to events that diverted deposits from savings institutions. That is, any competitive advantage of the deposits of non-housing intermediaries or other investments reduced the flow of funds into housing. For example, if banks could offer higher rates on deposits than savings institutions could or if investors could get higher yields from direct investments in capital markets, housing would tend to suffer.

To avoid these problems, a variety of government policies attempted to stabilize the flow of funds into savings institutions. The most significant program was a restriction on deposit rates that could be paid by commercial banks. These interest rate ceilings on bank deposits prevented banks from attracting funds away from savings institutions by offering higher rates. Another program restricted the minimum denomination of government treasury securities in an attempt to force small investors to place their funds in deposit intermediaries.

## **Creation of government-sponsored housing intermediaries**

In addition to these programs, which increased the flow of funds through private housing intermediaries, the government has created a number of agencies to allocate additional funds to housing.

The Federal Home Loan Bank System (FHLBS) and the Federal National Mortgage Association (FNMA or "Fannie Mae") channel funds from capital markets into housing. The FHLBS operates by selling its own securities in capital markets and then lending funds to savings institutions to make more home mortgages. FNMA also sells its own securities and uses the proceeds to purchase mortgages from savings institutions and other mortgage originators.

Both of these government-sponsored agencies serve to overcome the regulatory barriers to housing finance discussed earlier. To the extent that these agencies are able to tap into national capital markets, they overcome geographic restrictions on the flow of housing funds. Also, because their debt securities have shorter maturities, more certain cash flows, and more marketability than mortgages, these securities broaden the class of investors and so overcome some of the limitations of the standardized mortgage contract.

More recently, FNMA, the Government National Mortgage Association (GNMA or "Ginnie Mae"), and the Federal Home Loan Mortgage Corporation (FHLMC or "Freddie Mac") have been the primary sponsors of the development of the secondary mortgage market. In this market, investors can purchase agency-guaranteed securities backed by pools of traditional mortgage loans. Like the earlier agency programs, the secondary mortgage market has greatly increased the flow of funds into housing by overcoming geographic regulatory barriers to capital flows and by

broadening the investor base for housing finance (Sellon and VanNahmen 1988). The agency guarantees of the mortgage-backed securities also allow more favorable borrowing rates, which can be passed back to the homebuyer in lower mortgage rates.

## **Tax policy to increase homeownership**

The tax system in the United States has also been used as a policy instrument to promote homeownership. Tax policy can offset higher housing costs caused by regulation either by increasing the supply of funds and reducing the cost of mortgage credit or by directly reducing the borrower's housing costs.

The most obvious use of tax policy to further homeownership in the United States is the deductibility of mortgage interest payments and the exclusion of imputed rental income from income taxes. This form of tax relief directly stimulates the demand for homeownership.

Tax policy has also been used to channel funds through institutions specializing in housing finance. For a number of years, thrift institutions that devoted a substantial portion of their investment portfolio to home mortgages received favorable income tax treatment. This policy encouraged savings institutions to specialize in housing finance and also resulted in lower mortgage costs to homeowners.

## **What Can Be Learned from the U.S. Experience?**

I believe the U.S. experience sheds considerable light on the proper scope for government in housing finance. Such general issues as the interaction between housing and the regulatory structure, the merits of different types of housing subsidies, and the need for specialized housing intermediaries are relevant to other countries reassessing the role of government in housing finance.

## **Housing and financial regulation**

The U.S. experience highlights the importance of a regulatory structure that is conducive to housing finance. Artificial restrictions on the structure and operations of financial institutions impede capital flows and reduce the efficiency of financial markets. In the United States, these restrictions have reduced the flow of funds into housing, raised housing costs, and led to political pressure for new housing programs.

The U.S. experience also illustrates the dangers of government standardization of financial contracts. It is highly unlikely that the market would naturally produce a single type of mortgage contract with characteristics similar to the long-term, fixed-rate mortgage common in the United States.<sup>3</sup> Such enforced standardization reduces the pool of investors willing to fund housing and promotes further government programs to offset the negative effects on private investors.

### **Types of housing subsidies**

As discussed earlier, the United States has used a variety of techniques to subsidize housing, including restrictions on interest rates, insurance guarantees, and tax policy. I believe the U.S. experience suggests that tax policy is superior to the other types of subsidies.

The U.S. experience with direct interest rate controls has been particularly traumatic. Like other forms of direct price controls, interest rate ceilings, when effective, cause a serious distortion of capital flows.<sup>4</sup> In the United States, both the extended use of interest rate ceilings and their sudden removal in the early 1980s have caused periodic financial crises for savings institutions that have undermined the long-run commitment of these institutions to housing.

Insurance guarantees have become an increasingly popular form of government subsidy in the United States both in housing and other

areas. Insurance guarantees have important advantages and disadvantages. On the positive side, insurance guarantees can significantly alter the behavior of borrowers and lenders without any current budgetary outlay by the government. On the negative side, however, these guarantees can significantly distort the risk-taking incentives of the private sector. Thus, they require considerable government supervision to limit the government's exposure to credit risk. The current savings and loan crisis in the United States is a testament both to the power of insurance guarantees and to the future budgetary exposure if these guarantees are not monitored.<sup>5</sup>

Of the three types of subsidies, I believe tax policy is the best choice. Like insurance guarantees, tax policy can be effective in attracting funds to housing. The important advantage of tax policy is that its budgetary costs are known, whereas the future budgetary impact of insurance guarantees is quite uncertain.

