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FOOD STAMP PROGRAM IMPACT ON RESOURCE USE: TEXAS COMPARED WITH THE U.S., FISCAL YEAR 1974*

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During fiscal year 1974 the National Food Stamp Program disbursed \$2.7 billion in bonus stamps [2, p. 9]. Of this amount, Texas received about \$208 million. These money injections will increase each economy's final demand, *ceteris paribus*.

However, an increase in the final demand of low income households will result in a discernibly different pattern of resource allocation than would occur if it came from high income households: the larger the increase in final demand, the greater the impact on patterns of resource use. The amount of bonus stamps distributed has reached a point where impacts may be identifiable.

The source of funds likewise affects such expenditure patterns and resulting resource use. For example, when funds for bonus stamps are raised by increasing taxes of the higher income households, their expenditure patterns will reflect their increased tax payments. In contrast, when funds are raised by sale of government securities, the immediate impact will be different, in part because individuals account for only about 16 percent of the ownership of *all* federal securities.¹

This paper reports results of a research effort which identifies the Food Stamp Program impacts on resource use in Texas and the U.S., and examines the following three propositions by using those results:²

- (1) The change in resource³ use associated with expenditures of bonus stamps funded by an income transfer through a tax increase will result in a net economic gain in business receipts for any economy as a whole, although some of its sectors will suffer a net loss in output.
- (2) The character of the economic impact on the national and a regional economy (in this case Texas) will be similar, although not necessarily of the same magnitude. Furthermore, the regional economy may have impacts which are not carried forward to the national level.
- (3) Any assumption with respect to funding of bonus stamps by an increase in taxes of the nonparticipant household sector (taxpayers), directly affects the magnitude of program impact, particularly at the state level.

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¹Individuals owned the highest proportion of total outstanding Federal securities during 1974 (16.8 percent). Other years reported lower figures which tended to cluster around 16.0 percent [9, p. 247].

²The U.S. Department of Commerce 1967 National Input-Output Model was adjusted for analyzing the program's national economic impact in terms of changes in business receipts and gross product which were associated with injection of the bonus stamps into the economy. For Texas, the model which was developed by the Office of Information Services, Office of the Governor of Texas, was adjusted to make a comparable analysis.

³Resource use refers to changes in land, labor and capital which occur when the final demand for products of some sectors rises, while simultaneously that for products of other sectors falls. For example, if demand for food rises as food stamp households spend their bonus stamps, but their final and hence total demand for furniture falls, food related sectors will require more land, labor and capital to produce the products needed to meet the increase in final demand, whereas the nonfood manufacturing sector would require fewer resources. The change in the level of a sector's business receipts offers an indirect measure of increased or decreased resource use by the sector. Comparisons of changes in all sectors composing the economy will show changes in resource use.

Funding Alternatives

In applying Texas and U.S. input-output models, funds for bonus stamps were raised by increasing taxes of higher income households; i.e., all households which did not participate in the program either by (a) the *full* value of the bonus stamps issued, or (b) by a lesser amount. Options for funding bonus stamps range from complete deficit financing to an increase in taxes just sufficient to cover the value of the bonus stamps disbursed. At the U.S. level *full* funding was used. Taxes of nonparticipant-households (taxpayers) were increased just enough to yield the \$2,718 million required for the bonus food stamps issued during fiscal year 1974.

For Texas, two comparisons were made. In order to make an identical methodological comparison with the U.S. analysis, Texas Comparison A raised the taxes of Texas nonparticipant households just enough to fund the \$207.6 million of bonus food stamps distributed during that fiscal year. Because it is rare that a state contributes in federal taxes the exact amount which it receives in return from federally-financed programs, a funding alternative also was adopted. For fiscal year 1974, the Internal Revenue Service reported (unpublished source) 5.0251 percent of total federal taxes were collected from Texas. Since total U.S. bonus stamps distributed for this fiscal year equalled \$2,718 million, the share of bonus food stamps paid for by Texas nonparticipant households amounted to \$2,718 million (.050251) or \$136.6 million. Taxes for Texas nonparticipant households were increased just enough in Comparison B to yield this amount.

