The Effects of Aggregate Unemployment Insurance Benefits in the U.S. on the Operation of a Local Economy
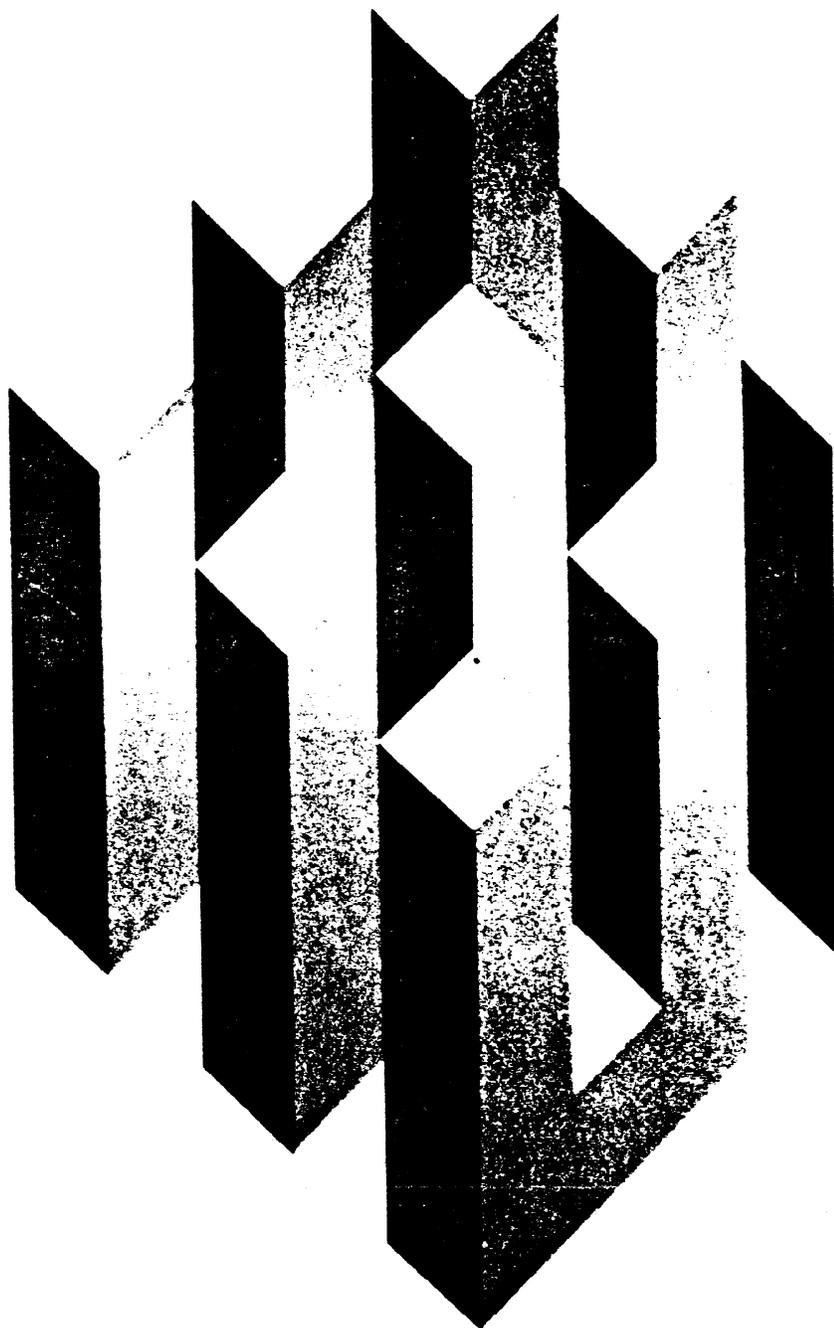
The Effects of Aggregate Unemployment Insurance Benefits in the U.S. on the Operation of a Local Economy

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Introduction

The efficacy of economic policy ultimately depends upon having some notion of its local and regional effects. Although researchers may enjoy a measure of success in modeling the U.S. economy for purposes of forecasting and policy simulations, this effort in and of itself reveals little about the geographical impacts of various economic measures. Thus for example, an expansionary fiscal and monetary policy may bring economic relief to some depressed areas and unsettling inflation in other areas.

While for some analytical purposes it is useful to view the national economy as one vast market, in reality it is a collection of numerous local markets varying in degree of interdependence with each other. The Unemployment Insurance (UI) system in the U.S. as a joint federal-state program is uniquely concerned with the local effects of the functioning of the UI system. Research on the impacts of the UI system at the level of the local labor market is indispensable to obtaining a better understanding of how the UI system can be continually adapted to structural changes in the American economy in order to fulfill the policy objectives set forth by Congress and the various state legislatures.

In a previous study by the authors [5], the effects of local UI benefits on a local economy were investigated. A computer simulation of a quarterly forecasting model for a local economy was used to obtain estimates of the effects of local UI benefits on the local economy. A baseline run was made for an eight quarter period in which local UI benefit disbursements under the regular state program were set equal to their historical values. The model's predictions of selected measures of local economic activity under the baseline run were compared with its predictions from a run in which local UI payments were set equal to zero. The differences in the model's predictions between

the two runs constituted the estimated effects of local UI benefits on the local economy.

The results from the study indicated very definite, but modest, effects of local UI benefits on local economic activity. In the absence of these local UI benefit disbursements, it is estimated that local sales, sales tax revenues, disposable personal income, employment, labor force, and population would be reduced and that the number locally unemployed and the local unemployment rate would be higher. In order to isolate the effects of local UI disbursements it was necessary to assume that the UI system continued to operate normally outside of the local area. Thus it is not surprising that the population size of the local area would be affected via changes in net migration in response to the changed relative attractiveness of employment conditions of labor markets outside the study area.

In the absence of UI benefit payments universally, the relative attractiveness of other labor markets would diminish. As a result the tendency toward net outmigration from the local area is reduced. The universal absence of UI benefits would also produce a different industrial pattern of employment and sales reductions from those that would obtain in the absence of only local UI benefits. This difference will depend on the nature and extent of the local area's "exports" of goods and services to other areas. For example, the travel/tourism sectors would be more vulnerable to the universal absence of UI benefits than to the local absence of such benefits. Another example might be an export mining industry (e.g., coal or copper) in a local labor market. Normally, such a mining sector's sales would not be affected by the presence or absence of local UI benefits because their output is marketed nationally. However, their sales would be affected by the operation of the UI system nationally to the extent that their output is used in the production of goods

and services that are sensitive to consumer demand. Consequently, the local employment in the mining sector would be affected via the effects of UI benefits elsewhere on consumer incomes and hence consumer demand.

In this report we present our estimate of the effects of UI benefit payments locally and nationally on the local economy of the Phoenix, Arizona SMSA (Maricopa County). Among the reported estimated effects of UI benefit payments are those pertaining to local sales, employment, unemployment, labor force, unemployment rate, population, and disposable personal income. These effects were obtained from computer simulations of the Maricopa County annual forecasting model and the Data Resources Incorporated (DRI) quarterly forecasting model for the U.S. The basic annual Maricopa County model was previously developed by the principal investigators under Department of Labor Contract [4]. The Maricopa model incorporates certain national variables that are forecasted by the DRI model.

Computer simulations were conducted with the Maricopa and DRI models for the two year period 1975-76. During this period roughly $190 million in UI benefits were paid out in Maricopa County - $110.5 million in 1975 and $79.7 million in 1976. Nationally, approximately $32.9 billion in UI benefits were paid out during the period 1975-76 - $17.4 billion in 1975 and $15.5 billion in 1976. The population of Maricopa County averaged 1.2 million persons and disposable personal income averaged $6.5 billion a year.

A control simulation was run with the Maricopa and DRI models for the period 1975-76 in which UI benefits nationally and in Maricopa County were set equal to their historical values. Next, three additional simulations were conducted: (A) All UI benefits payments were set equal to zero; (B) UI benefit payments nationally were set equal to their historical values while UI benefit payments in Maricopa County were set equal to zero; and (C) UI benefit

payments in Maricopa County were set equal to their historical values while UI benefit payments nationally were set equal to zero. Differences between the predictions of the models for the control simulation and simulation (A) yielded estimates of the effects of the absence of UI benefit payments on the local economy of the Phoenix SMSA and on the national economy. Differences between the predictions of the Maricopa model for the control simulation and simulation (B) yielded estimates of the effects of the absence of UI benefit payments locally, but not nationally, on the local economy of the Phoenix SMSA. Finally, differences between the predictions of the Maricopa model for the control simulation and simulation (C) yielded estimates of the effects of the absence of UI benefits nationally, but not locally, on the local economy of the Phoenix SMSA.[1] The last two sets of simulation comparisons are not the only ones which might be used to identify the separate impacts of national and local UI payments. However, as discussed in the Appendix, several other reasonable approaches would be expected to yield very similar numbers to those here. In all of these simulations it was assumed that UI contributions continued to be collected during the absence of UI disbursements.[2]

Three alternative methods were used to obtain estimates of the impact of UI benefit payments on local sales: (1) the sales/employment ratio method, (2) the short run labor cost method, and (3) the geometric mean of the estimated sales obtained from methods (1) and (2). Under method (1) estimated sales changes for each industry are obtained by multiplying the industry's sales/employment ratio by the estimated change in the industry's employment. Under method (2) estimated sales changes for each industry are obtained by multiplying the industry's total labor cost/total sales ratio by the estimated change in the industry's employment.[3] All three sets of estimates are presented in the report but only the method (3) estimates are discussed in the text.

The remainder of the report is organized as follows: Part I presents the estimated impacts of UI benefit payments nationally; Part II presents the estimated impact of UI benefit payments on sales and employment in the local private sector; Part III presents the estimated UI impacts on the selected local economic and demographic variables; Part IV compares each local industry in terms of its contributions to and gains from the UI system; and Part V is a summary and conclusion. The appendix at the end of the report discusses the definition of local and national impacts and contains data pertaining to estimated labor costs and sales/employment ratios.

I. UI Benefit Payments and the National Economy

The estimated effects of UI benefits on the U.S. economy in 1975 and 1976 are reported in Tables 1A and 1B. These estimates were obtained from the DRI model by simulating the effects of a two year absence of UI benefit payments. Among the estimated effects are the lagged effects of 1975 UI benefits in 1976.

It is estimated that in 1975 there would have been 314 thousand fewer jobs in the absence of UI benefits - a percentage change of 0.4%. This represents 18 jobs per $1 million in UI benefits. The largest absolute and percentage effects were found in manufacturing and trade. Both industries experienced the creation of 6 jobs per $1 million in UI benefit payments which represents a 0.6% employment change for both industries. In 1976 UI benefits accounted for the existence of 404 thousand jobs. Of these, 141 thousand were generated by the lagged effects of 1975 UI benefits and the remaining 263 thousand were the direct result of 1976 UI benefit payments. The overall percentage employment increment in 1976 was 0.5%. The largest percentage employment increase was in trade (0.9%), followed by construction (0.8%) and transportation,

communications, and utilities (0.7%). Over the two year period 1975-76, there were a total of 718 thousand jobs which owed their existence to UI benefit payments. This represents an average of about 23 jobs per $1 million (1975 dollars) in UI benefit disbursements. The average percentage increment in employment over the period was 0.5%. Those industries experiencing the largest percentage gains in employment from UI benefit payments over the period were trade (0.8%), construction (0.6%), manufacturing (0.6%), and transportation, communications, and utilities (0.6%).

In 1975 UI benefits raised constant dollar (1972) GNP, disposable income, and consumption by $11 billion, $18 billion and $10 billion, respectively. These figures correspond to percentage increments of 0.9%, 2.1%, and 1.3% for GNP, disposable income, and consumption, respectively. These estimates imply that for each dollar of UI benefit payments in 1975, GNP was raised by $0.60, disposable income was increased by $1.02, and consumption was raised by - $0.57. UI benefits accounted for a $1 billion (1972 dollars) increase in non-residential fixed investment in 1975 which translates to an increase of 0.9% and a $0.06 rise for each dollar of UI benefits. New mortgage commitments were reduced by $300 million (1972 dollars) or 0.6%. Housing starts were slightly increased (1,000 more starts or a 0.1% increase). The effects on the prime interest rate were negligible, but the unemployment rate was lowered by 0.1 percentage point (-1.2% reduction in the unemployment rate).