### **The role of specialized housing intermediaries**

A final issue is the role for specialized housing intermediaries. In my opinion, the U.S. experience suggests that government-mandated specialization may harm rather than promote housing. Restrictions on product specialization reduce the flexibility of financial institutions in adapting to changing market conditions. In the United States, the housing specialization of savings institutions has made these institutions especially vulnerable to changes in competitive conditions. Moreover, the growth of government-sponsored housing agencies is largely the result of attempts to protect housing from the consequences of enforced specialization of private intermediaries.

This is not to suggest that specialized institutions cannot play a valuable role in housing finance. My point is that this specialization

should be based on an underlying economic rationale as determined by the market rather than by government regulation.

## Summary and Conclusions

This paper has examined the role the government plays in promoting homeownership in the United States. The central message of the paper is that the U.S. financial regulatory structure set up in the 1930s has adversely affected housing finance. As a consequence, many government housing programs in the United

States can best be viewed as offsetting this regulatory bias rather than overcoming limitations of the market mechanism. It follows that had a more rational system of financial regulation been in place in the United States, the government's role in housing finance would probably have been much smaller. For other countries in the process of redefining the role of government in housing finance, this paper highlights the importance of setting up a financial system that promotes competitive forces and the free flow of financial capital.

## Endnotes

<sup>1</sup> For a more complete discussion of the rationale for government housing policies, see Richard Musgrave, "Policies of Housing Support: Rationale and Instruments," in *Housing in the Seventies*, 1976, pp. 215-33.

<sup>2</sup> More recently, with periods of high inflation and volatile interest rates, the standard mortgage contract has proved unsatisfactory for both borrowers and lenders. For a discussion, see Patric Hendershott and Kevin Villani, (1977).

<sup>3</sup> Indeed, with the financial deregulation of the early 1980s, a variety of new mortgage types have become popular.

<sup>4</sup> This discussion focuses on deposit rate ceilings. There have also been ceilings on loan rates for government-insured loans and usury ceilings set by state law that have distorted capital flows.

<sup>5</sup> Recently, in Congressional testimony, Secretary of Housing and Urban Development Kemp indicated that the government's primary mortgage insurance fund could run out of funds by the end of the decade due to increased default rates on government-insured mortgages.

## References

- Downs, Anthony. 1985. *The Revolution in Real Estate Finance*. Washington: The Brookings Institution.
- Frederikson, E. Bruce. 1971. "The Geographic Structure of Residential Mortgage Yields," in Jack Guttentag, ed., *Essays on Interest Rates*. New York: National Bureau of Economic Research, pp. 187-230.
- Hendershott, Patric and Kevin Villani. 1977. *Regulation and Reform in the Housing Finance System*. Washington: American Enterprise Institute.
- Huertas, Thomas F. 1987. "Redesigning Regulation: The Future of Finance in the United States," in *Restructuring the Financial System*, Federal Reserve Bank of Kansas City, pp. 139-65.
- Sellon, Gordon H., Jr. and Deana VanNahmen. 1988. "The Securitization of Housing Finance," Federal Reserve Bank of Kansas City, *Economic Review*, July/August.
- U.S. Department of Housing and Urban Development. 1976. *Housing in the Seventies*. Washington: Government Printing Office.
- United States, President's Commission on Housing. 1982. *The Report of the President's Commission on Housing*.



# The Truth about Junk Bonds

By Sean Beckett

Junk bonds have been a common element in some of the country's worst financial wrecks this year. The Campeau retailing conglomerate collapsed in January under a heavy debt burden, much of it junk bonds. First Executive Corporation, one of the nation's largest insurance companies, announced a fourth-quarter 1989 loss of \$859 million on its junk bond holdings. And Drexel, Burnham, Lambert, the investment bank responsible for the growth of the junk bond market, filed for bankruptcy in February 1990.

These corporate casualties are only the most recent of the problems blamed on junk bonds. For years, some critics have claimed junk bonds are responsible for a host of broader financial market ills. According to these critics, junk bonds fueled the merger mania of the 1980s, caused the rapid growth in the level of corporate debt in recent years, and more generally increased financial market volatility.

If these serious charges are accurate, it may be time for laws or regulations to restrict the use of junk bonds. But if the charges are not accurate,

restricting the use of junk bonds would unnecessarily increase the cost of funds for many businesses.

The truth is that the evidence does not support these extreme charges against junk bonds. To be sure, there may be other concerns about junk bonds, such as whether junk bonds are suitable investments for banks and thrifts. This article does not address concerns such as these. Instead, the article examines whether junk bonds should be blamed for the rise in corporate mergers, corporate debt, and financial market volatility. The first section of the article defines junk bonds. The second section explains why some critics make these accusations against junk bonds, and the third section shows why these charges are not well-founded.