THE MODELS

Texas

In 1967 the Governor's Office sponsored an input-output study to "provide data and interpretations of significant relationships about the Texas economy" [1, p. 9]. In 1972, the Texas staff conducted a sufficient number of field surveys to update the 1967 model. However, updating included application of relevant indices to 1967 data in some cases so that the 1972 version is not a precise replication of the 1967 procedures.

Grubb [1] reports details of the model's structure and data collection procedures. For the present purpose, the 1972 Texas model was reduced from 182 to 41 sectors, of which 37 were treated as endogenous. The Texas model originally had a single household sector. The adjusted model used in this study disaggregated the household sector into two parts: food stamp participant and nonparticipant household sectors. Impacts are cumulative in the

sense that all are assumed to have worked themselves through the entire Texas economy. Also, it was assumed that no substantial organizational shifts had taken place in the Texas economy during the fiscal year.

The United States

An adjusted version of the U.S. Department of Commerce's input-output model was used. Major adjustments, which consisted of reducing the national model from 487 to 32 endogenous sectors and then closing it with respect to the household sector, resulted in a total of 34 endogenous sectors. The personal consumption expenditures column in the final demand portion of the original model was used to create a household sector which then was disaggregated into participant and nonparticipant household sectors [4].

The impact of a national program can be identified most completely by an analysis which treats the entire economy. Only such treatment fully incorporates the relevant multipliers. Multipliers within any of the subeconomies of which the national economy is composed will be smaller than corresponding multipliers for the entire economy. Table 1 provides several illustrations. At the level of the Texas economy, the closed model final demand multiplier for the agriculture, forestry and fisheries sector was 3.6693 and for the U.S., 5.8547. In the case of meat and poultry manufacturing, Texas was 3.7997 and the U.S., 6.6453. The corresponding figures for the finance, insurance and real estate sector in Texas was 2.9433, and for the U.S., 4.9259.

TABLE 1. TYPE II—CLOSED MODEL MULTIPLIERS, SELECTED SECTORS, TEXAS AND THE U.S.

Sector	Direct, indirect and induced requirements ^a	
	Texas ^b	U.S. ^c
Agriculture, forestry, and fisheries	3.6693	5.8547
Mining	2.2093	5.2399
Construction	2.9981	6.0642
Meat and poultry manufacturing	3.7997	6.6453
Dairy products manufacturing	4.2847	6.4746
Grain mill products manufacturing ..	3.1254	6.4877
Bakery products manufacturing	2.6666	5.8535
Canned and preserved foods	3.0027	6.3381
Apparel manufacturing	2.4116	6.9053
Finance, insurance, and real estate	2.9433	4.9259
Personal services	3.9149	6.0606
Physicians and dentists	3.1494	5.7821
Hospitals and laboratories	3.6902	6.0250

^aSee [1, pp. 99 and 108] for discussion of direct, indirect and induced requirements coefficients considered as Type II Closed Model Multipliers.

^bSpecial tabulations for ERS, updated model.

^c[4, p. 15].

The difference in the size of these multipliers may largely be explained by: (1) greater *import leakage* characteristic of subeconomies, (2) different consumption functions used for a subeconomy and the total economy, particularly when the subeconomy is a very small subset of the total economy and (3) interaction of multipliers of each sector with those of the other sectors.

The subeconomy's greater import leakage is illustrated by data in Table 2. For instance, the Texas economy imports 26.1 percent of the direct requirements of its grain products manufacturing sector. In contrast, this sector at the national level imports 0.36 percent. In like manner, the Texas clothing manu-

facturing sector imports 44.3 percent. At the U.S. level it imports 0.20 percent.

The subeconomy's greater leakage occurs because subeconomies have fewer resources available within their boundaries than does the total economy of which they are constituent parts. The greater the proportion of total inputs (direct requirements) an economy must acquire from beyond its borders, the greater will be its leakage.

The consumption function⁴ of households within every economy is directly linked to resource use. It determines what products and services are required by households, and in turn this dictates the inputs each economic sector needs to produce goods and services. The consumption function for a subeconomy can vary substantially from that for an entire economy, particularly when the latter is as large as that of the U.S. Such differences are associated with cultural practices as well as with the age distribution of an economy's population. For example, in Florida and California drug stores account for a higher percent of total retail sales than they do in other states such as New York and Georgia [6].

