

Published once in June and July, twice in May, Aug., Oct., Nov., and Dec., and 3 times in Jan., Feb., Mar., April, and Sept. by the University of Nebraska-Lincoln, Dept. of Publications Services & Control, 209 Nebraska Hall, Lincoln, NE 68588. Second-class postage paid Lincoln, Nebraska.

Prepared by the Bureau of Business Research
College of Business Administration

THE NEW CONSUMER PRICE INDEX

Each month the federal government makes available to the public a large number of statistics that are designed to reflect the condition and movement of the economy. With the possible exception of the unemployment rate, none receives as much attention as the changes in the Consumer Price Index (CPI). This index is designed to represent the changes in the prices that consumers pay for the goods and services purchased. Since it is a consumer-oriented index, it is frequently referred to as a cost-of-living index and is generally used to determine the changes in real incomes. Because of its wide acceptance, the CPI is the most used index in escalation clauses of contracts. It is estimated that almost one-half of the population is directly affected by changes in the CPI. It is typically used to make adjustments in union contracts, Social Security payments, wages of Civil Service employees, pension benefits of retired military personnel, rental payments, life insurance policies, alimony payments, and many other types of indexed payments. It is reasonable to expect that more future contracts will be tied to some type of index because of the high rates of inflation experienced during the last ten years and the public's expectation that inflation will continue for the foreseeable future.

To assure that the CPI reflects properly the prices being paid by consumers for the goods and services they are purchasing, the Bureau of Labor Statistics (BLS) periodically revises the index. The latest revision was made public with its February, 1978, release. It is the objective of this article to describe the more salient changes of this revision.

The Consumer Price Index is generated by establishing a fixed list of goods and services that the population repeatedly purchases and surveying periodically the prices of these items, usually on a monthly basis. Consequently, one of the most difficult problems in constructing the index is the selection of the "basket of goods" being priced, because the inclusion of items that consumers do not frequently purchase has little relationship to their cost of living. To establish which items consumers are purchasing, the BLS conducts a Consumer Expenditure Survey, which shows their average purchases during some specified time period. The new survey was conducted during 1972 and 1973. Prior to February, the CPI was based on items purchased as of a survey made in 1961 and 1962. It is obvious that the purchasing habits of the public change over time and that more frequent surveys are desirable. However, it took eight years to complete the new survey and cost more than \$50 million. For these reasons the BLS assumes that a new survey every ten to twelve years is adequate.

The second important characteristic of an index is the selection

of the population to be included. The old CPI (prior to February, 1978) was based on a sample that included only urban households headed by wage earners and clerical workers. This group was believed to include about 35 to 40 percent of the total population. Thus, the basket of goods chosen for the old index was determined by this group as of 1961-1962. Since there were so many contracts extant that were using the old CPI, it was considered desirable that an index be constructed that used this sample population, that is, urban wage earners and clerical workers, but which would be based on the new basket of goods. Therefore, there is currently being published an index that is based on the population included in the old CPI, but which is weighted by the items included in the basket of goods designed for the new CPI. The old index, using the original weights, was published for a few months to provide users an opportunity to decide which of the two newer indices to select.

The new CPI was designed to provide a much broader population coverage. It includes the purchasing patterns of all urban households. This group is assumed to represent about 80 percent of the total population. In addition to urban wage earners and clerical workers, it includes such diverse groups as the self-employed, white-collar workers, professional workers, and the lower-income groups, such as the unemployed, the retired, and welfare recipients. Excluded from the new CPI are military personnel, the institutionalized population, and nonurban workers. The new CPI is based on a new basket of goods and includes a larger percentage of the population than any previous index.