## I. What Are Junk Bonds?

A corporation can obtain funds in many ways. It can raise funds by retaining earnings, issuing equity, or floating debt. If it chooses to take on debt, the corporation faces further choices. For short-term finance, it can issue commercial paper or take out bank loans. For intermediate and long-term finance, it can take out

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bank loans, mortgage property, privately place bonds, or issue marketable corporate bonds. If the corporation chooses to issue marketable bonds, the bonds might be junk bonds.

Junk bonds are corporate bonds with low ratings from a major ratings service. Bond ratings are letter grades that indicate the rating services' opinions of the likelihood of a default. High-rated bonds are called investment-grade bonds, low-rated bonds are called speculative-grade bonds or, less formally, junk bonds.

A bond may receive a low rating for a number of reasons. If the financial condition or business outlook of the company is poor, bonds are rated speculative-grade. Bonds also are rated speculative-grade if the issuing company already has large amounts of debt outstanding. Some bonds are rated speculative-grade because they are subordinated to other debt—that is, their legal claim on the firm's assets in the event of default stands behind the other claims, so-called senior debt.

Junk bonds are traded in a dealer market rather than being listed on an exchange. A small group of investment banks makes a market in these securities; that is, they stand ready to buy or sell junk bonds.<sup>1</sup> Participating investment banks typically make a market in the issues they underwrite and in a limited number of relatively heavily traded issues considered "good credits."

Institutional investors hold the largest share of junk bonds. At the end of 1988, insurance companies, money managers, mutual funds, and pension funds held three-quarters of the face value of the outstanding junk bonds (SEC 1990, p. 22). Individual investors held only 5 percent of the outstanding bonds.

## II. Why Are Junk Bonds Criticized?

Junk bonds have been blamed for three financial market ills in recent years: the merger boom, the rise in corporate debt, and the increase in financial market volatility. Critics connect junk

bonds with these developments because they occurred simultaneously during the 1980s.

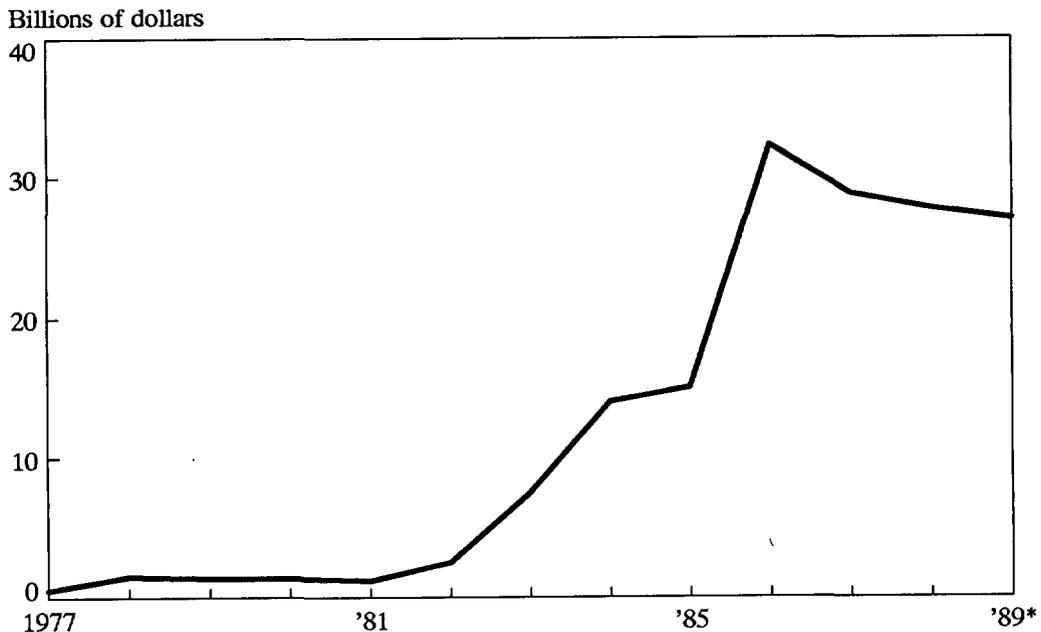
The market for junk bonds was revitalized in the late 1970s and the 1980s after decades of inactivity.<sup>2</sup> In 1977, the investment banking firm of Drexel, Burnham, Lambert began underwriting original-issue junk bonds. From 1977 through 1981, new issues never exceeded \$1.5 billion (Chart 1). Then, starting in 1982, junk bond issues enjoyed five years of explosive growth. New issues peaked in 1986 and receded slightly in the last few years to between \$25 billion and \$30 billion a year. The face value of outstanding junk bonds is currently in the neighborhood of \$200 billion, up almost twenty-fold over ten years ago.<sup>3</sup>

As the junk bond market flourished during the last decade, mergers, corporate debt, and financial market volatility also grew. From the end of 1979 through the end of 1989, the value of U.S. mergers grew more than 300 percent.<sup>4</sup> Corporate debt grew over 270 percent.<sup>5</sup> Volatility in U.S. bond markets reached an all-time high in the 1980s. In addition, notable episodes of financial market volatility were the stock market collapses of October 1987 and October 1989.