Multipliers of each sector are, in part, the result of their interaction with and interdependence on each of the other sectors in each economy. Thus, each subeconomy will have a different multiplier for its agriculture, forestry and fisheries sector, and each of its other sectors.

Evaluation of the Propositions

Tables 3 and 4 report changes in business receipts associated with expenditures of bonus food stamps. Both Texas comparisons and the one for the U.S. show that total business receipts increased, although receipts for some sectors declined. The U.S. gained \$1.2 billion in total business receipts. Texas, Comparison A, gained \$22.3 million, and with Comparison B, gained \$139.0 million.

In all comparisons some sectors gained while others lost. At the U.S. level, food manufacturing (\$808.9 million); agriculture, forestry and fisheries (\$407.7 million); wholesale trade (\$249.1 million); and retail trade (\$461.3 million) gained most. In contrast, nonfood manufacturing (\$281.3 million); and real estate, finance and insurance (\$211.5 million) were the sectors which incurred the greatest loss in business receipts.

At the Texas level, food manufacturing, agriculture, forestry and fisheries, the wholesale trade,

TABLE 2. COMPARATIVE IMPORT LEAKAGES BY SECTOR, TEXAS AND U.S.

Sector	Direct requirements dependent upon imports	
	Texas	U.S.
	Percent	
Agriculture, forestry, and fisheries	11.1	1.68
Mining	8.2	7.75
Construction	28.6	.10
Manufacturing:		
Food manufacturing--	19.5	1.50
Meat and poultry products	15.0	.56
Dairy products	4.2	.54
Grain mill products	26.1	.36
Bakery products	15.7	.09
Canned and preserved foods	21.9	.88
Other foods and beverages	33.8	6.40
Nonfood manufacturing--	33.3	1.63
Clothing	44.3	.20
All other	22.2	3.06
Local and suburban transportation ..	9.9	0.00
All other transportation	7.8	4.67
Communications	4.7	.59
Gas utility	3.1	.92
Electric utility	1.3	.08
Water and sanitary services	4.8	0.00
Wholesale trade	14.3	.05
Grocery and related products	35.5	NA
Farm products	5.6	NA
Livestock	6.8	NA
All other	10.1	NA
Retail trade	10.3	.01
Department and variety stores	10.3	NA
Food stores	10.7	NA
Gas stations	1.7	NA
Apparel and accessories	14.7	NA
Eating and drinking places	17.2	NA
All other	7.3	NA
Finance, insurance and real estate ..	2.7	.06
Personal services	1.6	0.00
Physicians and dentists	5.0	0.00
Hospitals and laboratory services ..	10.3	0.00
Education (primary and secondary) ..	13.1	.01
School lunch	18.8	0.00
Other services	9.2	.08
State and local governments	7.9	0.00
Nonparticipant households	12.0	1.57
Food stamp participant households ..	11.8	1.19

SOURCE: Direct requirements tables of input-output study using Texas and U.S. Department of Commerce adjusted models.

⁴Consumption functions for the U.S. were derived from [8] and [12], and for Texas from [7] and [11]. The basic procedure was to allocate net income of the participant household (PHH) sector according to historical purchase patterns. Data on the PHH's net income were provided by the Food and Nutrition Service in terms of that sector's total net income, and by numbers of households in \$1,000 increments groupings. BLS [11, 12] provided a total food figure. ARS [7, 8] provided a basis for disaggregating the total food figure into individual items.

