

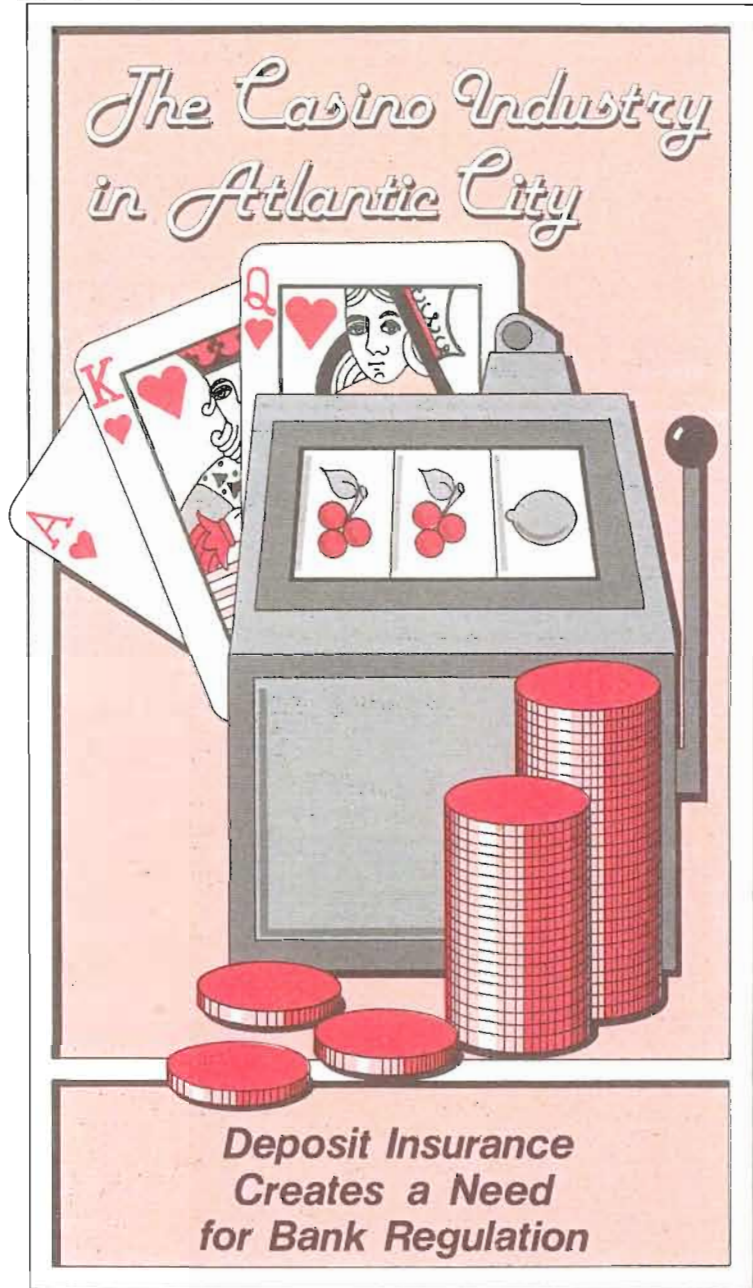
BUSINESS REVIEW

Federal Reserve Bank of Philadelphia

ISSN 0007-7011

JANUARY · FEBRUARY 1982

3.0 02



JANUARY/FEBRUARY 1982

**THE CASINO INDUSTRY
IN ATLANTIC CITY**

Thomas P. Hamer

. . . The casinos have increased employment and relieved unemployment, but they haven't made Atlantic City a year-round resort.

**DEPOSIT INSURANCE
CREATES A NEED
FOR BANK REGULATION**

Mark J. Flannery

. . . Since their depositors are insured, banks could be tempted to take excessive risks in the absence of regulation.

**DID THE TAX CUT REALLY CUT TAXES?
A FURTHER NOTE**

**BUSINESS
REVIEW**

Federal Reserve Bank of Philadelphia
100 North Sixth Street
Philadelphia, Pennsylvania 19106

The BUSINESS REVIEW is published by the Department of Research every other month. It is edited by John J. Mulhern with the assistance of Michael McNamara. Artwork is directed by Ronald B. Williams. The REVIEW is available without charge.

Please send subscription orders and changes of address to the Department of Research at the above address or telephone (215) 574-6428. Editorial communications also should be sent to the Department of Research or telephone (215) 574-6426. Requests for additional copies should be sent to the Department of Public Services.

* * * * *

The Federal Reserve Bank of Philadelphia is part of the Federal Reserve System—a

System which includes twelve regional banks located around the nation as well as the Board of Governors in Washington. The Federal Reserve System was established by Congress in 1913 primarily to manage the nation's monetary affairs. Supporting functions include clearing checks, providing coin and currency to the banking system, acting as banker for the Federal government, supervising commercial banks, and enforcing consumer credit protection laws. In keeping with the Federal Reserve Act, the System is an agency of the Congress, independent administratively of the Executive Branch, and insulated from partisan political pressures. The Federal Reserve is self supporting and regularly makes payments to the United States Treasury from its operating surpluses.

The Casino Industry in Atlantic City: What Has It Done for the Local Economy?

by Thomas P. Hamer*

"Outside of making Atlantic City the queen that it once was, it [casino gambling] means employment People will get off the unemployment lines." Assemblyman Howard Kupperman.