More than mere coincidence, however, is needed to blame the financial market ills of the 1980s on the growth of the junk bond market. The decade of the 1980s saw the rise of many financial market innovations besides junk bonds—financial futures, program trading, portfolio insurance, and asset-backed securities to name just a few.<sup>6</sup> Why single out junk bonds as the cause of the merger boom, the growth in corporate debt, and financial market volatility?

Some observers suggest that junk bonds caused both the merger boom and the growth in corporate debt by extending credit too freely. According to this argument, corporations unable to borrow in traditional debt markets obtained funds by issuing junk bonds. Some potential acquirers found it easy to float junk bonds to raise

Chart 1  
New Issues of Junk Bonds



\*Annualized estimate from data for the first nine months of 1989.

Sources: Perry and Taggart, Jr. 1990 (1977-80); SEC 1990 (1981-89).

the funds for their corporate takeovers. Similarly, some corporate borrowers took advantage of lower credit standards in the junk bond market to go on a debt "binge."<sup>7</sup>

Observers also suggest that the unusual volatility and unpredictability of junk bonds led to higher financial market volatility. This argument is related to the previous one. If, as some critics believe, junk bonds are the result of declining credit standards, then the market for junk bonds is prone to collapse. Investors may initially enjoy high returns, but the borrowers' failure to generate enough earnings to redeem the bonds leads inevitably to defaults. The prospect of these defaults causes frequent shifts in investor portfolios, from junk bonds to safer assets and back again, as investor confidence in

junk bonds ebbs and flows with every change in the financial news. These shifts into and out of junk bonds increase the volatility of returns in other markets, such as the market for investment-grade corporate bonds and the market for equities.<sup>8</sup>

These arguments about the links between junk bonds and other financial market developments imply that junk bonds are qualitatively different from other securities and forms of debt. No one claims that such conventional securities as investment-grade bonds or equity extend funds too freely. Nor are these conventional forms of finance accused of causing excessive financial market volatility. Thus, if junk bonds are responsible for the growth in corporate debt, the merger boom, and the increase in financial market

volatility, they must have some special characteristic that sets their behavior very much apart from that of other forms of finance.

### III. The Truth about Junk Bonds

This section disputes the idea that junk bonds have special characteristics—the key assumption behind the charges against junk bonds. The section then discusses specific flaws in each of the claims and draws the following conclusions: First, junk bonds played a relatively small role in financing the merger boom of the 1980s. Second, junk bonds are too small a part of the debt market to account for the growth in corporate debt. Third, the timing of the growth in junk bond issues is not closely related to financial market volatility.

#### Junk bonds are similar to conventional investments

Junk bonds are similar to other, familiar investments with respect to the four principal characteristics of investments: risk, return, liquidity, and control over corporate management.<sup>9</sup> When measuring investments along each of these four dimensions, junk bonds lie between such conventional investments as equities, investment-grade bonds, bank loans, and private placements.<sup>10</sup>

Junk bonds are *riskier* than investment-grade bonds but less risky than equities. Altman (1988) finds that the junk bond default rate, a key component of risk, was 2.2 percent for the years 1970 through 1986, compared with just 0.2 percent for all publicly issued corporate bonds.<sup>11</sup> A more comprehensive measure of risk is the standard deviation of returns. Perry and Taggart (1990) find the standard deviation of monthly returns of junk bonds is greater than that of investment-grade bonds but less than that of equities and of the capital market as a whole.

Junk bond *returns* lie between those of

investment-grade bonds and equities. Blume and Keim (1990) find that from January 1977 through December 1988 average monthly junk bond returns were 0.89 percent, higher than the 0.71 percent earned by investment-grade bonds and lower than the 1.14 percent earned by stocks. Perry and Taggart examined the relative performance of various portfolios in the quarters just preceding, during, and just after the seven post-World War II recessions. They found, again, that junk bond returns were intermediate between those of investment-grade bonds and equities.<sup>12</sup>

Junk bonds are more *liquid* than bank loans and private placements but less liquid than equities. Loan contracts and private placements typically contain customized clauses protecting the rights of the investors and restricting the actions of the borrowers. These clauses reduce the marketability of loans and private placements by increasing the cost to third parties of analyzing and valuing the debts and by increasing the frequency of renegotiation. Junk bonds, in contrast, are relatively standardized securities with an established secondary market. Even issues in default have a limited secondary market allowing investors to cut their losses and avoid protracted bankruptcy proceedings.<sup>13</sup> Recent disruptions in the junk bond market, however, are a reminder that the junk bond secondary market is neither as developed nor as liquid as the secondary market for equities.