TABLE 3. CHANGES IN U.S. BUSINESS RECEIPTS AND GROSS NATIONAL PRODUCT ASSOCIATED WITH AN INCOME TRANSFER FROM TAXPAYERS TO FOOD STAMP HOUSEHOLDS IN THE FORM OF BONUS STAMPS, FISCAL YEAR 1974^a

Changes in business receipts by industry sector ^{b/}		Change in gross national product	
	\$1,000		\$1,000
Agriculture, forestry, and fisheries	+407,715	Participant household sector:	
Mining	-8,435	Bonus stamps received	2,718,000
Construction	-5,317	Plus income from new jobs	10,750
Manufacturing:		Minus increase in savings and taxes	68,913
Food manufacturing--		Equals change in consump- tion expenditures	+2,659,837
Meat and poultry products	+287,555	Nonparticipant household sector:	
Dairy products	+102,655	Income from new jobs	281,683
Grain mill products	+89,529	Plus decrease in savings and taxes	203,341
Bakery products	+59,181	Minus tax to fund stamps ..	2,718,000
Canned and preserved foods	+171,873	Equals change in consump- tion expenditures	-2,232,976
Other foods and beverages	+98,127	Net change in combined sector consumption	
Total	+808,920	expenditures	+426,861
Nonfood manufacturing--			
Clothing	-43,803		
Other nonfood manu- facturing	-237,523		
Total	-281,326		
Total manufacturing	+527,594		
Local and suburban trans- portation	-3,566		
All other transportation ..	-5,449		
Communications	-15,327		
Gas, electric, water and sanitary utilities	-707		
Wholesale trade	+249,145		
Retail trade	+461,343		
Finance, insurance, and real estate	-211,480		
Personal services	-45,728		
Physicians and dentists ..	-36,498		
Hospitals and laboratory services	-15,037		
Education (private)	-23,856		
Other sectors ^{c/}	-77,850		
Total change in business receipts	+1,196,547		

^aThe nonparticipant household sector was taxed \$2.718 billion to fund bonus stamps. Expenditure of the bonus stamps was treated as an increase in final demand of this amount. Meeting this increase in final demand required additional economic activity. This increase in economic activity resulted in a contribution to gross national product of \$426,861,000.

^bAs a result of the injection of bonus stamps, final demand for the products and services of some sectors rose more than it would have without the program. Agriculture, forestry and fisheries, for instance, received \$407.7 million more in business receipts (output) than it would have without the program. For other sectors, output was less than it would have been without the program. For example, mining would have received \$8.4 million more in business receipts without the program.

^c"Other Sectors" is an aggregate composed of direct and transferred imports; business travel and gifts; office supplies; federal, state, and local government enterprises; and other services.

and the retail trade were the sectors which gained most under both Comparisons A and B. For Comparison A, Texas incurred its greatest losses in business receipts in: nonfood manufacturing (\$6.2 million); nonfood wholesaling (\$7.6 million); nonfood retailing (\$16.1 million); and finance, insurance and real estate (\$5.7 million). Other services, an aggregate of six sectors, lost \$13.0 million.

Fewer sectors suffered losses and their losses were of lesser size for Comparison B. Those with the greatest losses were: eating and drinking places (\$1.2 million); all nonfood retail trade (\$0.2 million);

TABLE 4. CHANGE IN TEXAS BUSINESS RECEIPTS AND GROSS STATE PRODUCT ASSOCIATED WITH AN INCOME TRANSFER FROM TEXAS TAXPAYERS TO FOOD STAMP HOUSEHOLDS IN THE FORM OF BONUS STAMPS, FISCAL YEAR 1974