In 1976, UI benefits increased GNP, disposable income, and consumption by 0.9%, 1.9%, and 1.5%, respectively. Non-residential fixed investment was increased by 1.2%. The prime interest rate was increased by 5.7% while new mortgage commitments and housing starts were reduced by 6.1% and 4.0%, respectively. The unemployment rate was 3.9% lower in 1976 than it would have been in the absence of UI benefits in 1975 and 1976. Over the two year period, the

TABLE 1A

The Effects of UI Benefits on Nonagricultural Employment in the U.S.

Industry	1975			1976							1975 & 1976		
	ΔE	ΔE/ΔUI	ΔE/E	ΔE^m	ΔE^l	ΔE	$\Delta E^m/\Delta UI_{76}$	$\Delta E^l/\Delta UI_{75}$	ΔE/ΔUI	ΔE/E	ΔE	ΔE/ΔUI	ΔE/E
Mining	2	0.1	0.27	2	-3	-1	0.1	-0.2	-0.1	-0.13	1	0.0	0.07
Construction	16	0.9	0.45	13	15	28	0.8	0.9	1.8	0.78	44	1.4	0.62
Manufacturing	106	6.1	0.58	89	32	121	5.8	1.8	7.8	0.64	227	7.1	0.61
Trans., Comm., & Utilities	23	1.3	0.51	19	14	33	1.2	0.8	2.1	0.72	56	1.8	0.61
Trade	108	6.2	0.63	91	63	154	5.9	3.6	10.0	0.87	262	8.2	0.75
Fins., Ins., & Real Estate	12	0.7	0.29	10	3	13	0.7	0.2	0.8	0.30	25	0.8	0.30
Services	41	2.4	0.30	34	-2	32	2.2	-0.1	2.1	0.22	73	2.3	0.26
State & Local Government	6	0.3	0.05	5	19	24	0.3	1.1	1.6	0.20	30	0.9	0.12
Total	314	18.0	0.41	263	141	404	17.0	8.1	26.1	0.51	718	22.5	0.46

ΔE is the employment difference (in thousands) due to UI benefits.

ΔE/ΔUI is the employment change per $1 million in UI benefits in 1975 dollars for 1975 and 1975 & 1976, in current dollars for 1976.

ΔE/E is the percentage change in employment due to UI benefits.

m is the marginal effects of 1976 UI benefits.

l is the lagged effect of 1975 UI benefits in 1976.

TABLE 1B

The Effects of UI Benefits on Selected Measures of Economic Activity for the U.S. Economy[a]

Variable (X)	1975					1976					1975 & 1976		
	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX^m	ΔX^1	ΔX	$\Delta X^m/\Delta UI_{76}$	$\Delta X^1/\Delta UI_{75}$	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$
GNP (billions of 1972 dollars)	$10.5	0.60	0.87	$ 8.8	$ 2.4	$11.2	0.57	0.14	0.72	0.88	$21.7	0.68	0.88
Disposable Income (billions of 1972 dollars)	$17.7	1.02	2.06	$14.9	$ 2.0	$16.9	0.96	0.12	1.09	1.90	$34.6	1.08	1.98
Consumption (billions of 1972 dollars)	$ 9.9	0.57	1.28	$ 8.3	$ 3.6	$11.9	0.54	0.21	0.77	1.45	$21.8	0.68	1.37
Non-Residential Fixed Investment (billions of 1972 dollars)	$ 1.0	0.06	0.88	$ 0.9	$ 0.5	$ 1.4	0.06	0.03	0.09	1.18	$ 2.4	0.08	1.03
New Mortgage Commitments (billions of 1972 dollars)	$-0.3	-0.02	-0.56	$-0.3	$-5.3	$-5.6	-0.02	-0.31	-0.36	-6.05	$-5.9	-0.18	-4.04
Housing Starts (thousands)	1.0	0.06	0.09	0.9	-61.9	-61.0	0.06	+3.56	+3.95	-3.98	-60.0	-1.88	-2.23
Prime Interest Rate	0.01%	0.00	0.13	0.01%	0.38%	0.39	0.00%	0.02%	0.03%	5.70	0.40%	0.01%	2.72
Unemployment Rate	-0.10%	-0.01	-1.18	-0.15%	-0.15%	-0.30	-0.01%	-0.01%	-0.02%	-3.90	-0.40%	-0.01%	-2.47

[a] The various measures of UI effects in the table are constructed in the same manner as those reported in Table 1A, except that $\Delta X/\Delta UI$ is the change in the variable per $1 billion change in UI benefits.

presence of UI benefit payments were responsible for average percentage incre-
ments of 0.9%, 2%, and 1.4% for GNP, disposable income, and consumption,
respectively. Non-residential fixed investment experienced an average percen-
tage increase of 1% as a result of UI benefit payments. The prime rate of
interest averaged 2.7% higher over the period while new mortgage commitments
and housing starts averaged 4% and 2.2% less, respectively. Finally, the
disbursement of UI benefit payments was responsible for an average reduction
in the unemployment rate of 2.5%.

II. Local Sales and Private Wage and Salary Employment

The effects of local and national UI benefit payments on Maricopa County
employment and sales in 1975 and 1976 are reported in Tables 2A and 3A. It is
estimated that 7,924 jobs in the private sector in 1975 owed their existence
to the disbursement of UI benefits. This is an increment of approximately
2.2% of 1975 private wage and salary employment that is attributable to the
presence of UI benefit payments. The local UI system generated 72 local jobs
per $1 million in local UI benefits in 1975. The largest absolute employment
effect was in local services -- about 19 additional jobs per $1 million in
local UI benefits. However, the proportionate employment effects of UI bene-
fits were the largest in construction, 5.8%, followed by manufacturing,
2.6%. In 1976 there were 10,913 local private sector jobs that were generated
by UI benefit payments locally and nationally. Of these jobs, 5,025 were the
result of lagged effects of 1975 UI benefit payments. The remaining 5,888
jobs are directly attributable to 1976 UI benefit payments.

It is interesting to compare the Maricopa County employment response to UI
benefits with that of the nation as a whole. Per dollar of UI benefits paid
out, clearly there is a larger job impact in Maricopa. For example, in 1975,

there were nearly 72 local jobs generated per $1 million in <u>local</u> UI benefits in Maricopa County while the corresponding figure for the U.S. as a whole was 18 jobs per $1 million UI benefits. As noted in the Introduction, this possibility of geographical variation in impacts is what makes regional analysis important in policy evaluation.

There are a number of factors which may influence the magnitude of jobs created per $1 million local UI benefits across subnational regions:

1) Local secondary multiplier impacts may differ as a result of regional variations in either marginal propensities to spend UI benefits or, more generally, marginal propensities to consume disposable income. If persons in area A immediately spend all of their UI benefits while those in area B spend only 80% of their benefits, we expect a larger employment impact per dollar in A than B.

2) Some local areas are more fully integrated or self-sufficient economic communities than others and this may also affect the magnitude of secondary multiplier impacts. For example, suppose area A has a large local-serving food processing industry while area B imports all its food. If a significant fraction of UI benefits are spent on food, the area A food processing industry will be stimulated, while no similar manufacturing repercussions will occur in area B.

3) The external impact of the UI system, i.e., the local impact of national UI benefit payments, may differ across areas. For example, if national UI benefits stimulate manufacturing investment nationally, employment will increase in those local areas which produce investment goods for manufacturing.

4) Prices vary across regions creating geographical differentials in the real value of a dollar of UI benefits.

5) Two areas may be identical in terms of items 1)-4), but still have differing apparent employment impacts per $1 million UI benefits because of differences in benefits actually paid out. For example, suppose areas A and B each gain 200 jobs because of the direct and indirect external impact of the UI system. Suppose further that the local multiplier effect of local UI benefits is 10 jobs per $1 million benefits. If area A pays out $10 million in local UI benefits, its total number of jobs derived from the UI benefits, both internally and externally, is 200 + 10(10) or 300 jobs. Dividing the 300 jobs by the $10 million local benefits paid out converts to a figure of 30 jobs per $1 million local UI benefits. However, if area B pays out only $5 million in local UI benefits, the total jobs derived from the internal and external UI benefits are 200 + 5(10) or 250, an apparent 50 jobs per $1 million local UI benefits.

6) Migration impacts of UI benefits may be much larger for individual subnational areas than the nation as a whole. For example, suppose UI benefits stimulate manufacturing employment in area A and the manufacturing employment increase in turn generates migration into the area. The latter will have secondary multiplier effects on local construction, income, services, etc.

In considering the 1975 Maricopa figure of 72 local jobs per $1 million UI benefits, items 1) and 3) above are especially significant.[4] In the national model simulations, the consumption response to the increase in disposable income is not particularly strong. When UI benefits are paid out in the national economy, disposable income increases $18 billion dollars, but personal consumption expenditures rise only $10 billion, i.e., a large fraction of the increase in disposable income is saved. Without local consumption/savings data available, it is impossible to estimate Maricopa's increase in

consumption induced by the rise in disposable income from UI benefits. However, given the low national figures and Maricopa's somewhat lower than average real per capita disposable income, a stronger consumption impact in Maricopa would not be surprising.

The Maricopa economy is also particularly cyclically sensitive. Almost half of its manufacturing employment is in the very investment-sensitive machinery industries. In the national simulations, the payment of UI benefits increases real national nonresidential fixed investment by 1% and this alone increases Maricopa SIC 36 employment 2% or 400 jobs. Thus given Maricopa's manufacturing base, it is reasonable to expect this particular local economy to perhaps be more sensitive than others to the stimulating effects of UI benefits in the rest of the nation.

It is estimated that 1975 UI benefit payments generated $187.2 million in local sales. This represents an increase in local sales of $1.68 for every dollar of 1975 local UI benefit payments. The 1975 UI effects represent a local sales increment of 1.0%. Local construction sales exhibited the largest percentage effect of UI spending -- 3.5%. In 1976 the local sales effect of UI benefits reached $274.6 million. Of this amount, $127.3 million resulted from the lagged effects of 1975 UI disbursements and 147.3 million resulted directly from 1976 UI benefit payments.

Table 4A reports the accumulated effects of 1975 UI benefits compared with the absence of UI benefits locally and nationally. By 1976, 12,949 local jobs over the two-year period were generated by 1975 UI benefits. This represents about 117 jobs per $1 million dollars of local UI benefit payments. Over this period, UI benefit payments were responsible for $307.4 million in sales (1975 dollars) or $2.60 in sales per $1 in 1975 UI benefits.

A two-year summary of the effects of national and local UI benefits on the local economy of Maricopa County is given in Table 5A. Over the two-year period 1975-76, 18,837 jobs were generated by UI benefit payments. This represents an increment of 101 local jobs per $1 million in UI benefits (1975 dollars). Over this period, UI benefits raised local private wage and salary employment by about 2.6%. These employment effects were largest in services and manufacturing which each exhibited an increment of approximately 25 jobs per $1 million in UI benefits, or an approximately 3% increment in employment as a result of UI benefit payments in 1975 and 1976. About $446.4 million in local sales were generated by UI benefits. This represents a sales increment of 1.2%, or $2.40 in sales per $1 in local UI benefit payments. Overall, local construction experienced the largest percentage increase in sales, 3.7%, followed by local services, 1.8%.

The effects of only local UI benefit payments on Maricopa County employment and sales in 1975 and 1976 are reported in Tables 2B and 3B. These tables compare simulations in which national benefits remain constant at their historical levels, but locally paid benefits are removed in one simulation and kept at their historical levels in the other. It is estimated that 4,947 local jobs in 1975 were generated by local UI benefits. This represents an increment of 45 local jobs per $1 million of local 1975 UI benefits which yields a percentage change 1.4% above what employment would have been in the absence of local (but not national) UI benefit payments. The largest absolute increment in local industry employment is for services (13 jobs per $1 million in local UI benefits); however, the largest percentage increment is for con-struction, 4.1% versus the next highest of 1.7% in services. In 1976, local UI benefits generated 5,732 additional jobs in Maricopa County. Of these,

2,364 were the result of the lagged effects of 1975 local UI benefit payments, and 3,368 were directly the result of 1976 UI benefit payments.