To evaluate the manner in which consumer expenditures have changed, the relative weights of major expenditure categories are shown in Table 1 and Chart 1 (p. 2). There have been significant changes in the types of goods and services purchased, and this has an impact on the way in which the CPI behaves. For example, a given increase in the cost of housing has a greater impact on the price index today than would have been true during earlier periods, because a larger proportion of total expenditures is allocated for this use. Conversely, food expenditures are not as significant as an individual budget item as during previous years. This does not mean that large increases in the price of foodstuffs may not have a substantial impact on the level of consumer prices. After the Consumer Expenditure Survey establishes the proportion of income allocated to each of the categories, the proportion becomes the index weight for that item, and subsequent changes in the contribution that this item makes to the level of the CPI are the result of price changes. Therefore, there will be changes in the monthly distribution of consumer

(Continued on page 3)

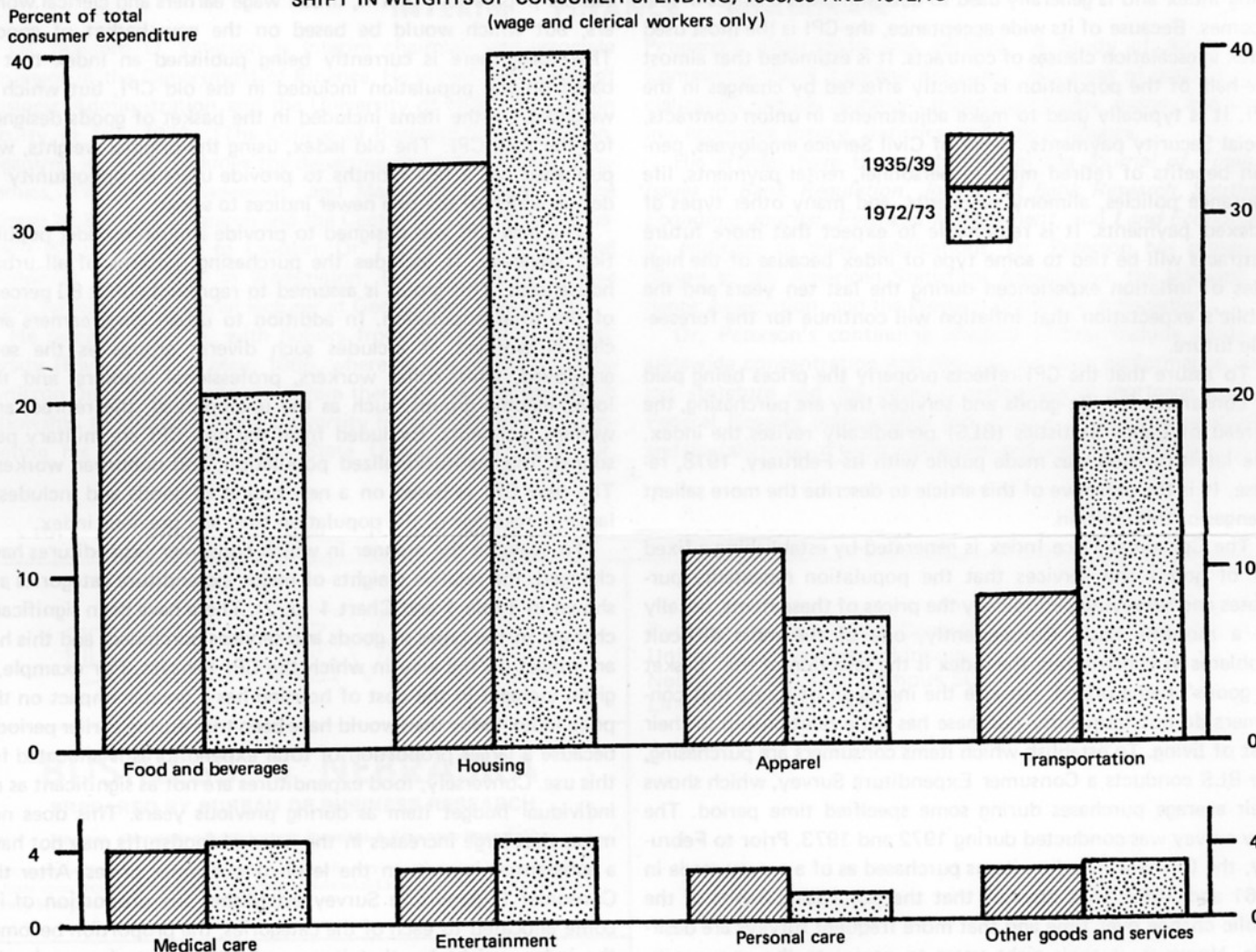
Table 1
 PERCENTAGE DISTRIBUTION OF THE CONSUMER PRICE INDEX MARKET BASKET
 BY MAJOR EXPENDITURE GROUP, BENCHMARK YEARS