Junk bonds offer investors more *control over corporate management* than investment-grade bonds but less control than bank loans, private placements, and equities. Some junk bonds contain “equity kickers,” that is, options or conversion privileges that let investors obtain an equity share in the borrowing firm. These features give investors the option to participate in the management of the firm.<sup>14</sup> In addition, some junk bonds are sold in strip financing deals, where both bonds and stocks are sold in fixed proportions to investors. In this case, bond holders have voting rights in the management of the firm.<sup>15</sup>

Since junk bonds are not markedly different from other securities, it is hard to understand why they should have any special ability to trigger corporate borrowing sprees. Junk bonds may have cost or tax advantages that allow for some marginal increase in debt. But these advantages are not likely to induce bondholders to invest in junk bonds more recklessly than they do in other debt instruments that are not materially different from junk bonds. Indeed, the bulk of junk bonds are purchased by the same institutional investors who purchase the bulk of private placements, investors who presumably apply the same credit standards to both types of investment.

Again, because junk bonds are similar to traditional financial instruments, it is doubtful they have any special ability to disrupt financial markets. As in any new financial market, the junk bond market may endure brief periods of somewhat greater volatility than average as the market matures and as investors learn how to analyze the investment characteristics of junk bonds. This extra volatility in the junk bond market may be transmitted to other markets as investors adjust their holdings of junk bonds and other securities. However, the fundamental investment characteristics of junk bonds are similar to those of other well-understood securities, such as equities and investment-grade bonds. All of these markets endure episodes of turbulence: the junk bond market does not stand alone in this regard.

In sum, the similarity of junk bonds to conventional financial instruments casts doubt on claims that junk bonds are responsible for the financial market ills of the 1980s. Furthermore, there are specific reasons why junk bonds should not be blamed for these events.

### **Junk bonds and the merger boom of the 1980s**

The junk bond market is too small to have caused the 1980s merger boom. Although a large

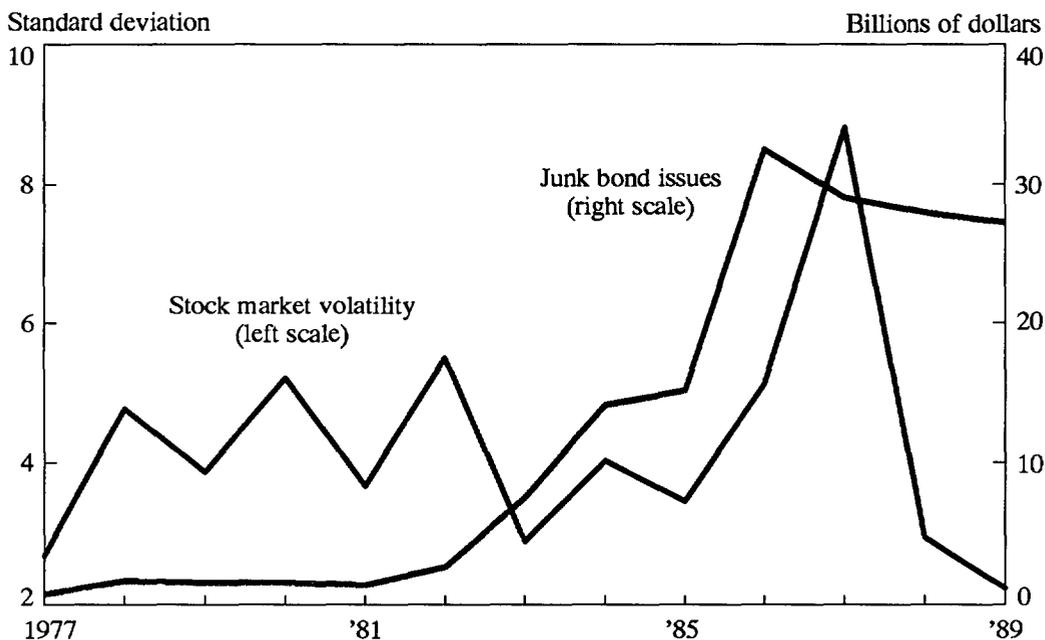
fraction of the junk bonds issued in the late 1980s were used to finance corporate takeovers, junk bonds accounted for only a small share of merger finance.<sup>16</sup> Even if all junk bonds issued had been used to finance mergers, junk bonds would have accounted for less than 8 percent of the value of U.S. mergers each year. Because not all junk bonds are used to finance mergers, this ratio is a generous upper bound on the junk bond share of merger finance. Moreover, a General Accounting Office study (1988) found that the bulk of the initial financing for tender offers came not from junk bonds but from bank loans. Thus, junk bonds appear to have played a minor role in financing mergers in the 1980s.

Some critics argue that junk bonds were the catalyst for many mergers and, in this way, caused the merger boom despite their small share in merger finance. It is true that junk bonds played a prominent role in several well-publicized mergers, and it is likely that the availability of junk bonds made a few more mergers possible than would have been the case without junk bonds. However, there are many ways to finance a merger. If junk bonds had not been available, mergers that made economic sense would probably have found other forms of finance. Indeed, previous merger booms have occurred without the aid of junk bonds. For example, during the merger wave of the late 1960s—the most recent merger wave prior to the current one and by some measures as significant as the wave of the 1980s—there was no market for original-issue junk bonds. This lack of junk bond financing in no way restrained the 1960s merger wave.