In 1975, local UI benefits alone accounted for $115.1 million in local sales, or an increment of $1.04 in local sales per $1 increment in local UI benefits. This represents an estimated increase in local sales of 0.6% as a result of the disbursement of local UI benefits. Local construction sales exhibited the largest percentage effect, 2.5%, followed by services, 1.2%. In 1976, local UI benefits accounted for $140.5 million in sales. The lagged effects of 1975 local UI benefits generated $57.6 million in 1976 sales, and the remaining $82.9 million in sales were due to 1976 UI benefits.

Table 4B presents the cumulative effects of 1975 local UI benefits compared with absence of local benefits but in the presence of national UI benefits. By 1976, 7,311 local jobs were generated by 1975 local UI benefits, or about 66 jobs per $1 million in local UI benefits. Over the two-year period, local 1975 UI benefits were responsible for local sales of $169.5 million (1975 dollars), or approximately $1.53 in sales per $1 of local UI benefits.

A two-year summary of the effects of local UI benefits on the local economy is given in Table 5B. Over the period 1975-76, 10,679 jobs were created by local UI benefits. This comes out to 57 jobs per $1 million in local UI benefits (1975 dollars). The percentage increment in local employment was 1.5%. The largest absolute effect by industry was 17 jobs per $1 million in UI benefits in the case of services. The largest industry percentage increment in employment was 4.6% for construction. Local sales of $247.7 million were generated by local UI benefits over the two-year period, or $1.34 in local sales for every $1 in local UI benefits. The estimated increment in sales was 0.6%. Construction sales enjoyed the largest percentage increase over the period, 2.7%, followed by services, 1.2%.

Estimates of the effects of the national system of UI benefits on employ-
ment and sales in the Phoenix SMSA in the absence of local UI benefit payments
are presented in Tables 2C, 3C, 4C, and 5C. From Tables 2C and 3C, it is
evident that the existence of a national UI system stimulates the local
economy independently of locally paid UI benefits. The national system
accounted for 3085 jobs and $74.6 million in sales in 1975. These correspond
to increases of .9% and .4% in employment and sales respectively. Not
surprisingly, much of the impact of the national system in the Maricopa
economy operates through the cyclically-sensitive export-base machinery
manufacturing. Of the total 3085 local jobs generated by the national system,
manufacturing accounted for about one-third, 1053.

In 1976, a total of 5256 jobs and $136.0 million in sales in Maricopa were
attributable to the national UI system. This total is approximately evenly
divided between lagged effects of the 1975 benefits and marginal effects of
the 1976 benefits. Note that in 1976, compared with 1975, employment ac-
counted for by the national UI system rose for every private employment cate-
gory except construction. In the national DRI simulation the presence of the
national UI system stimulates the economy causing a rise in interest rates
which in turn tends to reduce residential construction. For example, in the
DRI simulations, by fourth quarter 1976, national housing starts are 6.2%
higher without the national UI benefits than with them. Since Maricopa County
has generally been an area of high population growth, it has been character-
ized by significant amounts of speculative residential construction. The
latter is particularly sensitive to both short-run variations in expected
population growth and national credit market conditions. Not only does the
presence of the national UI system tend to tighten credit markets, but, as
discussed below in Section III, it also tends to reduce slightly net migration

into Maricopa County. These two factors together tend to dampen the otherwise stimulative effect of the national UI system on the Maricopa economy. Consequently, unlike the other employment sectors, local construction employment does not show an increased expansionary effect of the national UI system in 1976 over 1975. The construction employment attributable to the national UI system, although positive in 1976, is less than in 1975.

Over the two year period 1975-76, the cumulative effects of 1975 national UI benefits were to raise local employment and sales by 5,759 and $140.5 million. These figures are reported in Table 4C. Again in the case of local manufacturing the effects are particularly strong. The cumulative effects of 1975 national UI benefits were 2,267 manufacturing jobs or 130.5 jobs per billion dollars of national UI benefits. Maricopa manufacturing sales rose $59.9 million in response to the cumulative effect of 1975 national UI benefits, or $3.45 per $1000 of national UI benefits.

A two year summary of the effect of the national UI system on the local economy is presented in Table 5C. Overall, local private sector employment rose 1.14% as a result of the national UI benefits or almost 261 jobs per billion dollars ($1975) of national UI benefits. In absolute terms, most of the 8341 jobs employment impact in the 1975-76 period occurred in manufacturing (3152 jobs), trade (2109 jobs), and services (1668 jobs). This same ranking is reflected also in sales with manufacturing sales having risen $83.2 million ($1975) as a result of the national UI system in 1975-76, trade sales increased $56.4 million ($1975) and service sales rose almost $24.7 million ($1975).

TABLE 2A

The Effects of Local and National UI Benefits on
Local Nonagricultural, Nonmining, Private Wage and Salary Employment and Sales -
Local and National UI Benefits Versus No UI Benefits

Industry	1975 ΔE	1975 ΔS($1000) (1)	(2)	(3)	1976 ΔE	1976 ΔS($1000) (1)	(2)	(3)
Construction	1,499	$ 63,945.8	$ 22,666.4	$38,071.3	1,715	$ 73,221.9	$ 26,841.5	$ 44,332.7
Manufacturing	1,885	94,244.3	26,684.1	50,148.0	2,773	143,755.1	41,420.3	77,164.6
Trans., Comm., & Utilities	350	28,468.3	5,783.4	12,831.4	362	32,553.2	6,676.4	14,742.4
Trade	1,632	131,705.7	14,157.6	43,181.4	2,728	235,555	25,621.4	77,686.8
Fin., Ins., & Real Estate	470	27,115.2	5,508.4	12,221.4	680	41,828.2	8,578.2	18,942.3
Services	2,088	45,938.1	20,541.7	30,718.9	2,655	61,872.1	28,174.9	41,752.1
Total	7,924	$391,417.4	$95,341.6	$187,176.0	10,913	$588,785.	$137,313.	$274,620.9

TABLE 2A

(Continued)

Industry	1976				1976			
	ΔE^m	ΔS^m ($1000)			ΔE^l	ΔS^l ($1000)		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	1,092	$ 46,622.9	$ 17,090.9	$ 28,228.1	623	$ 26,559.0	$ 9,750.6	$ 16,104.5
Manufacturing	1,452	75,273.1	21,688.5	40,405.0	1,321	68,482.0	19,731.8	36,759.6
Trans. Comm., & Utilities	257	23,111.0	4,739.9	10,466.3	105	9,442.2	1,936.5	4,276.1
Trade	1,223	105,602.	11,486.4	34,828.0	1,505	129,952.	14,135.0	42,858.7
Fin. Ins., & Real Estate	336	20,668.0	4,238.6	9,359.7	344	21,160.1	4,339.6	9,582.6
Services	1,528	35,608.5	16,215.1	24,029.1	1127	26,263.6	11,959.7	17,723.0
Total	5,888	$306,886.	$75,459.5	$147,316.2	5,025	$281,899.	$61,853.1	$127,304.5

ΔE is the employment difference due to UI benefit payments.

ΔS is the sales difference ($1000) due to UI benefit payments.

m is the marginal effect of 1976 UI benefit payments.

l is the lagged effect of 1975 UI benefit payments in 1976.

(1), (2), and (3) are the three methods of estimating sales effects corresponding to the sales/employment ratio method, the short run labor cost method, and the geometric mean of the sales/employment and short run labor cost estimates, respectively.

TABLE 2B

The Effects of Local UI Benefits on Local Nonagricultural, Nonmining,
Private Wage and Salary Employment and Sales -
Local and National UI Benefits Versus No Local UI Benefits

Industry	1975				1976			
	ΔE	ΔS($1000)			ΔE	ΔS($1000)		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	1,071	$ 45,687.8	$16,194.6	$ 27,201.0	1,306	$ 55,759.7	$20,439.8	$ 33,759.7
Manufacturing	835	41,747.5	11,820.5	22,214.3	676	35,044.5	10,097.5	18,811.2
Trans., Comm., & Utilities	245	19,927.8	4,048.4	8,982.0	224	20,143.4	4,131.1	9,122.2
Trade	969	78,200.2	8,406.2	25,639.2	1,340	115,700.0	12,585.9	38,160.0
Fin., Ins., & Real Estate	371	21,403.8	4,348.3	9,647.3	517	31,801.6	6,522.1	14,401.8
Services	1,456	32,033.5	14,323.6	21,420.4	1,669	38,894.4	17,711.1	26,246.2
Total	4,947	$239,000.6	$59,141.6	$115,104.2	5,732	$297,343.6	$71,487.5	$140,501.1

TABLE 2B

(Continued)

1976

| Industry | ΔE^m | ΔS^m($1000) | | | ΔE^l | ΔS^l($1000) | | |
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	729	$ 31,124.7	$11,409.3	$18,844.4	577	$ 24,635.0	$ 9,030.5	$ 14,915.3
Manufacturing	568	29,445.7	8,484.3	15,805.9	108	5,598.8	1,613.2	3,005.3
Trans., Comm., & Utilities	167	15,017.6	3,079.9	6,800.9	57	5,125.8	1,051.2	2,321.3
Trade	660	56,989.0	6,199.0	18,795.6	680	58,711.0	6,386.9	19,364.4
Fin., Ins., & Real Estate	253	15,562.5	3,191.7	7,047.8	264	16,239.1	3,330.4	7,354.1
Services	991	23,094.3	10,516.3	15,584.2	678	15,800.1	7,194.8	10,662.0
Total	3,368	$171,233.8	$42,880.5	$82,878.8	2,364	$126,109.8	$28,607.0	$57,622.4

ΔE, ΔS, m, and l are as defined in Table 2A.

TABLE 2C

The Effects of National UI Benefits on Local Nonagricultural, Nonmining,
Private Wage and Salary Employment and Sales - Local and
National UI Benefits Versus No National UI Benefits

Industry	1975				1976			
	ΔE	ΔS($1000)			ΔE	ΔS($1000)		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	450	$19,196.5	$6,804.5	$11,429.0	431	$18,401.5	$6,745.6	$11,141.3
Manufacturing	1,053	52,646.8	14,906.3	28,013.7	2,099	108,814.	31,352.8	58,409.1
Trans., Comm., & Utilities	117	9,516.6	1,931.3	4,289.3	140	12,589.6	2,582.0	5,701.5
Trade	699	56,410.7	6,063.8	18,495.0	1,410	121,749.	13,242.7	40,153.3
Fin., Ins., & Real Estate	98	5,653.8	1,148.6	2,548.3	176	10,826.1	2,220.2	4,902.7
Services	688	14,696.7	6,571.8	9,027.7	1,000	23,304.0	10,612.0	15,725.8
Total	3,085	$158,121.	$37,428.2	$74,603.0	5,256	$295,685.	$66,755.3	$136,034

TABLE 2C

(continued)

Industry	ΔE^m	ΔS^m ($1000)			ΔE^l	ΔS^l ($1000)		
		(1)	(2)	(3)		(1)	(2)	(3)
						1976		
Construction	378	$16,138.7	$5,916.1	$9,771.3	53	$2,262.8	$829.5	$1,370.1
Manufacturing	885	45,879.3	13,219.2	24,627.0	1,214	62,935.0	18,133.5	33,782.1
Trans., Comm., & Utilities	98	8,812.8	1,807.4	3,991.0	42	3,776.9	774.6	1,710.4
Trade	587	50,685.7	5,513.1	16,716.3	823	71,063.6	7,729.6	23,437.0
Fin., Ins., & Real Estate	82	5,044.0	1,034.4	2,284.2	94	5,782.1	1,185.8	2,618.5
Services	562	13,096.8	5,963.9	8,837.9	438	10,207.2	4,648.1	6,887.9
Total	2,592	$139,657.	$33,454.2	$66,227.8	2,664	$156,028.	$33,301.1	$69,806.1

ΔE is the employment difference due to national UI benefit payments.
ΔS is the sales difference ($1000) due to national UI benefit payments.
m is marginal effect of 1976 national UI benefit payments.
l is the lagged effect of 1975 national UI benefit payments in 1976.