Major Group	Wage Earners and Clerical Workers				All-Urban Consumers (New CPI) 1972-73*
	1935-39	1952	1963	1972-73	
Food and beverages	35.4	32.2	25.2	20.4	18.8
Housing	33.7	33.6	34.9	39.8	42.9
Apparel	11.0	9.0	10.6	7.0	7.0
Transportation	8.1	11.3	14.0	19.8	17.0
Medical care	4.1	4.8	5.7	4.2	4.6
Entertainment	2.8	4.3	3.9	4.3	4.5
Personal care	2.5	2.1	2.8	1.8	1.7
Other goods and services	2.4	2.7	2.9	2.7	2.8

*Preliminary weighting; final weights to be announced at a later date.

Source: U.S. Department of Labor, Bureau of Labor Statistics, *The Consumer Price Index: Concepts and Contents Over the Years*, Report 517 (1977).

Chart 1
 SHIFT IN WEIGHTS OF CONSUMER SPENDING, 1935/39 AND 1972/73
 (wage and clerical workers only)



(Continued from page 1) expenditures among those items being purchased, but these will result primarily from price changes of the individual items.¹

In addition to monthly changes in the proportion of consumer incomes used to purchase specific items, the two available new CPIs do not uniformly respond to price changes. However, the differences are not as great as one might expect; the differences can be seen from the data shown in Table 2. The consistency between the two indexes is primarily due to similarity in the basket of goods upon which the two indexes are based. This is not surprising, because the two groups include households that have about the same average incomes. While the all-urban index includes the higher-income salaried groups and the self-employed, it also includes the retired and unemployed. Most analysts and the BLS do not regard it likely that the two indexes will vary substantially from each other over time. This assumption has been supported by the evidence so far this year; for some months the rates were identical, for example, January.

In Table 1 (also see Chart 1) it is shown that consumer baskets of goods varied greatly over time. In Table 1 the distribution of expenditures by consumers is included for the old CPI (urban clerical and wage earners) for comparison with the two new indexes as of the end of 1977. With such divergent weights, one might ask whether the new all-urban index will rise faster or more slowly than the old index. There is no way to make such a determination. However, based on limited comparisons for the last ten years, it does not appear that the rate of increase in the new index would have differed much from that recorded by the old index.

There are several additional characteristics of the new CPI which are of interest to users, all of which are designed to improve the accuracy of the calculations and to broaden the applicability of the index. First, the number of urban geographical areas sampled for price changes has been increased from 56 to 85 areas. This increases the coverage of the index and enables the BLS to compute more regional indexes, such as those for larger cities. Second, there is an improved method used for selecting the items to be priced each month. Under the old system there was a fixed basket of about 400 rigidly defined items to be priced each month. In many instances a replacement item had to be chosen which would presumably fit the item's detailed description; under the new system more general descriptions of commodities are used. Third, the retail outlets surveyed are more representative of those actually used (stores, mail-order houses, and the like).

¹This becomes apparent when one considers the actual computation of the index. The CPI is an aggregate weighted index, which economists and statisticians call a Laspeyres Index. It reduces to a formula of the following type:

$$I = \frac{\sum P_g Q_b}{\sum P_b Q_b}$$

where the *b*s represent the base period and the *g*s the given period. The *P*s are the prices of the items and the *Q*s the quantity weights ascribed to the respective items making up the index. Thus, the only factor changing is the observed price for the given period during which prices are surveyed. Even though the base-period quantity is fixed, the total expenditure for a given item may result from the price changes of one item relative to other items in the index.