In fact, the merger boom of the 1980s may have helped establish the junk bond market rather than the other way around. The surge in new issues of junk bonds in the late 1980s coincided with the peak in the merger boom. Some part of the demand for debt generated by the merger boom may have increased interest in junk bonds and other innovative debt instruments.

Chart 2

## Junk Bond Issues and Stock Market Volatility



Note: In this chart, volatility is measured by the annual standard deviation of monthly stock returns of the Standard & Poor's index of 500 stocks.

Sources: See chart 1 (junk bond issues); Center for Research in Security Prices (stock market volatility).

### Junk bonds and corporate debt

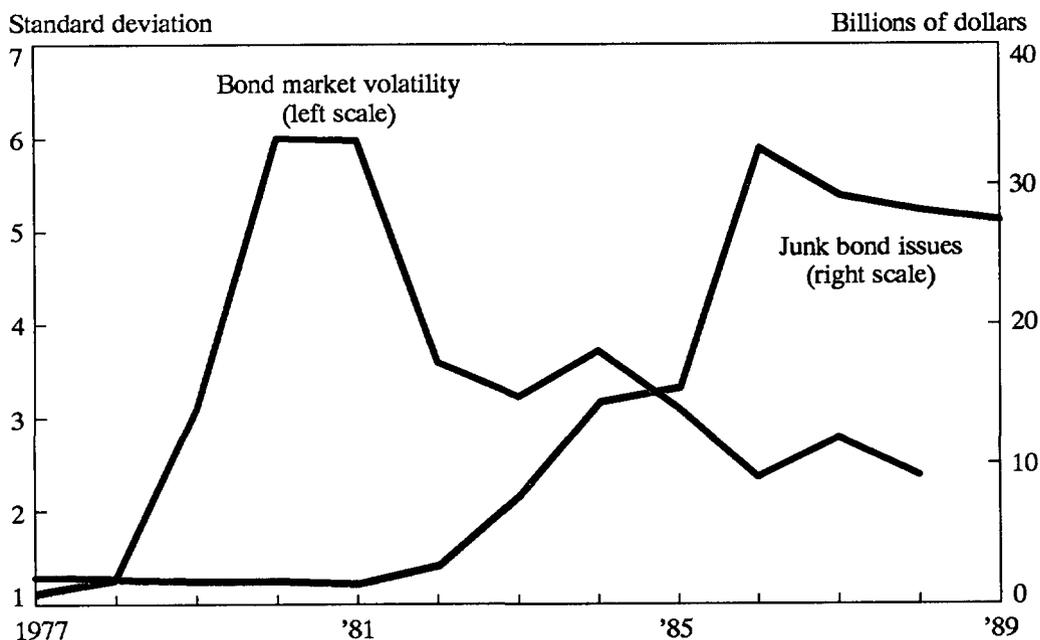
There is a striking coincidence in the growth of corporate debt and the revitalization of the junk bond market. However, the growth in outstanding junk bonds in the 1980s is not large enough to account directly for the growth in corporate debt. Junk bonds outstanding increased \$189 billion from the end of 1979 to the end of 1989. Over the same period, corporate debt increased \$1,322 billion. Thus, junk bonds accounted for only 14 percent of the growth in corporate debt.

Furthermore, it is difficult to say that junk bonds were more responsible for the growth in total corporate debt than any another component. During the 1980s, investment-grade bonds

increased more than 100 percent, bank loans grew more than 150 percent, and commercial paper outstanding increased more than 300 percent (Board of Governors of the Federal Reserve System 1990, pp. 35-36). These three forms of debt account for two-thirds of the growth in corporate debt. Clearly, all of these forms of debt played a part in the growth.

Indeed, it is possible that the growth in corporate debt contributed to the growth of the junk bond market, rather than the other way around. A prominent trend in financial markets in the 1980s was the move toward securitization of debt, that is, a move away from intermediated, nonmarketable forms of debt, such as bank loans, and toward marketable securities, such as corporate bonds.<sup>17</sup> Many of the financial innova-

Chart 3  
**Junk Bond Issues and Bond Market Volatility**



Note: In this chart, volatility is measured by the standard deviation of monthly returns of the Salomon Brothers' Long-Term High-Grade Corporate Bonds Index.

Sources: See chart 2.

tions of the 1980s came to popularity as part of this trend. Junk bonds may be just another reflection of the securitization phenomenon.

### Junk bonds and financial market volatility

Financial markets in the late 1980s endured some difficult times—particularly the stock market collapse of October 1987. Some observers claim the growth of the junk bond market increased financial market volatility.

One problem with this claim is the lack of an apparent relationship between the growth of the junk bond market and stock market volatility. Chart 2 shows new issues of junk bonds and stock market volatility from 1981 through

1989.<sup>18</sup> Junk bond issues grew rapidly through 1986 and then leveled off. Stock market volatility was very high in 1987, thanks to the October market collapse, but was unexceptional otherwise.<sup>19</sup> If there were a connection between stock market volatility and the growth of the junk bond market, stock volatility would be high throughout the late 1980s instead of just in 1987.