Changes in business receipts by sector		Changes in household income and gross State product	
	\$1,000		\$1,000
A a/	B	A a/	B
Agriculture, forestry and fisheries	+16,471	+21,322	Participant household sector:
Mining	-809	+2,099	Bonus stamps
Construction	-557	+1,085	received
Manufacturing:			207,568 207,568
Food manufacturing--			Plus income from new jobs
Meat and poultry products	+14,352	+17,694	800 969
Dairy products	+7,599	+8,579	Minus increases in taxes and savings ..
Grain mill products ..	+4,250	+4,653	17,394 18,089
Bakery products	+3,203	+4,101	Equals change in consumption expenditures
Canned and pre-served foods	+2,249	+2,937	+190,974 +190,448
Other foods and beverages	-244	+2,988	Nonparticipant household sector:
Total	+31,409	+40,952	Income from new jobs ..
Nonfood manufacturing ..	-6,231	+6,968	-54,217 28,147
Total manufacturing ..	+25,178	+47,920	Plus decrease in taxes and savings ..
Local and suburban	+599	+873	19,620 3,455
transport			Minus tax increase to fund bonus stamps
All other transportation ..	-3,122	+1,950	207,568 136,600
Communications	-5	+2,022	Equals change in consumption expenditures
Gas, electric, water and sanitary utilities	+524	+6,022	-242,165 -104,998
Wholesale trade:			Change in combined sector consumption expenditures (GSP) ...
Food	+10,534	+12,484	-51,191 +85,450
All other	-7,601	+444	
Total wholesale	+2,933	+12,928	
Retail trade:			
Food stores	+23,311	+28,207	
Eating and drinking places	-5,839	-1,195	
All other	-16,143	-241	
Total retail	+1,329	+26,771	
Finance, insurance and real estate	-5,652	+10,385	
Personal services	+657	+2,266	
Physicians and dentists ..	-3,361	-75	
Hospitals and labs	+1,140	+3,814	
Other services	-13,042	-344	
Total change in business receipts	+22,283	+139,038	

^aThe nonparticipant household's consumption function was adjusted prior to distribution of bonus stamps to the food stamp household sector by increasing taxes. Under (A) the amount of tax equalled \$207,568 (000) and under (B) \$136,600 (000). For the mechanics of adjusting each nonparticipant household sector's cells, see [4, p. 8].

physicians and dentists (\$.025 million); and other services (\$.344 million).

These data are consistent with the proposition that expenditure of bonus food stamps funded by a tax increase will result in a net economic gain in business receipts for any economy as a whole, although some sectors will incur a loss of output.

These data also support the second proposition that while impacts are similar for an economy and its constituent subeconomies, they are not of the same size. Also, the subeconomies may have sectors with gains (losses) in business receipts which do not carry forward to the national economy. Tables 3 and 4 show that for Texas, Comparison A (see page 3) local and suburban transportation; gas, electric, water and sanitary utilities; personal services, and hospitals and laboratories are illustrative. For Texas, Comparison B, all other transportation; communications; financing, insurance and real estate, likewise reported positive gains in business receipts which these sectors did not experience at the national level.

Comparisons A and B also demonstrate the sensitivity of the subeconomy to tax assumptions. Data comparisons for A and B, which show the magnitude not only of business receipts, but also of gross product, were directly and substantially affected by the amount of tax increase levied to finance food bonus stamps. When \$136,000 million of taxes were collected to fund the Texas bonus stamps, business receipts increased by \$116.8 million more than when the tax increase amounted to \$207.6 million. The gross state product was \$85.5 million with the lower tax increase, but a negative \$51.2 million with the greater tax increase.

With the smaller increase, the sectors with positive gains each received larger increments in business receipts. Those with negative business receipts had either the size of their negative business receipts reduced or the change in business receipts become positive. Other services illustrates the former, shrinking from a negative \$13.0 million to \$0.344 million. Nonfood manufacturing exemplifies the latter. This sector shifted from a negative \$6.2 to a positive \$7.0 million increment in business receipts. These data are consistent with the third proposition, *viz.*, the size of the tax increase to fund food bonus stamps substantially affected the amount of change in business receipts.

Relative Impacts at State and National Levels

The absolute dollar changes in business receipts incurred by the sectors in Texas, of course, were smaller than those experienced by the national economy. One measure which identifies sector impact on a comparable basis is the ratio: change in business receipts/total food bonus stamps disbursed. For most sectors the change in business receipts for each dollar of bonus stamps disbursed was greater for the U.S. than for Texas. However, there were a few sectors such as local and suburban transportation, and physicians and dentists, where the inverse occurred.

Table 5 presents the Texas-U.S. comparison for five major sectors. In each instance, the change in business receipts per dollar of bonus stamps is greater for the U.S. than for the Texas economy. In Comparison A, the greatest difference was for retail trade. Texas received +0.6 cents per dollar of bonus stamps distributed, whereas nationally, this sector received +17.0 cents. In Comparison B, the greatest range was food manufacturing, where in Texas, each bonus stamp dollar distributed resulted in 19.7 cents of increased business receipts while nationally, it amounted to 29.8 cents.