TABLE 3A

Employment and Sales Changes per Unit of Local UI Benefits for the Nonagricultural, Nonmining, Private Wage and Salary Sector - Local and National UI Benefits Versus No UI Benefits

Industry	1975 ΔE/ΔUI	ΔS/ΔUI (1)	(2)	(3)	ΔS/S (1) (ΔE/E)	(2)	(3)	1976 ΔE/ΔUI	ΔS/ΔUI (1)	(2)	(3)	ΔS/S (1) (ΔE/E)	(2)	(3)
Construction	13.6	0.58	0.21	0.34	5.80	2.05	3.45	21.5	0.92	0.34	0.56	6.53	2.39	3.95
Manufacturing	17.1	0.85	0.24	0.45	2.55	0.72	1.35	34.8	1.80	0.52	0.97	3.58	1.03	1.92
Trans., Comm., & Utilities	3.2	0.26	0.05	0.11	1.47	0.30	0.66	4.5	0.41	0.08	0.18	1.50	0.31	0.68
Trade	14.8	1.19	0.13	0.39	1.41	0.15	0.46	34.2	2.95	0.32	0.97	2.22	0.24	0.73
Fin., Ins., & Real Estate	4.3	0.25	0.05	0.11	1.44	0.29	0.65	8.5	0.52	0.11	0.24	2.01	0.41	0.91
Services	18.9	0.42	0.19	0.28	2.47	1.11	1.66	33.3	0.78	0.35	0.52	2.91	1.33	1.97
Total	71.7	3.54	0.86	1.68	1.98 (2.22)	0.48	1.03	136.9	7.39	1.72	3.44	2.66 (2.90)	0.62	1.34

TABLE 3A

(Continued)

Industry	$\Delta E^m/\Delta UI_{76}$	$\Delta S^m/\Delta UI_{76}$			1976 $\Delta E^l/\Delta UI_{75}$	$\Delta S^l/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	13.7	0.58	0.21	0.35	5.6	0.24	0.09	0.15
Manufacturing	18.2	0.94	0.27	0.51	11.9	0.62	0.18	0.33
Trans., Comm., & Utilities	3.2	0.29	0.06	0.13	0.9	0.09	0.02	0.04
Trade	15.3	1.32	0.14	0.44	13.6	1.18	0.13	0.39
Fin., Ins., & Real Estate	4.2	0.26	0.05	0.12	3.1	0.19	0.04	0.09
Services	19.2	0.45	0.20	0.30	10.2	0.24	0.11	0.16
Total	73.9	3.85	0.95	1.85	45.5	2.55	0.56	1.16

$\Delta E/\Delta UI$ is the change in employment per million dollar change in local UI payments.

$\Delta S/\Delta UI$ is the change in current dollar sales per dollar change in local UI payments (in 1975 dollars).

$\Delta S/\Delta UI$ is the change in constant dollar sales per dollar change in local UI payments (in 1975 dollars).

$\Delta S/S$, $\Delta E/E$ are the percentage change in sales and employment, respectively, and are equal for each

    industry using method (1).

$\Delta E^m/\Delta UI_{76}$ is the change in employment per million dollar change in 1976 local UI payments.

$\Delta S^m/\Delta UI_{76}$ is the change in sales per dollar change in 1976 local UI payments.

$\Delta E^l/\Delta UI_{75}$ is the change in 1976 employment per million dollar change in 1975 local UI payments.

$\Delta S^l/\Delta UI_{75}$ is the change in 1976 sales per dollar change in 1975 local UI payments.

TABLE 3B

Employment and Sales Changes per Unit of Local UI Benefits for the Nonagricultural, Nonmining, Private Wage and Salary Sector - Local and National UI Benefits Versus No Local UI Benefits

Industry	1975							1976						
	ΔE/ΔUI	ΔS/ΔUI (1)	(2)	(3)	ΔS/S (1) (ΔE/E)	(2)	(3)	ΔE/ΔUI	ΔS/ΔUI (1)	(2)	(3)	ΔS/S (1) (ΔE/E)	(2)	(3)
Construction	9.7	0.41	0.15	0.25	4.14	1.47	2.47	16.4	0.70	0.26	0.42	4.97	1.82	3.01
Manufacturing	7.6	0.38	0.11	0.20	1.13	0.32	0.60	8.5	0.44	0.13	0.24	0.87	0.25	0.47
Trans., Comm., & Utilities	2.2	0.18	0.04	0.08	1.03	0.21	0.46	2.8	0.25	0.05	0.11	0.93	0.19	0.42
Trade	8.8	0.71	0.08	0.23	0.84	0.09	0.27	16.8	1.45	0.16	0.48	1.09	0.12	0.36
Fin., Ins., & Real Estate	3.4	0.19	0.04	0.09	1.14	0.23	0.51	6.5	0.40	0.08	0.18	1.53	0.31	0.69
Services	13.2	0.29	0.13	0.19	1.73	0.77	1.15	20.9	0.49	0.22	0.33	1.83	0.83	1.24
Total	44.9	2.16	0.55	1.04	1.21 (1.39)	0.30	0.58	71.9	3.73	0.90	1.76	1.34 (1.53)	0.32	0.63

TABLE 3B

(Continued)

Industry	$\Delta E^m/\Delta UI_{76}$	$\Delta S^m/\Delta UI_{76}$			$\Delta E^l/\Delta UI_{75}$	$\Delta S^l/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	9.1	0.39	0.14	0.24	5.2	0.22	0.08	0.13
Manufacturing	7.1	0.37	0.11	0.20	1.0	0.05	0.01	0.03
Trans., Comm., & Utilities	2.1	0.19	0.04	0.09	0.5	0.05	0.01	0.02
Trade	8.3	0.71	0.08	0.24	6.2	0.53	0.06	0.18
Fin., Ins., & Real Estate	3.2	0.20	0.04	0.09	2.4	0.15	0.03	0.07
Service	12.4	0.29	0.13	0.20	6.1	0.14	0.07	0.10
Total	42.2	2.15	0.54	1.06	21.4	1.14	0.26	0.53

1976

$\Delta E/\Delta UI$, $\Delta S/\Delta UI$, $\Delta S/S$, $\Delta E/E$, $\Delta E^m/\Delta UI_{76}$, $\Delta S^m/\Delta UI_{76}$, $\Delta E^l/\Delta UI_{75}$, and $\Delta S^l/\Delta UI_{75}$ are as defined in Table 3A.

TABLE 3C

Employment and Sales Changes per Unit of National UI Benefits for the Nonagricultural, Nonmining
Private Wage and Salary Sector - Local and National UI Benefits Versus No National UI Benefits

	1975							1976						
		ΔS/ΔUI			ΔS/S				ΔS/ΔUI			ΔS/S		
Industry	ΔE/ΔUI	(1)	(2)	(3)	(1) (ΔE/E)	(2)	(3)	ΔE/ΔUI	(1)	(2)	(3)	(1) (ΔE/E)	(2)	(3)
Construction	25.9	1.10	0.39	0.66	1.74	0.62	1.04	27.9	1.19	.44	.72	1.64	0.60	0.99
Manufacturing	60.6	3.03	0.86	1.61	1.42	0.40	0.76	135.8	7.04	2.03	3.78	2.71	0.78	1.45
Trans., Comm., & Utilities	6.7	0.55	0.11	0.25	0.49	0.10	0.22	9.1	0.81	0.17	0.37	0.58	0.12	0.26
Trade	40.2	3.25	0.35	1.06	0.60	0.06	0.20	91.3	7.88	0.86	2.60	1.15	0.12	0.38
Fin., Ins., & Real Estate	5.6	0.33	0.07	0.15	0.30	0.06	0.14	11.4	0.70	0.14	0.32	0.52	0.11	0.24
Services	38.4	0.85	0.38	0.57	0.79	0.35	0.53	64.7	1.51	0.69	1.02	1.10	0.50	0.75
Total	177.6	9.10	2.15	4.29	0.80 (0.87)	0.19	0.38	340.2	19.14	4.32	8.80	1.34 (1.40)	0.30	0.61

TABLE 3C

(Continued)

		1976						
Industry	$\Delta E^m/\Delta UI_{76}$	$\Delta S^m/\Delta UI_{76}$			$\Delta E^1/\Delta UI_{75}$	$\Delta S^1/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	24.5	1.04	0.38	0.63	3.1	0.13	0.05	0.08
Manufacturing	57.3	2.97	0.86	1.59	69.9	3.62	1.04	1.94
Trans., Comm.,	6.3	0.57	0.12	0.26	2.4	0.21	0.04	0.10
Trade	38.0	3.28	0.36	1.08	47.4	4.09	0.44	1.35
Fin., Ins., & Real Estate	5.3	0.33	0.07	0.15	5.4	0.33	0.07	0.15
Services	36.4	0.85	0.39	0.57	25.2	0.59	0.27	0.40
Total	167.8	9.04	2.17	4.29	153.3	8.98	1.92	4.02

$\frac{\Delta E}{\Delta UI}$ = Change in employees per \$1 billion of national UI benefits (1975 dollars)

$\frac{\Delta S}{\Delta UI}$ = Change in current dollar sales per \$1000 of national UI benefits

TABLE 4A

Cumulative Effects of 1975 Local and National UI Benefits on Local Employment and Sales in the Private, Nonagricultural, Nonmining Sector (in 1975 dollars) - Local and National UI Benefits Versus No UI Benefits

Industry	ΔE	ΔS($1000)			$\Delta E/\Delta UI_{75}$	$\Delta S/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	2,122	$ 89,019.6	$ 31,871.8	$53,265.5	19.2	0.81	0.29	0.48
Manufacturing	3,206	158,896.8	45,312.5	84,852.9	29.0	1.44	0.41	0.59
Trans., Comm., & Utilities	455	37,382.5	7,611.6	16,868.3	4.1	0.34	0.07	0.15
Trade	3,137	254,390.9	27,502.2	83,643.9	28.4	2.30	0.25	0.76
Fin., Ins., & Real Estate	814	47,092.0	9,605.3	21,268.2	7.4	0.43	0.09	0.19
Services	3,215	70,733.1	31,832.6	47,451.2	29.1	0.64	0.29	0.43
Total	12,949	$657,552.9	$153,735.9	$307,350.0	117.1	5.95	1.39	2.60

ΔE is the sum of the 1975 employment change and the lagged employment change in 1976.

ΔS is the sum of the 1975 sales change and the lagged sales change in 1976 (in 1975 dollars).

$\Delta E/\Delta UI_{75}$ is the summed employment change per million dollars change in 1975 local UI payments.

$\Delta S/\Delta UI_{75}$ is the summed sales change per dollar change in 1975 local UI payments.

TABLE 4B

Cumulative Effects of 1975 Local UI Benefits on Local Employment and Sales in the Private, Nonagricultural, Nonmining Sector (in 1975 dollars) – Local and National UI Benefits Versus No Local UI Benefits

Industry	ΔE	$\Delta S(\$1000)$			$\Delta E/\Delta UI_{75}$	$\Delta S/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	1,648	$ 68,933.7	$24,715.9	$ 41,275.2	14.9	0.62	0.22	0.37
Manufacturing	943	47,030.6	13,342.7	25,050.1	8.5	0.43	0.12	0.23
Trans., Comm., & Utilities	302	24,764.6	5,040.3	11,172.4	2.7	0.22	0.05	0.10
Trade	1,649	133,600.6	14,433.0	43,911.7	14.9	1.21	0.13	0.40
Fin., Ins., & Real Estate	635	36,727.2	7,490.9	16,586.7	5.7	0.33	0.07	0.15
Services	2,134	46,942.7	21,112.7	31,481.2	19.3	0.42	0.19	0.28
Total	7,311	$357,999.4	$86,135.5	$169,477.3	66.0	3.23	0.78	1.53

ΔE, ΔS, $\Delta E/\Delta UI_{75}$, and $\Delta S/\Delta UI_{75}$ are as defined in Table 4A.