Furthermore, the growth of the junk bond market and volatility in high-grade corporate bond returns are inversely related. Chart 3 shows new issues of junk bonds again, but this time with the volatility of the Salomon Brothers index of long-term, high-grade corporate bonds.<sup>20</sup> Bond market volatility began the 1980s at record levels and was lower thereafter. If there were a connection between bond market volatility and the

growth of the junk bond market, bond volatility would have risen rather than fallen in the late 1980s.<sup>21</sup>

#### **IV. Conclusion**

For years, critics have blamed junk bonds for a variety of financial market ills. The merger boom of the 1980s, the rise in corporate debt, and financial market volatility in the 1980s are all traced, by some observers, to junk bonds.

The truth is that the evidence does not support these charges against junk bonds. The key premise in the case against junk bonds—the belief that junk bonds have special properties that upset

financial markets—is questionable. While the junk bond market grew at the same time that financial market problems surfaced, this circumstantial link turns out to be unpersuasive. The junk bond market has accounted for only a small part of the merger boom and of the growth in corporate debt, and the growth in the junk bond market is not closely associated with the trends in financial market volatility. Of course, there may be other concerns over junk bonds; for example, it may be inappropriate for banks and thrifts to hold junk bonds. Nevertheless, the three charges against junk bonds examined in this article are not supported by the evidence.

## Endnotes

<sup>1</sup> A small number of junk bonds, including some RJR Nabisco issues, are listed on the New York Stock Exchange (SEC 1990, p. 1).

<sup>2</sup> Junk bonds are just low-rated bonds, and low-rated bonds have always been a component of debt markets. In fact, in the 1920s and 1930s, junk bonds accounted for about 17 percent of new issues of corporate bonds on average (Hickman 1958, p. 153). However, the high default rates of the 1930s soured investors on junk bonds, and the market languished until the late 1970s.

<sup>3</sup> The SEC estimates that \$204 billion par value registered securities were outstanding as of September 30, 1989. There are no reliable estimates of the market value of these securities (SEC 1990, p. 1). Altman (1987) gives estimates of the value of outstanding junk bonds for earlier years.

<sup>4</sup> This figure is from the database maintained by *Mergers & Acquisitions* magazine. This database tracks mergers of domestic firms with at least \$1 million in assets. The value of each merger is recorded as the estimated value of all forms of consideration paid—cash, stocks, bonds, options, etc.—for the acquired company.

<sup>5</sup> There are many ways to measure the increase in corporate indebtedness in the 1980s. Two thorough examinations of this issue are Bernanke and Campbell 1988 and Faust 1990.

<sup>6</sup> Links have been suggested between financial market problems and some of these innovations. For example, program trading and portfolio insurance have been blamed for financial market volatility. However, none of these innovations has been connected with all three financial market developments.

<sup>7</sup> A number of observers make these or similar claims. For examples on the connections between junk bonds and the merger boom, see the comments of Gail I. Hessel, Managing Director for Standard & Poor's, a major securities rating service (Hessel 1988 and *Wall Street Journal* 1990).

To the extent junk bonds caused the merger boom, they also contributed to the growth in corporate debt, since a part of the growth in debt represents the financing of mergers (Clark and Malabre 1988).

<sup>8</sup> Hessel (1988) testified both to the current and prospective risk of junk bonds. In addition, if junk bonds caused the merger boom and the growth of corporate debt, then junk bonds may also have indirectly increased financial market volatility, because some analysts believe that both the merger boom and higher debt affected financial market performance. This point was made in a speech by Rand Araskog, the chairman of ITT Corporation (Clark and Malabre 1988). More recently, some market participants

attributed the stock market disruptions of October 1989 to the collapse of the United Airlines buyout.

<sup>9</sup> The similarity of junk bonds to conventional investments does *not* imply that junk bonds are appropriate investments for all investors. For example, junk bonds may not be appropriate for banks and thrifts, just as some other conventional investments—equities, for example—are considered inappropriate investments for banks and thrifts.

<sup>10</sup> Private placements are essentially loans made by non-banks, typically such institutional investors as insurance companies. They may take the form of either loan contracts or bonds. However, if they are bonds, they are not offered for sale on the public market. Private placements are underwritten by commercial and investment banks.

<sup>11</sup> Junk bonds are, of course, expected to have a higher default rate than investment-grade bonds. That is why they are rated lower than investment-grade bonds. A number of studies attempt to quantify the default risk of junk bonds. Most report annual default rates in the 1 to 3 percent range. Asquith, Mullins, and Wolff (1989) find much higher annual default rates, in the 3 to 9 percent range.

<sup>12</sup> Some observers argue that changes in the nature of junk bond issues make historical evidence on the risk and return of junk bonds an unreliable guide to their future behavior. If these observers are correct, junk bonds could be much riskier and could earn lower returns in the future.

<sup>13</sup> Altman (1989) reports that, on average, junk bonds sell for slightly less than 40 percent of face value at the end of the month in which default takes place.