The explanation of why the impact for the nation typically was greater than for Texas involves four primary possibilities: (1) differences in import

TABLE 5. NET GAINS OR LOSSES PER DOLLAR OF FOOD BONUS STAMPS DISBURSED, FISCAL YEAR 1974, TEXAS AND THE U.S.

Sector	Gain or loss per dollar of food bonus stamps distributed		
	Texas		U.S.
	A ^a /	B ^b /	
	Cents		
Agriculture, forestry and fisheries	+7.9	+10.3	+15.0
Food manufacturing	+15.1	+19.7	+29.8
Nonfood manufacturing ..	-3.0	+3.4	-10.3
Wholesale trade	+1.4	+6.2	+9.2
Retail trade	+0.6	+12.9	+17.0

^aIn Comparison A, taxes of the nonparticipant household sector were increased by \$207.6 million to fund the food bonus stamps.

^bIn Comparison B, the taxes were increased by \$136.6 million.

leakages; (2) differences in household sector consumption functions; (3) a shift in a consumption function due to the tax increase; and (4) the size of the tax increase.

The comparative leakages discussed above in the explanation of differences in the magnitude of Texas and U.S. multipliers apply likewise to the differences in the dollar changes in business receipts per dollar of bonus stamps expended. Table 2 provides the comparative leakages for the five major sectors of Table 5. For example, the food manufacturing sectors for Texas averaged a leakage of 19.5 percent, where for the U.S., the corresponding figure was 1.5 percent, etc.

Table 6 presents the direct requirements coefficients for both nonparticipant and participant household sectors: for the Table 5 sectors, these direct requirement coefficients show for each additional dollar received by each of these household sectors the amount the sector will purchase from each of the listed sectors. Thus Texas, prior to both the tax increase and food stamp disbursement, showed that the nonparticipant household sector bought 0.004 dollar's worth of products and/or services from the Texas agriculture, forestry and fisheries sector. The corresponding statistic for the participant household sector was \$0.008 dollars.

Comparisons of these data between Texas and the U.S. provide evidence needed to discuss possibilities (2) and (3). Comparisons of the base period figures for Texas and the U.S., for example, for nonparticipant household sectors of each of these economies, show the former would buy 0.004 dollars from the agriculture, forestry and fisheries sector, and the latter 0.009 dollars out of each dollar of added expenditures by the NPHH sector. Similar comparisons for each of the five major sectors from

TABLE 6. COMPARISON OF DIRECT REQUIREMENTS COEFFICIENTS FOR TEXAS AND THE U.S.,
BASE AND FISCAL YEAR 1974

Sector	Texas				U.S.			
	NPHH ^{a/}		PHH ^{b/}		NPHH		PHH	
	Base	FY 1974	Base	FY 1974	Base	FY 1974	Base	FY 1974
	Dollars							
Agriculture, forestry, and fisheries .....	.004	.004	.008	.006	.009	.009	.031	.027
Food manufacturing .....	.049	.049	.095	.163	.104	.103	.124	.171
Nonfood manufacturing ...	.045	.045	.049	.037	.141	.140	.129	.112
Wholesale trade .....	.055	.055	.074	.082	.043	.042	.027	.047
Retail trade .....	.158	.157	.181	.209	.130	.130	.203	.224
Finance, insurance, and real estate .....	.065	.064	.099	.075	.152	.151	.190	.164

^aNonparticipant household sector.

^bParticipant household sector.

which the NPHH sector buys show important differences.

Corresponding figures for the participant household sector are 0.008 dollars for Texas and 0.031 dollars for the U.S. Consequently, without either a tax increase or disbursement of bonus stamps, any increased purchasing power obtained by the two household sectors would result in different impacts on business receipts within Texas, and presumably each of the other states, than on the nation.