TABLE 4C

Cumulative Effects of 1975 National UI Benefits on Local Employment and Sales in the Private
Nonagricultural, Nonmining Sector (in 1975 dollars) -
Local and National UI Benefits Versus No National UI Benefits

Industry	ΔE	$\Delta S(\$1000)$			$\Delta E/\Delta UI_{75}$	$\Delta S/\Delta UI_{75}$		
		(1)	(2)	(3)		(1)	(2)	(3)
Construction	503	$21,332.8	$7,587.6	$12,722.4	28.9	1.23	0.44	0.73
Manufacturing	2,267	112,063	32,025.8	59,906.8	130.5	6.45	1.84	3.45
Trans., Comm., & Utilities	159	13,082.2	2,664.6	5,904.1	9.2	0.75	0.15	0.34
Trade	1,522	123,500.	13,361.2	40,621.4	87.6	7.11	0.77	2.34
Fin., Ins., & Real Estate	192	11,112.6	2,268.1	5,020.4	11.1	0.64	0.13	0.29
Services	1,106	24,333.0	10,959.9	16,330.4	63.7	1.40	0.63	0.94
Total	5,749	$305,424.	$68,867.1	$140,506.	330.9	17.58	3.96	8.09

ΔE is the sum of the 1975 employment change and the lagged employment change in 1976.
ΔS is the sum of the 1975 sales change and the lagged sales change in 1976 (in 1975 dollars).
$\Delta E/\Delta UI_{75}$ is the summed employment change per billion dollar change in 1975 National UI payments.
$\Delta S/\Delta UI_{75}$ is the summed sales change per $1000 change in 1975 national UI payments.

TABLE 5A

Two Year Summary of the Effects of National and Local UI Benefits on Local Employment and Sales in the Nonagricultural, Nonmining, Private Wage and Salary Section (in 1975 dollars) - Local and National UI Benefits Versus No UI Benefits

Industry	ΔE	ΔS($1000)			ΔS/S			ΔE/ΔUI	ΔS/ΔUI		
		(1)	(2)	(3)	(1) (ΔE/E)	(2)	(3)		(1)	(2)	(3)
Construction	3,214	$ 133,073.2	$ 48,006.9	$79,927.7	6.17	2.22	3.70	17.3	0.72	0.26	0.43
Manufacturing	4,658	229,960.7	65,788.2	122,998.8	3.07	0.88	1.64	25.1	1.24	0.35	0.66
Trans., Comm., & Utilities	712	59,201.2	12,086.5	26,749.4	1.48	0.30	0.67	3.8	0.32	0.07	0.15
Trade	4,360	354,088.7	38,346.3	116,524.6	1.83	0.35	0.80	23.5	1.91	0.21	0.63
Fin., Ins., & Real Estate	1,150	66,605.0	13,606.9	30,104.6	1.73	0.35	0.78	6.2	0.36	0.07	0.16
Services	4,743	104,350.4	47,141.1	70,136.9	2.70	1.22	1.81	25.5	0.56	0.25	0.37
Total	18,837	$947,278.1	$224,976.2	$446,442.0	2.33 (2.57)	0.55	1.19	101.4	5.10	1.21	2.40

ΔE is the sum of employment changes in 1975 and 1976 due to UI payments.

ΔS is the sume of sales changes (in 1,000's of 1975 dollars) in 1975 and 1976 due to UI payments.

ΔE/ΔUI is the employment change per one million (1975) dollars in local UI payments over the period 1975-1976.

ΔS/ΔUI is the sales change per (1975) dollars in local UI payments over the period 1975-1976.

ΔS/S, ΔE/E are the percentage change in sales and employment, respectively, over the period 1975-1976, and are virtually identical for each industry using method (1).

TABLE 5B

Two Year Summary of the Effects of Local UI Benefits on Local Employment and Sales in the Nonagricultural, Nonmining, Private Wage and Salary Sector (in 1975 Dollars) - Local and National UI Benefits Versus No Local UI Benefits

	ΔE	ΔS ($1000)			$\Delta S/S$			$\Delta E/\Delta UI$	$\Delta S/\Delta UI$		
		(1)	(2)	(3)	(1) ($\Delta E/E$)	(2)	(3)		(1)	(2)	(3)
Construction	2,377	$ 98,303.3	$ 35,481.8	$ 59,057.0	4.55	1.64	2.73	12.8	0.53	0.19	0.32
Manufacturing	1,511	74,815.9	21,348.6	39,964.8	1.00	0.29	0.55	8.1	0.40	0.11	0.22
Trans., Comm., & Utilities	469	38,935.3	7,946.6	17,589.8	0.97	0.20	0.44	2.5	0.21	0.04	0.09
Trade	2,309	187,376.0	20,282.4	61,647.4	0.97	0.10	0.32	12.4	1.01	0.11	0.33
Fin., Ins., & Real Estate	888	51,412.1	10,502.6	23,237.0	1.34	0.27	0.60	4.8	0.28	0.06	0.3
Services	3,125	68,734.7	11,036.0	46,186.6	1.78	0.80	1.20	16.8	0.37	0.17	0.25
Total	10,679	$519,577.3	$126,598.0	$247,682.6	1.28 (1.46)	0.31	0.61	57.4	2.80	0.68	1.34

ΔE, ΔS, $\Delta E/\Delta UI$, $\Delta S/\Delta UI$, $\Delta S/S$, and $\Delta E/E$ are as defined in Table 5A.

TABLE 5C

Two Year Summary of the Effects of National UI Benefits on Local Employment and Sales in the Nonagricultural, Nonmining, Private Wage and Salary Sector (in 1975 dollars) - Local and National UI Benefits Versus No National UI Benefits

Industry	ΔE	ΔS($1000) (1)	(2)	(3)	ΔS/S (1) (ΔE/E)	(2)	(3)	ΔE/ΔUI	ΔS/ΔUI (1)	(2)	(3)
Construction	881	$36,569.1	$13,172.8	$21,947.3	1.69	0.61	1.02	27.5	1.14	0.41	0.69
Manufacturing	3,152	155,376.	44,505.8	83,156.7	2.08	0.59	1.11	98.6	4.86	1.39	2.60
Trans., Comm., & Utilities	257	21,402.2	4,370.9	9,672.0	0.53	0.11	0.24	8.0	0.67	0.14	0.30
Trade	2,109	171,352.	18,566.0	56,403.0	0.88	0.10	0.29	65.9	5.36	0.58	1.76
Fin., Ins., & Real Estate	274	15,874.5	3,244.7	7,176.8	0.41	0.08	0.19	8.6	0.50	0.10	0.22
Services	1,668	36,697.5	16,590.4	24,674.1	0.95	0.43	0.64	52.2	1.15	0.52	0.77
Total	8,341	$437,272.	$100,451.	$203,030.	1.07 (1.14)	0.25	0.50	260.8	13.67	3.14	6.35

ΔE, ΔS, ΔE/ΔUI, ΔS/ΔUI, ΔS/S, and ΔE/E are as defined in Table 5A except that ΔE/ΔUI = change in employees per $billion of National UI benefits (1975 dollars) and ΔS/ΔUI = change in sales (1975 dollars) per $1000 of national UI benefits.

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III. UI Impacts on Selected Local Economic and Demographic Variables.

The effects of UI benefits (local and national) on selected measures of local economic activity are presented in Table 6A. In 1975 the total UI system was responsible for generating 8,358 nonagricultural jobs in Maricopa County which represents an increment of 1.9%. There were 819 fewer individuals in the ranks of the unemployed (a reduction of 1.5% in the number of unemployed persons). The local unemployment rate was 3% lower because of the UI system. The local labor force was larger by 7,806 persons (1.5%) as a result of UI benefit payments locally and nationally. UI benefits had no effect on the size of the local population in 1975. Disposable personal income in Maricopa County was nearly $222.1 million greater in 1975 (3.4%) than it would have been in the absence of UI benefit payments.

In 1976 there were 11,296 additional jobs in the Phoenix SMSA stemming from UI benefit payments. Of these additional jobs, 5,085 were generated by the lagged effects of 1975 UI benefit payments, and the remaining 6,211 resulted from the immediate effects of 1976 UI benefits. There were 4,091 fewer unemployed in 1976 because of UI benefits in 1975 and 1976. Of these, a reduction of 3,478 unemployed persons was attributed to the lagged effects of 1975 UI benefits. The labor force in 1976 contained 7,565 more persons than it would have in the absence of UI benefits in 1975 and 1976. The lagged effects of 1975 UI benefits accounted for 1,769 of the additional persons in the 1976 labor force. In 1976, the local population was marginally larger, by 617 persons, as a result of UI benefit payments in 1975.

Calculating from the data in Table 6A, the cumulative effects of 1975 UI benefits over the two year period are estimated to have generated 13,443 wage and salary jobs, reduced the number of unemployed by 4,297, and to have increased the labor force by 9,575 persons. The local population rose by 617

persons and disposable personal income was larger by 273 million (1975 dollars).

The effects of 1975 and 1976 UI benefits over this two year period were an increase in local wage and salary employment of 19,654 (2.2%), a decrease in the number of unemployed persons of 4,910 (4.3%), and an increase in the labor force of 15,371 (1.4%). Also disposable personal income would have been $432 million (1975 dollars) or 3.2% lower over this period in the absence of UI benefit payments.

Table 6B presents the estimated effects of local UI benefits on selected measures of local economic activity. In 1975 the absence of UI benefit payments in Maricopa County (but not elsewhere) would have reduced total wage and salary employment by 5,288 persons (1.2%), raised the number of unemployed by 495 persons (0.9%), raised the unemployment rate by 0.2 percentage points (1.8%), and reduced the size of the labor force by 4,962 persons (0.9%). The absence of local UI benefit payments would have had no current effect on the size of the local population, but would have resulted in a loss of $164 million (2.6%) in disposable personal income. Another way of viewing these results is to note that every $1 million in local UI benefits generated 48 additional jobs, reduced the number of unemployed by 5 persons, and increased the local labor force by 45 persons. For every $1 in local UI benefits there was an increase in disposable income in 1975 of $1.49.

In 1976 there were 6,102 additional jobs generated by local UI benefit payments. The lagged effects of 1975 local UI benefits accounted for 2,502 of these additional jobs. Of the 2,080 fewer persons among the ranks of the unemployed, 1,743 were not unemployed because of the lagged effects of 1975 local UI benefits. The local labor force in 1976 was incremented by 4,216 persons because of local UI benefits in 1975 and 1976. Of these 838 were

added to the labor force as a result of the lagged effects of 1975 local UI

benefit payments. Disposable personal income in 1976 was $155 million higher

than it would have been in the absence of local UI benfits. Of the $155

million, the lagged effects of 1975 local UI benefit payments accounted for

$43 million. It is noteworthy that the lagged effects of 1975 local UI bene-

fits accounted for an additional 2,278 persons in the population than would

have been there in the absence of local UI benefits. Not surprisingly, the

local population effect of removing local UI benefits only is much more than

that of removing benefits both nationally and locally. Net migration into

Maricopa is sensitive to conditions in that area relative to elsewhere.

Hence, when we increase local benefits, but keep national ones constant, we

raise the relative attractiveness of Maricopa which results in increased net

migration to that county.

The cumulative effects of 1975 local UI benefits over the two year period

include an increase in total wage and salary employment of 7,790, a reduction

in the number of unemployed by 2,238, and an increase in the number of persons

in the labor force by 5,800 persons. Over this period, 1975 local UI benefits

accounted for a total increase in disposable personal income of $207 million

(1975 dollars) or $1.88 for every $1 of 1975 UI benefit payments.

Over the two year period, the combined effects of 1975 and 1976 local UI

benefits lead to average increases of 1.3% and 0.9% in total wage and salary

employment and the labor force, respectively. The average reduction in the

number of unemployed was 2.3%, and the reduction in the unemployment rate was

3.1%. Disposable personal income was increased an average by 2.3% because of

local UI benefit payments.