Fourth, the use of monthly pricing of basket items has been increased and quarterly pricing has been replaced by bimonthly pricing.

One further aspect of the CPI is important to users: whether the seasonally adjusted or unadjusted versions should be used. The BLS uses a complex statistical technique to purge the raw data of the effects of holidays, monthly changes in sales, and many other disturbances which are recurrent and periodic. Such disturbances have the effect of making comparisons of different periods less meaningful and of magnifying the importance of forces which have no lasting economic content. The index most frequently reported by the popular press is the adjusted version, and it is the more interesting if trends or changes are being considered. However, consumers do not have seasonally adjusted incomes with which to purchase goods and services, nor are the prices paid seasonally adjusted. Consumers are more interested in the unadjusted index, and it is typically used in collective bargaining contracts and other arrangements that involve escalator clauses.

In summary, the new CPI appears to be a vastly improved index in all important aspects. The weights are more representative of items currently purchased by consumers, and the sampling

(Continued on page 6)

Table 2
DISTRIBUTION OF CONSUMER EXPENDITURES FOR
GOODS AND SERVICES FOR DECEMBER, 1977

	New CPIs		Old CPI
	All-Urban Consumers	Wage & Clerical Workers	
All items	100.0	100.0	100.0
Food and beverages	18.8	20.5	26.2
At home	12.2	13.5	18.8
Away from home	5.5	5.8	5.3
Alcoholic beverages	1.1	1.2	2.1
Housing	43.9	40.7	35.5
Rent, residential	5.6	5.3	4.5
Other rental costs	0.7	0.5	0.4
Homeownership	22.8	20.6	16.8
Home purchase	10.0	8.8	6.1
Financing, taxes, insurance	9.2	8.5	6.9
Maintenance	3.7	3.3	3.8
Fuel oil, coal, bottled gas	0.9	0.9	1.1
Gas, electricity	3.4	3.4	3.0
Other utilities	2.2	2.1	1.4
Furnishings and operation	8.2	7.9	8.3
Apparel and upkeep	5.8	5.8	9.0
Commodities	5.1	5.2	7.6
Services	0.7	0.6	1.4
Transportation	18.0	20.2	13.3
Private	16.9	19.2	12.0
New cars	4.0	4.3	1.9
Used cars	3.0	3.9	2.1
Gasoline	4.2	4.8	3.2
Maintenance	1.5	1.7	1.1
Other	4.1	4.7	3.7
Public	1.1	1.0	1.3
Medical care	5.0	4.5	6.9
Commodities	0.9	0.8	0.8
Services	4.1	3.7	6.1
Entertainment	4.1	3.9	3.7
Other items	4.4	4.4	5.5

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Review and Outlook

Real output in Nebraska increased in August following a sizeable decline in July, with the physical volume index for the state registering a gain of 0.8 percent during the month. The value of the index was 40.5 percent above its 1967 base-period level (see Table 2). The August increase in state economic activity was broadly based, with four of the five sectors registering gains for the month. Those sectors and their July-to-August increases were: agriculture, +2.9 percent; manufacturing, +2.0 percent; government, +2.0 percent; and distributive, +0.2 percent. The index for the construction sector fell 5.6 percent.

The gain in economic activity in August represented only the third monthly increase in the state physical volume index during

1978, a year which has been characterized by a lack of decisive movement in the index. Although the August level of the index was significantly below its peak level of 148.9 recorded in November of 1977, the Nebraska economy has shown some improvement on a year-to-date basis. Real output during the first eight months of 1978 was 1.4 percent above the level for the comparable period last year, but there has been considerable deceleration in the rate of growth since the beginning of the year. It is probable, therefore, that the growth rate for the Nebraska economy in 1978 will be considerably below the 5.8 percent growth recorded in 1977.

Reductions in the agriculture and construction indexes were primarily responsible for the rather (Continued on page 5)

Notes for Tables 1 and 2: (1) The "distributive" indicator represents a composite of wholesale and retail trade; transportation, communication and utilities; finance, insurance, and real estate; and selected services. (2) The "physical volume" indicator and its components represent the dollar volume indicator and its components adjusted for price changes using appropriate price indexes—see Table 5, page 5.