Given the difference in consumption function prior to any program-related changes, will the tax increase and disbursement of such tax increase funds by means of bonus food stamps affect the household sectors' consumption functions? Table 6 shows that the nonparticipant household sector (NPHH) had very little change either for Texas or the U.S. This may be explained by the manner in which the tax increase was taken.⁵ In contrast, the participant household sector's (PHH) consumption function was altered because (1) its total inputs were increased by

the amount of the bonus stamps issued, and (2) bonus stamps were distributed 55 percent to food sectors and 45 percent to nonfood sectors.⁶

Within the food sectors, sector share proportions were used to distribute 55 percent of bonus stamps among the food sectors; and in like manner, the nonfood sectors each received their share of the 45 percent which was distributed to them because of expenditure leakages.

For these reasons the PHH's consumption function for both Texas and the U.S. was affected. Consequently, prior to receiving food bonus stamps, out of each dollar received the PHH sector bought 0.095 dollars of product/services from the food manufacturing sector and afterwards, 0.163 dollars. At the U.S. level, the corresponding figures were .124 and .171 dollars.

Gross State Product

Comparison A resulted in a negative gross state product of \$51.2 million. The explanation appears to

⁵For a step-by-step description for the U.S. model, see [4, p. 8]. For Texas, the procedure was identical. However, Texas did have an independent federal government sector, whereas the U.S. model had a sector including savings as well as the federal government sector, etc.

For Texas, the amount of tax increase to fund bonus food stamps was deducted from every NPHH sector cell except that for the federal government so as to leave the relative shares of total inputs of each sector the same prior to adding amounts deducted to the NPHH's federal government sector cell. Of course, total inputs for the NPHH's column were kept constant.

Consequently, while the total of each sector cell divided by total inputs yielded a different set of sector proportions than existed prior to the adjustment, the relationship among the sectors from which deductions had been made remained comparable to what they were before the adjustment occurred.

⁶Technically, each bonus stamp is spent on food. In reality, there is a possibility for some households to substitute nonfood for food purchases. This can occur when a household normally spends a greater percent of its net income on food than it is required to use to purchase food stamps in order to participate in the program. If prior to participation in the program a household spent 35 percent of its net income on food, and to participate it must spend 25 percent to buy food stamps prior to receiving its bonus coupons, that household will have 10 percent of its income formerly spent on food to spend on either food or nonfood items.

Robert Reese [5], using several data sources, determined that the actual net percent of bonus stamps being spent on food ranged from 40-65 percent. Most observations were about 55 percent. Personal discussions with Reese resulted in acceptance of the 55 percent of the bonus dollar being spent for food and 45 percent for nonfood items.

If currently proposed legislation passes, the bonus stamps will be given free of charge. Such a change could result in a change in expenditure patterns of the food stamp household sector.

be: (1) size of the tax increase upon the NPHH sector, and (2) the consumption function of that sector. Importance of the size of the tax increase is shown by results from Comparison B. For B, the gross state product equalled a positive \$85 million.

Importance of the Texas consumption function for the NPHH sector is shown by the fact that even with the stable consumption function, expenditures for services purchased from itself varied greatly. Thus, prior to either a tax increase or bonus stamp disbursement, the NPHH sector bought \$8,295.040 million from itself. Under Comparison A, this figure dropped to \$8,244.390—a decline of \$50.650 million. Under Comparison B, purchases from itself amounted to \$8,276.843 million, a drop of \$18.197 million, but \$32.453 million more than under Comparison A.

CONCLUSIONS

Expenditure of bonus food stamps resulted in net gains of business receipts for both Texas and the U.S. The size of the gains, particularly in Texas, were

directly affected by the amount of tax increase levied to fund the bonus stamps. The two economies, while showing similar patterns, did differ. Texas had some sectors, e.g., personal services, which experienced positive increments in business receipts, whereas the U.S. reported a loss for the same sectors. Import leakages, size of the tax increase to fund bonus stamps, differences in household sectors' consumption functions, and impact of an income transfer upon the PHH sector's consumption function explained why the impact of expenditures of bonus food stamps was greater nationally than in Texas.

Sensitivity of the Texas economy to a tax increase was substantial. Results suggest that while an analysis of a program's impact on a state will highlight that state's comparative advantages, tax assumptions will affect results substantially. Neither the Texas nor the U.S. results can be used to make projections for other states. Input-output models structured for each of the other states would produce substantially different results.

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