The effects of the national UI system on selected measures of local econo-

mic activity are reported in Table 6C. The presence of UI benefits elsewhere,

in 1975 increased wage and salary employment in Maricopa County by 3,256 persons (.7% increase). The number of local unemployed was less by 348 persons (.6% decrease), and the labor force was larger by 3,013 persons (.6% increase). The local unemployment rate was 0.1 percentage points less (a decline of 1.2%). Disposable personal income was $65 million higher because of a national UI system (an increase of 1%). The absence of UI benefits elsewhere would have had no immediate effect on the size of the local population since in all simulations, comparative economic conditions affect net migration only with a lag.

In 1976 the effects of UI benefits elsewhere on wage an salary employment was an increase of 5,276 jobs with the lagged effects of 1975 UI benefits accounting for approximately half of this 1976 increase. The disbursement of UI benefit payments elsewhere resulted in 1,935 fewer persons unemployed in Maricopa County. Lagged effects of 1975 UI benefits accounted for 1,642 of these fewer unemployed. The local labor force was increased by 3,523 persons. The lagged effects of 1975 UI benefits accounted for 990 of these persons and the remaining 2533 were attributable to the marginal effect of the 1976 benefits. Disposable personal income was larger by $72 million because of UI benefits elsewhere. Of this increase, $17.8 million was the result of lagged 1975 effects of UI benefit payments, and $54.6 million resulted from 1976 UI benefits. Finally, the existence of UI benefit payments elsewhere in 1975 was responsible for a reduction of 1,597 persons in the local population in 1976. Similarly to the simulations in which national UI benefits were constant and local ones changed, the population effect of keeping local benefits constant and changing the national benefits are much more notable than the population effect of changing both national and local benefits together. Again, changing one set of benefits, but not the other, affects

TABLE 6A

The Effects of Local and National UI Benefits on Selected Measures of Local Economic Activity --
Local and National UI Benefits Versus No UI Benefits[a]

Variable (X)	1975			1976							1975 & 1976		
	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX^m	ΔX^l	ΔX	$\Delta X^m/\Delta UI_{76}$	$\Delta X^l/\Delta UI_{75}$	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$
Disposable Personal Income ($1,000,000)	$222.1	2.00	3.38	$171.2	$51.0	$222.2	2.27	0.46	2.95	3.06	$431.9	2.39	3.24
Unemployment Rate	-.31%	-.003%	-3.06	-.23%	-.65%	-.88%	-.003%	-.005%	-.012%	-8.72	-1.19%	-.006%	-5.88
Unemployed	-819	-7.4	-1.52	-613	-3,478	-4,091	-8.1	-31.5	-54.4	-7.25	-4,910	-26.4	-4.28
Total Wage & Salary Employment	8,358	75.6	1.90	6,211	5,085	11,296	82.5	46.0	150.1	2.43	19,654	105.7	2.17
Government Employment	536	4.8	.64	387	-45	342	5.1	-0.4	4.5	.39	878	4.7	0.51
Labor Force	7,806	70.6	1.46	5,796	1,769	7,565	77.0	16.0	100.5	1.35	15,371	82.7	1.41
Population	0	0.0	0.00	0	617	617	0.0	5.6	8.2	.05	617	3.3	.02

[a] The various measures of UI effects in the table are constructed in the same manner as those reported in Tables 2-3.

TABLE 6B

The Effects of Local UI Benefits on Selected Measures of Local Economic Activity -
Local and National UI Benefits Versus No Local UI Benefits[a]

Variable (X)	1975						1976				1975 & 1976		
	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX^m	ΔX^l	ΔX	$\Delta X^m/\Delta UI_{76}$	$\Delta X^l/\Delta UI_{75}$	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$
Disposable Personal Income ($1,000,000)	$164.3	1.49	2.57	$111.9	$43.0	$154.9	1.40	0.39	1.94	2.18	$310.5	1.67	2.32
Unemployment Rate	-0.19%	-0.002%	-1.84	-0.13%	-0.32%	-0.45%	-0.002%	-0.003%	-0.006%	-4.27	-0.64%	-0.003%	-3.07
Unemployed	-495	-4.5	-0.91	-337	-1,743	-2,080	-4.2	-15.8	-26.1	-3.56	-2,575	-13.9	-2.28
Total Wage & Salary Employment	5,288	47.8	1.21	3,600	2,502	6,102	45.2	22.6	76.6	1.33	11,390	61.3	1.27
Government Employment	418	3.8	0.50	285	69	354	3.6	0.6	4.4	0.40	772	4.2	0.45
Labor Force	4,962	44.9	0.94	3,378	838	4,216	42.4	7.6	52.9	0.76	9,178	49.4	0.85
Population	0	0.0	0.00	0	2,278	2,278	0.0	20.6	28.6	0.18	2,278	12.3	0.09

[a]The various measures of UI effects in the table are explained in Table 6A.

TABLE 6C

The Effects of National UI Benefits on Selected Measures of Local Economic Activity—
Local and National UI Benefits Versus No National UI Benefits[a]

Variable (X)	1975			1976							1975 & 1976		
	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX^m	ΔX^l	ΔX	$\Delta X^m/\Delta UI_{76}$	$\Delta X^l/\Delta UI_{75}$	$\Delta X/\Delta UI$	$\Delta X/X$	ΔX	$\Delta X/\Delta UI$	$\Delta X/X$
Disposable Personal Income ($1,000,000)	$64.9	3.74	1.00	$54.6	$17.8	$72.4	3.53	1.03	4.69	1.00	$137.3	4.29	1.00
Unemployment Rate	-.12%	-0.007%	-1.17	-.10%	-.31%	-.41%	-.007%	-.018%	-.027%	-4.07	-.53%	-.017%	-2.62
Unemployed	-348	-20.03	-0.64	-293	-1,642	-1,935	-18.9	-94.5	-125.2	-3.43	-2,283	-71.4	-2.07
Total Wage & Salary Employment	3,256	187.4	0.74	2,737	2,539	5,276	177.2	146.1	341.5	1.14	8,532	266.8	0.94
Government Employment	138	7.9	0.16	116	-115	1	7.5	-6.6	0.065	0.00	139	4.3	0.08
Labor Force	3,013	173.4	0.57	2,533	990	3,523	164.0	57.0	228.0	0.63	6,536	204.4	0.60
Population	0	0.0	0.00	0	-1,597	-1,597	0.0	-91.9	-103.4	-0.13	-1,597	-49.9	-0.06

[a]The various measures of UI effects in the table are explained in Table 6A.
ΔUI is change in national UI benefits ($billions)

relative economic conditions and the latter are what determine net
migration. In the present case, increasing UI benefits in the U.S. as a
whole, while keeping Maricopa benefits constant, improves conditions elsewhere
relative to Maricopa and causes a reduction in Maricopa population.

The accumulated effects of 1975 UI benefits elsewhere include an increase
in local wage and salary employment of 5,795 persons, a reduction in the
number of local unemployed of 1,990, and an increase in the local labor force
of 4,003 persons over the two year period. Disposable personal income was
increased by $83 million (1975 dollars) locally over the period 1975-76 by UI
benefits elsewhere in 1975.

The combined effects of national UI benefits in 1975 and 1976 produced
average increases in local wage and salary employment and labor force size of
.9% and .6% respectively. The number of local unemployed was reduced by an
average of 2% and local disposable income was increased by 1%.

IV.   Local Industry Shares of UI Contributions and UI Induced Employment and
      Sales

In this section we compare each local industry's share of UI contributions
with its share of UI induced employment and sales. These comparisons enable
us to shed some light on which industries benefit differentially from the UI
system and how the national UI system and the local UI system differ in their
effects on the differential benefits by industry.

In Table 7A we report each industry's share of the induced employment and
sales changes from the national and local UI system. From Table 8 we see that
Maricopa manufacturing and trade jointly accounted for slightly in excess of
half of the local UI contributions during the period 1975-76 (53%). Together
these industries received about half of the UI induced employment and sales

gains (48% of the employment gains and 54% of the sales gains). However, trade accounted for about 23% of the UI induced employment and about 26% of the induced sales compared with its 29% share of local UI contributions. On the other hand, manufacturing absorbed 25% of the UI induced employment and about 28% of the induced sales compared with its 24% share of local UI contributions. Finance, insurance, and real estate contribute about 9% of the local UI taxes over this period but received only 6-7% of the UI induced employment and sales. Services paid in about 19% of UI tax contributions and enjoyed 25% of the induced employment. However, the induced sales share of services was much less, only about 16%. Construction contributed 14% of the local UI taxes and received 17-18% of the induced employment and sales.

Table 7B reports the industry shares of the employment and sales induced by local UI benefits only. The major gainer from local UI benefits was construction. The construction industry in Maricopa County accounted for 22% of the local UI induced employment and 24% of the induced sales, yet over 1975-76 it contributed only 14%. Services received a much larger share of local UI induced employment (29%) than its share of UI tax contributions, however, its share of the induced sales was the same as its share of UI contributions. Maricopa manufacturing accounted for significantly lower shares of locally induced employment and sales (14% and 16%, respectively) than its share of UI tax contributions (24%). Trade absorbed a smaller share of locally induced sales and employment (22% and 25%, respectively) than its share of local UI contributions. The remaining industries each absorbed close to the same percentage of local UI induced employment sales as their UI tax share.

In comparing Table 7A with 8, it is clear that there were generally not substantial deviations between proportion of local UI tax contributions paid by industry and industry proportion of local sales and employment induced by

the benefits locally and nationally. However, in looking at Table 7B and 8, there clearly were major differences between proportion of local UI tax contributions paid and proportion of local sales and employment induced by local UI benefits. The local industry percentage shares of employment and sales growth induced by the national system alone is unbalanced in the opposite direction of the shares induced by the local benefits alone. The result is a fairly matched distribution of percentage gains and contributions when the national and local systems are put together.

Table 7C reports the industry percentage shares of induced local employment and sales from the national UI system, local benefits held constant. Clearly, manufacturing, the comparative loser under local benefits (receiving only 14% of local UI benefit induced employment, but paying in 24% of local UI contributions) is the major gainer from the national system, receiving 38% and 41% of national UI benefit induced employment and sales respectively. Construction, the comparative gainer from locally-paid out benefits receives only 11% of the induced employment and sales from the national system (compared with its contributiion of 14% of local UI taxes). Finance, insurance, and real estate receive only about 3% of nationally induced employment and sales. This is substantially less than their local contribution share of almost 9%. Thus, although the share of this industry in local benefit induced employment and sales is approximately equal to its contribution share, its very low share of national system induced employment and sales results in its proportion of aggregate (national and local) induced UI employment and sales being only about three quarters of its local contribution proportion.

Before leaving the distribution of UI-induced employment changes, it is instructive to compare the results for Maricopa and the United States. The industrial distribution of 1975-76 nonagricultural wage and salary employment

effects of UI payments (both nationally and locally) for the U.S. and Maricopa are reported in Table 9. A clear conclusion from Table 9 is that the distribution of local impacts cannot be derived simply by looking at national results. Compared with the U.S. as a whole, services and construction enjoy much larger shares of UI-induced employment in Maricopa than in the U.S. while manufacturing and trade have substantially lesser shares.

The fact that the distribution of levels of employment differ between Maricopa and the United States can explain some, but not nearly all, of the discrepancies in Table 9. For example, if construction employment is 2% of nonagricultural wage and salary employment in area A and 12% in area B, we might expect the construction industry in area B to capture a larger proportion of UI benefit induced employment changes than the construction industry in area A. Table 10 presents the 1975 industrial distribution of nonagricultural wage and salary employment for Maricopa and the U.S. derived from the control run (with national and local UI benefits). In Table 9, the manufacturing share of employment effects in the U.S. is 33% higher than in Maricopa and in part this reflects the underlying distribution as shown in Table 10-- manufacturing employment has a 42% greater share of nonagricultural wage and salary employment in the United States than in Maricopa.