ECONOMIC INDICATORS: NEBRASKA AND UNITED STATES

1. CHANGE FROM PREVIOUS YEAR				
August, 1978	Current Month as Percent of Same Month Previous Year		1978 Year to Date as Percent of 1977 Year to Date	
	Nebraska	U.S.	Nebraska	U.S.
Indicator	Nebraska	U.S.	Nebraska	U.S.
Dollar Volume	108.6	111.7	109.4	111.1
Agricultural	103.8	113.6	113.5	108.6
Nonagricultural	109.3	111.7	108.8	111.2
Construction	112.6	116.4	108.9	115.3
Manufacturing	115.1	112.3	112.4	111.4
Distributive	107.3	112.0	108.3	111.6
Government	107.5	107.4	105.2	108.0
Physical Volume	99.1	103.5	101.4	103.9
Agricultural	83.7	93.7	98.2	97.9
Nonagricultural	101.7	103.8	101.9	104.1
Construction	100.7	104.2	98.4	104.2
Manufacturing	106.7	104.4	104.9	104.3
Distributive	99.4	103.8	101.2	104.2
Government	104.9	102.7	101.7	103.2

2. CHANGE FROM 1967		
Indicator	Percent of 1967 Average	
	Nebraska	U.S.
Dollar Volume	282.3	266.1
Agricultural	222.4	244.3
Nonagricultural	292.6	266.8
Construction	320.5	256.0
Manufacturing	324.9	254.8
Distributive	284.9	276.3
Government	269.3	260.1
Physical Volume	140.5	133.2
Agricultural	113.5	118.6
Nonagricultural	145.1	133.7
Construction	135.2	108.0
Manufacturing	156.6	123.9
Distributive	144.0	139.7
Government	137.1	141.6

3. NET TAXABLE RETAIL SALES OF NEBRASKA REGIONS AND CITIES (Adjusted for Price Changes)

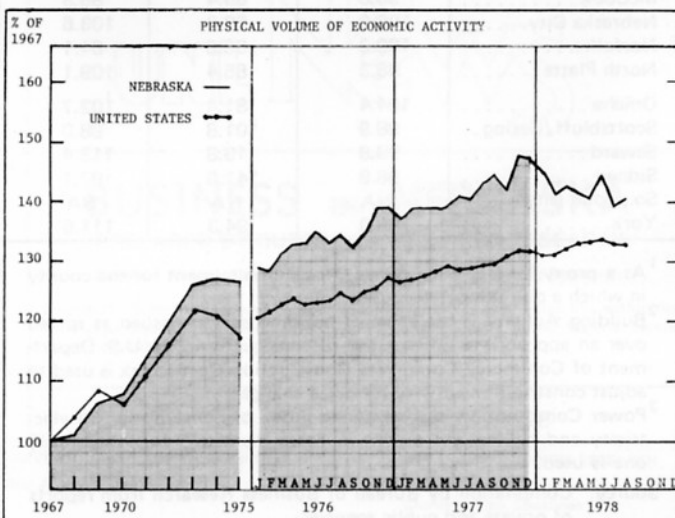
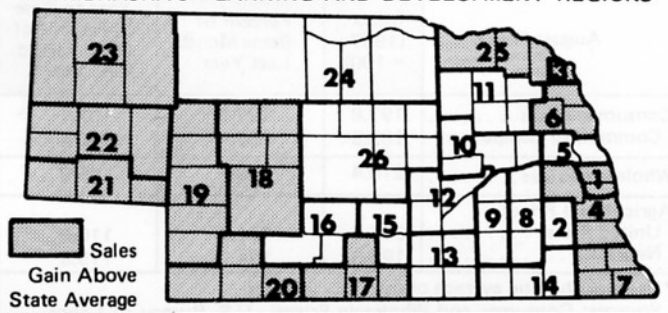
Region Number ¹ and City	City Sales ²	Sales in Region ²	
	Aug., 1978 as percent of Aug., 1977	Aug., 1978 as percent of Aug., 1977	Year to date '78 as percent of Year to date '77
<i>The State</i>	99.5	101.4	102.0
1 Omaha	93.2	94.9	104.5
Bellevue	95.5		
2 Lincoln	100.0	99.9	98.7
3 So. Sioux City	109.4	112.4	106.4
4 Nebraska City	101.9	116.2	109.0
5 Fremont	99.2	103.7	101.5
Blair	113.3		
6 West Point	112.8	113.3	105.4
7 Falls City	104.1	106.3	102.5
8 Seward	114.8	106.8	96.9
9 York	93.8	100.0	92.2
10 Columbus	101.3	106.9	100.7
11 Norfolk	104.1	106.9	100.0
12 Grand Island	102.1	104.2	101.6
13 Hastings	80.0	93.3	97.5
14 Beatrice	100.5	105.6	99.7
Fairbury	98.9		
15 Kearney	92.8	97.1	97.6
16 Lexington	100.0	100.6	94.8
17 Holdrege	109.6	110.1	104.6
18 North Platte	96.9	102.4	103.3
19 Ogallala	117.8	120.5	106.4
20 McCook	102.7	105.1	103.4
21 Sidney	107.6	111.1	109.8
Kimball	107.1		
22 Scottsbluff/Gering	100.3	106.9	105.7
23 Alliance	130.0	117.8	115.2
Chadron	120.5		
24 O'Neill	96.1	109.8	92.6
25 Hartington	102.7	103.9	104.3
26 Broken Bow	100.5	108.4	98.1