<sup>14</sup> Equity kickers also allow investors to share in any unexpectedly high profits the firm might earn. This characteristic stands in contrast to traditional bonds where returns are limited to the coupons explicitly offered by the bond. These features not only increase the expected return to bondholders but also serve as a form of call protection since borrowers are more likely to call bonds when profits increase.

<sup>15</sup> Some observers argue that strip financing, along with other forms of junk bond finance, is chosen to reduce the double taxation of corporate dividends while retaining an equity relationship with investors. In other words, according to this view, junk bonds in strip financing function as though they were common stock. The interest paid on the junk bonds is tax deductible to the corporation, in contrast to any dividends paid. Since bondholders and stockholders are the same entities, the net tax burden can be decreased by paying out earnings as coupon payments on the junk bonds rather than as dividends on the common shares.

16 Drexel, Burnham, Lambert estimated that all forms of acquisition financing accounted for 79 percent of junk bond issues in 1987 and 83 percent in 1988. First Boston found that acquisition financing accounted for 76 percent of junk bond issues in 1989 (SEC 1990, p. 20).

17 All forms of corporate debt grew in the 1980s. However, bank loans grew more slowly than bonds, causing them to lose market share to corporate bonds.

18 New issues of junk bonds are compared with the annual standard deviation of monthly returns to see if the growth of the junk bond market increased financial market volatility generally. It might be the case that very short-lived disruptions in the junk bond market caused similarly brief disruptions in other financial markets. That is not the kind of volatility considered here.

The rate of new issues is used to measure the size of the junk bond market in this chart. Essentially the same picture would be produced by using the value of outstanding junk bonds to measure the size of the market.

19 For the post-World War II period, the annual standard deviation of monthly stock returns averaged 3.9 percent. Excluding 1987, the annual standard deviation of monthly stock returns in the 1980s was again 3.9 percent.

20 The Salomon Brothers index includes AAA and AA corporate bonds with maturities of ten years or more. These data end in 1988. In the post-World War II era, the annual standard deviation of this index averaged 1.8 percent. In the 1980s, the annual standard deviation averaged 3.7 percent.

21 Although bond market volatility fell during the 1980s, it remained above its post-World War II average throughout the decade. Some observers maintain that increased corporate leverage in the 1980s, that is, higher ratios of corporate debt to equity, is responsible for this generally higher bond market volatility. Even if this claim is correct, all forms of corporate debt grew in the 1980s, and there is no reason to single out junk bonds as the sole or most important debt component responsible for increased volatility.

## References

- Altman, Edward I., ed. 1987. "The Anatomy of the High-Yield Bond Market," *Financial Analysts Journal*, July/August.
- \_\_\_\_\_. 1988. "Analyzing Risks and Returns in the High-Yield Bond Market," *Financial Markets and Portfolio Management*.
- \_\_\_\_\_. 1989. "The 'Junk Bond' Default Rate Debate," Working Paper 539, Salomon Brothers Center for the Study of Financial Institutions, New York University, November.
- Asquith, P., D. Mullins, and E. Wolff. 1989. "Original Issue High Yield Bonds: Aging Analyses of Defaults, Exchanges, and Calls," *Journal of Finance*. September.
- Bernanke, Ben S., and John Y. Campbell. 1988. "Is There a Corporate Debt Crisis?" *Brookings Papers on Economic Activity*.
- Blume, Marshall E., and Donald B. Keim. 1990. "Risk and Return Characteristics of Lower-Grade Bonds, 1977-1987," in Edward I. Altman, ed., *The High-Yield Debt Market: Investment Performance and Economic Impact*. Homewood, Ill.: Dow Jones-Irwin.
- Board of Governors of the Federal Reserve System. 1990. Balance Sheets for the U.S. Economy 1945-89.
- Clark, Jr., Lindley H., and Alfred Malabre, Jr. 1988. "Takeover Trend Helps Push Corporate Debt and Defaults Upward," *Wall Street Journal*. March 15.
- Faust, Jon. 1990. "Will Higher Corporate Debt Worsen Future Recessions?" *Economic Review*, Federal Reserve Bank of Kansas City, March/April.
- General Accounting Office. 1988. *Financial Markets: Issuers, Purchasers, and Purposes of High Yield, Non-investment Grade Bonds*. Washington: Government Printing Office. February.
- Hessol, Gail. 1988. *United States General Accounting Office Hearing on High Yield Bonds*, comments in appendix. General Accounting Office. May, p. 177.
- Hickman, W. Braddock. 1958. *Corporate Bond Quality and Investor Experience*. Princeton, N.J.: Princeton University Press.
- Perry, Kevin J., and Robert A. Taggart, Jr. 1990. "Development of the Junk Bond Market and Its Role in Portfolio Management and Corporate Finance," in Edward I. Altman, ed., *The High-Yield Debt Market: Investment Performance and Economic Impact*. Homewood, Ill.: Dow Jones-Irwin.
- U.S. Securities and Exchange Commission. 1990. *Recent Developments in the High Yield Market*. Staff report, March.
- Wall Street Journal. 1990. "Reactions to Milken: Villain or Victim?" April 25.







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