However, the differences shown in Table 10 cannot explain all of Table 9. For example, construction employment has a 28% larger share of nonagricultural wage and salary employment in Maricopa than the U.S. However, the Maricopa construction industry's share of UI-induced employment is 167% of U.S. construction industry share. Trade and services represent very similar proportions of nonagricultural wage and salary employment in Maricopa and the U.S. In Table 9, they together enjoy 46% of the UI-induced employment effects in both areas. However, there is a marked difference between areas in Table 9

TABLE 7A

Industry Percentage Shares of Local and National UI Induced Local Private Wage and Salary Employment and Sales - Local and National UI Benefits Versus No UI Benefits

Industry	1975				1976				1975 & 1976			
	$\Delta E_i/\Delta E$	$\Delta S_i/\Delta S$			$\Delta E_i/\Delta E$	$\Delta S_i/\Delta S$			$\Delta E_i/\Delta E$	$\Delta S_i/\Delta S$		
		(1)	(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)
Agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	18.9	16.3	23.8	20.3	15.7	12.4	19.5	16.1	17.1	14.0	21.3	17.9
Manufacturing	23.8	24.1	28.0	26.8	25.4	24.4	30.2	28.1	24.7	24.3	29.2	27.6
Trans., Comm., & Utilities	4.4	7.3	6.1	6.9	3.3	5.5	4.9	5.4	3.8	6.2	5.4	6.0
Trade	20.6	33.6	14.8	23.1	25.0	40.0	18.7	28.3	23.1	37.4	17.0	26.1
Fin., Ins., & Real Estate	5.9	6.9	5.8	6.5	6.2	7.1	6.2	6.9	6.1	7.0	6.0	6.7
Services	26.4	11.7	21.5	16.4	24.3	10.5	20.5	15.2	25.2	11.0	21.0	15.7
Total	100.0	99.9	100.0	100.0	99.9	99.9	100.0	100.0	100.0	99.9	99.9	100.0

$\Delta E_i/\Delta E$ is Industry i's percentage share of total UI induced employment.

$\Delta S_i/\Delta S$ is Industry i's percentage share of total UI induced sales.

TABLE 7B

Industry Percentage Shares of UI Induced Local Private Wage and Salary Employment and Sales -
Local and National UI Benefits Versus No Local UI Benefits

Industry	1975				1976				1975 & 1976			
	$\Delta E_1/\Delta E$	$\Delta S_1/\Delta S$			$\Delta E_1/\Delta E$	$\Delta S_1/\Delta S$			$\Delta E_1/\Delta E$	$\Delta S_1/\Delta S$		
		(1)	(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)
Agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	21.6	19.1	27.4	23.6	22.8	18.8	28.6	24.0	22.3	18.9	28.0	23.8
Manufacturing	16.9	17.5	20.0	19.3	11.8	11.8	14.1	13.4	14.1	14.4	16.9	16.1
Trans., Comm., & Utilities	5.0	8.3	6.8	7.8	3.9	6.8	5.8	6.5	4.4	7.5	6.3	7.1
Trade	19.6	32.7	14.2	22.3	23.4	38.9	17.6	27.2	21.6	36.1	16.0	24.9
Fin., Ins., & Real Estate	7.5	9.0	7.4	8.4	9.0	10.7	9.1	10.3	8.3	9.9	8.3	9.4
Services	29.4	13.4	24.2	18.6	29.1	13.1	24.8	18.7	29.3	13.2	24.5	18.6
Total	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.1	100.0	100.0	100.0	99.9

$\Delta E_1/\Delta E$ and $\Delta S_1/\Delta S$ are as defined in Table 7A.

TABLE 7C

Industry Percentage Shares of National UI Induced Local Private Wage and Salary Employment and Sales - Local and National UI Benefits Versus No National UI Benefits

Industry	1975 $\Delta E_1/\Delta E$	1975 $\Delta S_1/\Delta S$ (1)	(2)	(3)	1976 $\Delta E_1/\Delta E$	1976 $\Delta S_1/\Delta S$ (1)	(2)	(3)	1975 & 1976 $\Delta E_1/\Delta E$	1975 & 1976 $\Delta S_1/\Delta S$ (1)	(2)	(3)
Agriculture	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction	14.6	12.1	18.2	15.3	8.2	6.2	10.1	8.2	10.6	8.4	13.1	10.8
Manufacturing	34.1	33.3	39.8	37.6	39.9	36.8	47.0	42.9	37.8	35.5	44.3	41.0
Trans., Comm., & Utilities	3.8	6.0	5.2	5.7	2.7	4.3	3.9	4.2	3.1	4.9	4.4	4.8
Trade	22.7	35.7	16.2	24.8	26.8	41.2	19.8	29.5	25.3	39.2	18.5	27.8
Fin., Ins., & Real Estate	3.2	3.6	3.1	3.4	3.3	3.7	3.3	3.6	3.3	3.6	3.2	3.5
Services	21.7	9.3	17.6	13.2	19.0	7.9	15.9	11.6	20.0	8.4	16.5	12.2

$\Delta E_1/\Delta E$ and $\Delta S_1/\Delta S$ are as defined in Table 7A.

TABLE 8

Local UI Tax Contributions in Maricopa County[a]

Industry	1975		1976		1975 & 1976	
	T_i	$T_i/T\%$	T_i	$T_i/T\%$	T_i[b]	$T_i/T\%$
Agriculture	$ 142.2	0.9	$ 206.8	0.7	$ 337.4	0.8
Mining	30.5	0.2	51.0	0.2	78.6	0.2
Construction	2,281.6	14.6	3,935.2	14.1	5,996.7	14.3
Manufacturing	3,192.0	20.5	7,182.6	25.7	9,973.0	23.8
Trans., Comm., & Utilities	766.7	4.9	1,299.0	4.7	1,993.1	4.8
Trade	4,656.8	29.8	7,888.3	28.3	12,103.9	28.9
Fin., Ins., & Real Estate	1,446.5	9.3	2,286.4	8.2	3,605.0	8.6
Services	3,089.4	19.8	5,047.5	18.1	7,854.7	18.7
Total	$15,605.7	100.0	$27,896.8	100.0	$41,942.4	100.1

Source: Arizona Department of Employment Security.

[a]T_i is the UI tax contribution ($1000) of industry i.

$T_i/T\%$ is industry i's percent share of total UI tax contribution.

[b]The sum of 1975 and 1976 UI tax contributions in 1975 dollars.

Table 9

Industrial Distribution of Nonagricultural Wage and Salary
Employment Effects of UI Benefits Locally and Nationally-
1975 and 1976

Industry	Maricopa [a] $\Delta E_i/\Delta E$	United States [b] $\Delta E_i/\Delta E$
Mining	0.0	0.1
Construction	16.3	6.1
Manufacturing	23.7	31.6
Trans., Comm., & Utilities	3.6	7.8
Trade	22.1	36.5
Fins., Ins., & Real Estate	5.8	3.5
Services	24.1	10.2
Government	4.6	4.2

[a] Derived from data in Table 5A and government employment increase of 878 from Table 6A.

[b] Derived from data in Table 1A.

Table 10

1975 Industrial Distribution of Nonagricultural Wage
and Salary Employment -- Maricopa and United States[a]

Industry	Maricopa	United States
Mining	<.1	1.0
Construction	5.9	4.6
Manufacturing	16.8	23.8
Trans., Comm., & Utilities	5.4	5.9
Trade	26.3	22.2
Fins., Ins., & Real Estate	7.4	5.4
Services	19.1	18.1
Government	19.1	19.0

[a] Figures derived from control simulations

in the distribution of that 46% between trade and services. It is fairly evenly distributed in Maricopa, but in the U.S., 37% of UI-induced employment is in the trade sector while only 10% is in services. These construction, trade, and service results emphasize how different the relative impacts of a program can be in one area compared with the country as a whole. Undoubtedly these results in part reflect the generally more volatile construction industry in Maricopa compared with the U.S. and the results clearly suggest a more income-sensitive service industry in Maricopa than the U.S. as a whole.

It is interesting to note in Tables 8 and 2A that the most conservative estimate of UI induced local sales (method 2), always exceeds the total local UI tax contribution. This is true for every industry and typically even this most conservative sales estimate is many times the UI contributions.

Each local industry's share of the average monthly insured unemployed over the period 1975-76 is reported in Table 11. UI claimants in construction, manufacturing, and trade accounted for most of the insured unemployed. The claimant shares of construction and manufacturing each exceeded the UI tax contribution shares in their industries over the two year period. In the case of trade, the claimant share was significantly less than the UI tax contribution share even after netting out state and local government claimants (about 7 percentage points).

While an industry's share of insured unemployment is not necessarily the same as its unemployed worker share of the local UI benefit payments, the two shares are in practice very much the same. This may be seen from Table 12 which presents comparisons of each industry's claimant share and its unemployed worker share in the state of Arizona. Although complete data were

TABLE 11

Average Monthly Insured Unemployed
in Nonagricultural Industries in Maricopa County

Industry	1975 Number	1975 %	1976 Number	1976 %	1975 & 1976 %
Mining	152	0.6	67	0.5	0.6
Construction	5997	23.7	3449	23.9	23.8
Manufacturing	7833	30.9	2854	19.8	26.9
Trans., Comm., & Utilities	958	3.8	581	4.0	3.9
Trade	5015	19.8	3469	24.0	21.3
Fin., Ins., & Real Estate	1219	4.8	823	5.7	5.1
Services	3563	14.1	2855	19.8	16.1
State & Local Government	586	2.3	330	2.3	2.3
Total	25323	100.0	14427	100.0	100.0

Source: Arizona Department of Employment Security.

TABLE 12

Average Monthly Insured Unemployed and UI Benefits Paid Out, by Industry in Arizona

Industry	1975[a]				1976				1975 & 1976[a]	
	Number	%	UI Payments	%	Number	%	UI Payments	%	% of Claimants	% of UI Payments[b]
Mining	1,546	4.0	$ 415,794	4.6	946	3.8	$ 256,579	4.3	4.0	4.5
Construction	11,290	29.5	2,828,137	31.1	7,228	29.2	1,865,044	31.1	29.4	31.1
Manufacturing	9,634	25.2	2,342,021	25.8	4,223	17.1	1,029,514	17.2	22.0	22.5
Trans., Comm., & Utilities	1,162	3.0	285,503	3.1	797	3.2	203,264	3.4	3.1	3.2
Trade	7,235	18.9	1,574,576	17.3	5,451	22.1	1,231,218	20.5	20.1	18.6
Fin., Ins., & Real Estate	1,510	3.9	353,026	3.9	1,105	4.5	267,832	4.5	4.2	4.1
Services	4,941	12.9	1,071,492	11.8	3,952	16.0	888,689	14.8	14.1	13.0
State & Local Government	423	1.1	89,896	1.0	553	2.2	131,593	2.2	1.5	1.5
Agriculture	296	0.8	64,422	0.7	218	0.9	48,000	0.8	0.8	0.7
Unclassified	215	0.6	64,353	0.7	243	1.0	71,912	1.2	0.7	0.9
Total	38,252	99.9	$9,089,220	100.0	24,716	100.0	$5,993,643	100.0	99.9	100.1

Source: Arizona Department of Employment Security.

[a]Excludes July 1975 data, which were not available.
[b]Computations based on conversion of the sum of 1975 and 1976 UI payments into 1975 dollars.

not available for the Phoenix, SMSA, the relationships observed in the statewide data probably hold for Maricopa County.

V. Summary and Conclusions

Our findings show clearly that UI benefits stimulate local economies, and hence the national economy. Because UI spending is but a minor source of total spending in the economy, its effects are relatively small. The pattern of the UI effects on an industry basis reveals the differential sensitivity of industries to UI spending. At the level of the local labor market, the industry pattern of responses to UI benefits is different when one isolates the effects of local UI spending from the effects of UI spending elsewhere.

The Phoenix, Arizona SMSA in 1975 and 1976 served as the local labor market in our study. Over the two year period of the study, UI benefits (in the Phoenix SMSA and in the rest of the U.S.) are estimated to have raised local sales by 1.2%. Local wage and salary employment in Maricopa County was raised by 2.2% compared with an increase in U.S. employment of 0.5%. Locally, manufacturing experienced the largest percentage employment gain of 3.1%. Nationally, trade experienced the greatest percentage employment gain of 0.8%. Disposable personal income in the Phoenix SMSA was raised by 3.2% while disposable income in the U.S. was increased by 2%. UI benefits lowered the unemployment rate by 5.9% locally and 2.5% nationally. It is evident, therefore, that the UI system has a relatively larger impact on the Phoenix SMSA compared with the U.S. as a whole.