¹ See region map below.

² Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales; city totals exclude motor vehicle sales.

Compiled from data provided by Nebraska Department of Revenue.

1978 YEAR TO DATE AS PERCENT OF 1977 YEAR TO DATE IN NEBRASKA'S PLANNING AND DEVELOPMENT REGIONS



(Continued from page 4) lackluster performance of the state economy during the first eight months of 1978. These two sectors have experienced respective year-to-date declines of 1.8 percent and 1.6 percent.

Despite the drop in agricultural output, recently released data from the Bureau of Economic Analysis, U.S. Department of Commerce, indicate that farm income for the first two quarters of 1978 was more than 40 percent above the level recorded for the first two quarters of 1977. This was due to increases in prices for agricultural products which accompanied the decline in output during this period. It is unlikely that this gain in income will continue throughout the remainder of 1978, since prices received by Nebraska farmers have fallen for three consecutive months. The July-to-August decrease was 3.4 percent.

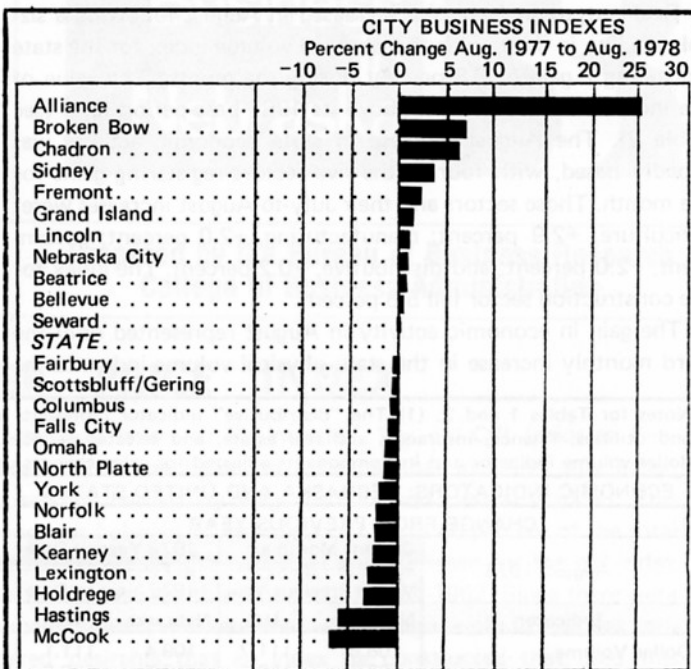
Seasonally adjusted construction activity also was down for the year. Decreases in nonbuilding construction were responsible for the decline in this sector. The construction of two major power plants was nearing completion and has adversely affected the level of nonbuilding construction. Although residential construction was above its 1977 level, tighter conditions in the credit markets may severely hinder future construction and further depress the construction index.

It is encouraging to note that the reductions in activity levels were limited to two sectors. The remaining three sectors have demonstrated improvement over 1977. Growth in the manufacturing sector has been accompanied by a rise in manufacturing employment, which reached 93,400 on a seasonally adjusted basis in August—2.6 percent higher than it was the previous August.

This increased manufacturing employment, together with higher levels of employment in the distributive and government sectors, has contributed to a significant reduction in the state unemployment rate. In August, the preliminary Nebraska unemployment rate was 2.6 percent, compared to a seasonally adjusted unemployment rate of 5.9 percent for the United States. The August Nebraska unemployment rate was the lowest since May of 1970.

The city business indexes for August reveal that eleven of the twenty-five reporting cities registered increases in economic activity relative to August, 1977. Once again Alliance posted the largest gain, with a 25.3 percent increase. Alliance was the only city to record increases in all four components of the city business index. Some of the other Nebraska cities experiencing August-to-August increases in business activity were Broken Bow (+6.8 percent), Chadron (+6.0 percent), Sidney (+3.8 percent), and Fremont (+2.2 percent).

J. A. D.



Source: Table 3 (page 4) and Table 4 below.

The State and Its Trading Centers	Percent of Same Month a Year Ago		
	Employment ¹	Building Activity ²	Power Consumption ³
<i>The State</i>	100.7	90.0	103.6
Alliance	117.7	194.7	132.9
Beatrice	100.0	120.4	101.2
Bellevue	104.4	114.1	98.3*
Blair	97.7	46.7	65.0
Broken Bow	97.3	193.9	148.1
Chadron	92.0	118.6	102.5
Columbus	99.8	56.0	114.6
Fairbury	98.1	85.6	116.2*
Falls City	98.7	45.7	110.6
Fremont	98.7	155.7	111.3*
Grand Island	99.1	102.9	113.4
Hastings	99.4	143.8	107.9
Holdrege	98.0	19.9	105.3
Kearney	98.6	99.7	109.1
Lexington	98.8	51.8	103.2
Lincoln	102.7	95.6	104.9
McCook	90.6	59.4	85.8
Nebraska City	106.0	58.3	103.6
Norfolk	100.3	56.0	84.1
North Platte	98.3	85.4	109.1
Omaha	104.4	81.4	102.7
Scottsbluff/Gering ..	98.9	101.8	98.0
Seward	99.8	19.8	113.4
Sidney	98.9	141.0	97.1
So. Sioux City	NA	NA	NA
York	99.0	94.3	111.6

¹ As a proxy for city employment, total employment for the county in which a city is located is used.
² Building Activity is the value of building permits issued as spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Construction Cost Index is used to adjust construction activity for price changes.
³ Power Consumption is a combined index of consumption of electricity and natural gas except in cases marked * for which only one is used.

Source: Compilation by Bureau of Business Research from reports of private and public agencies.

August, 1977	Index (1967 = 100)	Percent of Same Month Last Year	Year to Date as Percent of Same Period Last Year*
Consumer Prices	197.8	107.9	107.1
Commodity component	189.3	107.4	106.4
Wholesale Prices	210.4	108.1	106.9
Agricultural Prices			
United States	206.0	121.2	110.9
Nebraska	196.0	124.1	115.8

*Using arithmetic average of monthly indexes.
 Sources: Consumer and Wholesale Prices: U.S. Bureau of Labor Statistics; Agricultural Prices: U.S. Department of Agriculture.