Another basis for comparing UI effects nationally and locally involves isolating the effects of the local UI system. Local UI benefits were responsible for slightly over half the total percentage sales and wage and salary employment effects (0.6% and 1.3% respectively). Local construction ex-

perienced the largest employment gains, 4.6%, from local UI benefit pay-
ments. For every $1 million in UI benefits nationally, U.S. employment was
increased by 23 persons. On the other hand, every $1 million in local UI
benefits was associated with an increase in local employment of 61 persons.
Local UI benefits raised local disposable personal income by 2.3% and lowered
the local unemployment rate by 3.1%.

The Phoenix, SMSA also benefits from the existence of UI benefits nation-
wide. In 1975-76, national benefits raised Phoenix area sales .5% and Phoenix
wage and salary employment .9%. Every $1 billion in national UI beneifts
raised Maricopa County wage and salary employment by 267 persons. National UI
benefits raised local disposable personal income by 1% and lowered the un-
employment rate by 2.6%. Not surprisingly, much of the impact of the national
system on the Maricopa economy is through the export-base manufacturing em-
ployment sector. Almost 38% of the private wage and salary employment in-
crease in Maricopa generated by national UI benefits was in the manufacturing
sector.

When the industrial distribution of local UI tax contributions is compared
with the industrial distribution of local employment and sales generated by
the local and national UI benefits together, the shares are fairly close with
the exception that construction gains slightly more proportionately than it
contributes and finance, insurance, and real estate gain somewhat less than in
proportion to their contributions. However, it is clear that both the na-
tional and local payments are needed to maintain this parity. The separate
industrial distributions of the employment impacts from the locally paid
benefits and from the benefits paid elsewhere nationally each differ markedly
from the distribution of UI contributions by industry. Furthermore, consi-
dering the total UI system (local and national), the industrial distribution

of employment gain differs substantially between Maricopa and the U.S. as a whole with services and construction gaining relatively more in Maricopa than the U.S. and trade and manufacturing gaining relatively less.

One thing this study reveals is that geographically dispersed local economies will benefit differentially from UI spending in their local areas and UI spending outside their areas. The intra and inter local labor market differential benefits from UI are determined by the varying structures of local economies. An obvious implication of all this is that it makes a difference if one is simulating the absence of UI benefits in a local area only or simulating an absence of benefits everywhere else as well.

Looking beyond the effects of UI in the U.S. alone, one might apply some of these considerations to international comparisons of the effects of UI. Depending upon a nation's economic dependence on foreign trade in a relatively free trade environment, a nation without a UI system may lose relative to those with UI systems. For example, a nation that is heavily dependent upon exports might benefit more from the UI benefits of their trading partners than from their own UI system. On the other hand, a nation not very dependent upon exports may experience more gains from its own UI system. Of course to the extent that the country imports foreign goods, other nations may also benefit from its UI system. This brief discussion is only suggestive of another interesting line of inquiry into UI effects.

FOOTNOTES

1. Since UI benefit payments in Maricopa County were a negligible proportion of total UI benefit payments nationally (less than one tenth of one percent), the Maricopa payments were not netted out of the total for the purposes of this comparison.

2. The rationale behind this assumption is discussed in [5].

3. For a more detailed discussion of these methods see [5].

4. In the Maricopa model, area migration reacts with a lagged response to economic conditions so there are no 1975 population effects of the 1975 UI benefits.

APPENDIX

The simulation methodology used to obtain the estimated effects of UI benefits on measures of local economic activity is relatively straight forward. The DRI and local models are first run with local and national UI benefits set equal to their actual historical values. The predictions of the models obtained from these initial runs constitute the control simulations. Denote the predicted value of a local variable from the control simulation as $X_{1,n}$, where 1 and n refer to the presence of local and national UI benefit payments, respectively. Secondly, both the DRI and local models are run with the value of local and national UI benefits set equal to zero. Denote the predicted value of a local variable from this simulation by $X_{o,o}$. Thirdly, a simulation with the local model is run in which local UI benefit payments are set equal to zero, but national UI benefits are set equal to their historical value. The DRI model variables used in the local model are still assigned their control simulation values in this simulation of the local model. Denote the predicted value of a local variable from this simulation by $X_{o,n}$. Finally, a simulation of the local model is run in which local UI benefits are set equal to their historical values, but national UI benefits are zero. That is, the DRI model variables used in the local model are assigned their values from the DRI simulation which contained no national UI benefits. Denote the predicted value of a local variable from this simulation by $X_{1,o}$.

The combined effect of local and national UI benefits on some given measure of local economic activity is denoted by z^{ln}, where

(A.1) $\quad z^{ln} = X_{1,n} - X_{o,o}$.

The percentage effect is simply calculated as $(z^{ln}/X_{1,n}) \times 100$. The effect of local UI benefits on some given measure of local economic activity (in the

presence of national UI benefits) is denoted by z^1, where

$$(A.2) \quad z^1 = X_{1,n} - X_{o,n}.$$

The percentage effect in this case is simply $(z^1/X_{1,n}) \times 100$.

The effect of national UI benefits on some given measure of local economic activity (in the presence of local UI benefit payments) is denoted by z^n, where

$$(A.3) \quad z^n = X_{1,n} - X_{1,o}.$$

The percentage effect in this case is $(z^n/X_{1,n}) \times 100$.

Note that the "effect of local UI benefits" and the "effect of national UI benefits" are defined symmetrically in (A.2) and (A.3). However, because of non-linearities in the model, it does not follow that

$$(A.4) \quad z^{1n} = z^1 + z^n,$$

i.e., the effect of the national and local UI systems together is not identically equal the sum of the two partial effects. It would have been possible of course to arbitrarily define either the local or national effect so as to maintain the additive relationship in (A.4), e.g., define z^n as $z^{1n} - z^1$. The shortcoming of such an approach is the lack of symmetry in defining national and local effects. Symmetic definitions are used in this study. However, it is worth noting that the extent to which the local and national impacts add to the total was examined prior to deciding upon this definition. Table A1 presents the two year impacts on employment of the local UI benefits, the national UI benefits, the sum of the local and national impacts and the joint impact of the two systems. It is clear from Table A1 that although the additive relationship is not exactly maintained, the sum of the partial local and national UI benefit employment impacts is very close to the joint impact of the local and national system together. For the total private sector employment change, there is only a 1% difference between the two figures.

TABLE A1

Comparison of Local and National UI Impacts
With Joint Local-National Impact

Industry	1975-76 UI Induced Employment Change					
	Impact of Local UI Benefits (1)	Impact of National UI Benefits (2)	Sum of Local and National Impacts (1) + (2) (3)	Impact of Joint Local-National UI Benefit (4)	(3) - (4) (5)	(5) as a Percent of (4) (6)
Construction	2,377	881	3,528	3,214	314	9.8
Manufacturing	1,511	3,152	4,663	4,658	5	0.1
Trans., Comm., & Utilities	469	257	726	712	14	2.0
Trade	2,309	2,109	4,418	4,360	58	1.3
Fin., Ins., & Real Estate	888	274	1,162	1,150	12	1.0
Services	3,125	1,668	4,793	4,743	50	1.1
Total	10,679	8,341	19,020	18,837	183	1.0

In (A.2) and (A.3), the partial effects of the local and national system respectively are each defined assuming the existence of the other UI benefits. Again this is not the only possible definition. For example, the national impact could have been defined as:

$$(A.5) \quad Z^n = X_{o,n} - X_{o,o}.$$

That is, the marginal effect of the national system is the change between two simulations, one with national UI benefits and one without national UI benefits but both <u>without</u> local benefits. Definition (A.3) assumes the presence of local UI benefits in defining the marginal impact of the national system. However, as shown in Table A.2, the difference between the two definitions is not large.

The calculation of marginal and lagged U.I. benefit impacts are discussed in [5]. In particular, let t and t+1 represent the first year and second year, respectively, with UI payments. Letting X be the model variable of interest, ΔX_t represents the effects of UI payments in year t on X in year t and ΔX_{t+1} represents the combined effects of UI payments in t and t+1 on X in year t+1.

The combined effects, ΔX_{t+1} can be decomposed into the marginal effects of UI payments in t+1 on X_{t+1} and the lagged effects of UI payments in t on X_{t+1}. The marginal effects are calculated according to the formula:

$$(A.6) \quad \Delta X^m_{t+1} = \frac{\Delta X_t}{\Delta UI_t} \times \Delta UI_{t+1} \times \frac{CPI_t}{CPI_{t+1}}$$

where ΔUI_t, ΔUI_{t+1} are UI payments in year t and t+1, respectively; and CPI_t, CPI_{t+1} are price indices for years t and t+1, respectively. Lagged effects ΔX^1_{t+1}, are then defined residually as:

$$(A.7) \quad \Delta X^1_{t+1} = \Delta X_{t+1} - \Delta X^m_{t+1}.$$

TABLE A2

Comparison of Alternative Definitions of
National UI Benefits Impact

Industry	1975-76 Employment Change Induced by National UI Benefits			
	Change Assuming Local UI Benefits	Change Assuming No Local UI Benefits	(1) - (2)	(3) as a Percent of (1)
	(1)	(2)	(3)	(4)
Construction	881	836	45	5.1
Manfacturing	3,152	3,152	0	0.0
Trans., Comm., & Utilities	257	243	14	5.4
Trade	2,109	2,059	50	2.4
Fin., Ins., & Real Estate	274	262	12	4.4
Services	1,668	1,619	49	2.9
Total	8,341	8,171	170	2.0

See [5] for complete discussion of formulas (A.6) and (A.7). In the present study it is straightforward to apply (A.6) if only local or national benefits are changing (as, for example, in the calculation of marginal impacts of the national UI benefits or marginal impacts of the local UI benefits). However, appropriate application of A.6 is less clear in the situations in which both local and national UI benefits are changed. In these cases, the marginal impacts are defined in two steps. First, the marginal impact as a result of national UI benefits is defined by (A.6) using ΔX_t from the simulations with and without national benefits (but both with local benefits) and national data for ΔUI and CPI. The formula in (A.6) is then applied again with ΔX_t being the difference between the total induced change in X from the two sets of UI benefits together and the national UI benefit induced component (the latter being the ΔX in the first step). In the second step, local data for ΔUI and CPI are used. The two marginal effects, one attributable to national UI benefit changes and one attributable to local UI benefit changes, are summed to obtain the total marginal effect of the combined local and national UI benefits. Again, as in (A.7), the lagged impact is defined residually.

Table A3 presents the estimated sales and sales employment ratios by industry for Maricopa County in 1975 and 1976. Table A4 reports the estimated labor cost per worker in Maricopa County industries. The means by which the estimates in Table A3 and A4 were obtained are described in the authors' report [5]. The only difference is that Maricopa County data replaces Pima County data in the estimation formulas.

TABLE A3

Estimated Sales and Sales/Employment Ratios for the Nonagricultural,
Nonmining, Private Wage and Salary Sector of Maricopa County

Industry	1975		1976	
	S	S/E	S	S/E
Construction	$1,103,290	$42.659	$1,121,000	$42.695
Manufacturing	3,699,078	49.997	4,017,678	51.841
Trans., Comm., & Utilities	1,942,758	81.338	2,176,479	89.926
Trade	9,333,428	80.702	10,604,793	86.347
Fin., Ins., & Real Estate	1,879,663	57.692	2,081,689	61.512
Services	1,856,290	22.001	2,124,649	23.304

Sources: Arizona Department of Revenue Data [1], [2], [3]

S is estimated sales ($1000), and E is estimated employment.

TABLE A4

Estimated Labor Cost per Worker in the
Nonagricultural, Nonmining, Private Wage
and Salary Sector of Maricopa County
($1000)

Industry	1975	1976
Construction	$15.121	$15.651
Manufacturing	14.156	14.937
Trans., Comm., & Utilities	16.524	18.443
Trade	8.675	9.392
Fin., Ins., & Real Estate	11.720	12.615
Services	9.838	10.612

Source: Bureau of Economic Analysis Data.

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