NEW CONSUMER PRICE INDEX

(continued from page 3)

procedures should improve the accuracy of the index due to greater frequency of surveys and wider coverage. There remain the problems of selecting the appropriate uses for the CPI and the tendency for the public to attach greater importance to it than it deserves. It should be remembered that the index is generated from a statistical sample, and a given month's number is subject to substantial error. One of the more serious problems in the construction of indexes is the inability to account accurately for qualitative changes in the items included in the index. Although attempts are made to impute such adjustments, they are not entirely satisfactory. Finally, the CPI is a generalized index which applies to a widely diverse population. Its application to a narrowly defined segment of the population may be misleading.

L. WAYNE DOBSON*

*Abbott Professor of Banking, College of Business Administration, University of Nebraska-Lincoln.

NEW CHAIRED PROFESSORSHIP

Dean Gary Schwendiman announces the selection of Dr. Sang M. Lee to hold the new chair in the College of Business Administration established by the First National Bank of Lincoln.

Dr. Lee is chairman of the College of Business Administration's Department of Management. He joined the University of Nebraska-Lincoln faculty in 1976.

He received his doctorate in management science from the University of Georgia in 1968 and his master of business administration degree was granted by Miami of Ohio in 1963. Dr. Lee also holds a bachelor of science degree in economics from Seoul University in Korea. Prior to joining the faculty at the University of Nebraska-Lincoln, he was a member of the faculty at Virginia Polytechnical Institute.

Dr. Lee has published numerous books and articles in the field of management science. His publications have appeared in such journals as *Management and Science*, *Decisions Science*, *Academy of Management*, *Journal of Marketing*, *Journal of Applied Psychology*, *Journal of Finance*, and *Journal of Risk and Insurance*.

INTERIM FINANCE CHAIRMAN

Dr. Manfred O. Peterson is interim chairman and associate professor in the Department of Finance. He joined the College of Business Administration and the University of Nebraska-Lincoln faculty in fall, 1976. (The College of Business Administration, organized in 1919, includes the departments of Accounting, Economics, Finance, Management, and Marketing, as well as the Bureau of Business Research and the Center for Economic Education.) Prior to coming to Lincoln, Dr. Peterson was a financial economist with FDIC in Washington, D.C. During his tenure there, he was a professorial lecturer at Georgetown University.

He received his B.A. with honors from Wisconsin State University (River Falls) in May, 1966, where he was president of the Omicron Delta Epsilon chapter. From there, he received an NDEA fellowship to Michigan State University for graduate study. Completing his Ph.D. at Michigan State University in 1971, Dr.

Peterson's dissertation was entitled "A Study of Asymmetric Commercial Bank Lending Behavior." His areas of graduate specialization include monetary theory and policy, money and banking, economic theory, statistics, and public finance.

His articles have been published in the *Journal of Finance*, *Issues in Bank Regulation*, *Journal of Bank Research*, *Southern Economic Journal*, *Financial Management*, and *Land Economics*. In addition to these publications, Dr. Peterson has presented papers to the American Statistical Association, the Midwest Finance Association, and the Western Economic Association.

Dr. Peterson's continuing research efforts include study of statewide concentration and commercial bank performance, market structure and the terms of conventional mortgage lending, Federal Reserve membership and control of the money supply, and liberalization of thrift institution and commercial bank powers.

-6-

UNL News

BUSINESS IN NEBRASKA

PREPARED BY BUREAU OF BUSINESS RESEARCH

Member, Association for University Business & Economic Research

Business in Nebraska is issued monthly as a public service and mailed free within the State upon request to 200 CBA, University of Nebraska-Lincoln 68588. Material herein may be reproduced with proper credit.

No. 411

December, 1978

UNIVERSITY OF NEBRASKA-LINCOLN

roy A. Young, Chancellor

COLLEGE OF BUSINESS ADMINISTRATION

ary Schwendiman, Dean

BUREAU OF BUSINESS RESEARCH

Donald E. Pursell, Director

Charles L. Bare, Statistician

Jerome A. Deichert, Research Associate

Shelley Novick, Research Associate

James R. Schmidt, Research Associate

Jean T. Keefe, Editorial Assistant

Publications Services & Control
University of Nebraska-Lincoln
Nebraska Hall—City Campus 5U
Lincoln, Nebraska 68588