"We have to expand to a 52-week economy we have no year-round attraction." Thomas Coggins, Jr., President, Chamber of Commerce of Greater Atlantic City.†

Hoopla and hopes surrounded the opening of the first Atlantic City casino in May of 1978. Nearly four years later, the dice are rolling at eight more casinos, and several others are under construction. But some critics don't believe that casinos have done enough for the local economy.

Have the benefits from casinos lived up to

*Thomas P. Hamer of Glassboro State College received his Ph.D. in economics from the Claremont Graduate School. He specializes in construction and use of small-area econometric models. The present article, prepared at the request of the Philadelphia Fed, applies such a model to the economy of Atlantic City and its environs.

†Testimony before the New Jersey State Assembly, State Government and Federal Interstate Relations Committee, April 14, 1976.

the promises? How do recent economic data for Atlantic City and the immediately surrounding area compare with what the data would have been if the casinos had not come along?

So far as jobs are concerned, the past three years' numbers look pretty good. Total average annual employment in Atlantic County is substantially higher than it would have been without casinos, and unemployment insurance claims have stabilized instead of continuing their earlier upward trend. But the seasonal employment swings that have plagued the shore economy as long as residents can remember haven't gone away. Atlantic City still booms in the summer and busts in the winter. If this old resort is going to make much further progress toward re-

covery, it will have to cope with seasonality.

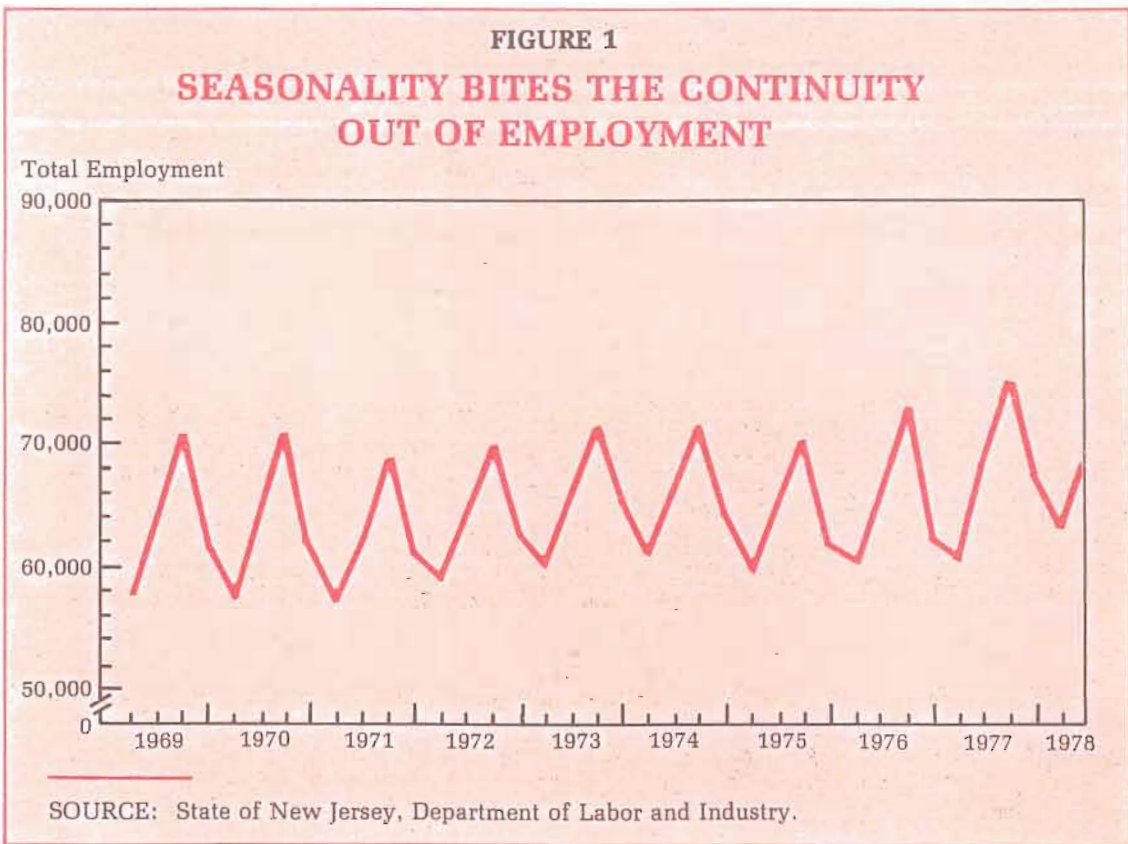
THE WAY IT WAS

Stagnation characterized the Atlantic County economy for the decade before casinos. Employment grew at only a third of the national rate, and population grew only marginally. Atlantic City itself lost over 10 percent of its residents. Obviously, the picture wasn't a bright one when casinos appeared on the scene.

Mixed Activity. Of course, not every industry was affected in quite the same way. Some were stronger, others weaker. Some were more resistant than others to movements in the business cycle. And business in some industries was much less seasonal than

in others.

In the lodging industry (actually in Standard Industrial Classification 70, which includes hotels, motels, and other lodging places), average monthly employment declined by over 40 percent from 1968 to 1977. Employment in manufacturing overall declined greatly during the 1973-75 recession, and although by 1977 durables jobs had recovered to their former level, jobs in nondurables were off by a whopping 28 percent. Employment in construction also was severely affected by recessions, so that despite some recovery it declined by 12 percent for the ten years. Transportation and public utilities employment saw a smaller decline but a decline nonetheless. These slippages were



hardly offset by gains in trade, services, finance, and government.

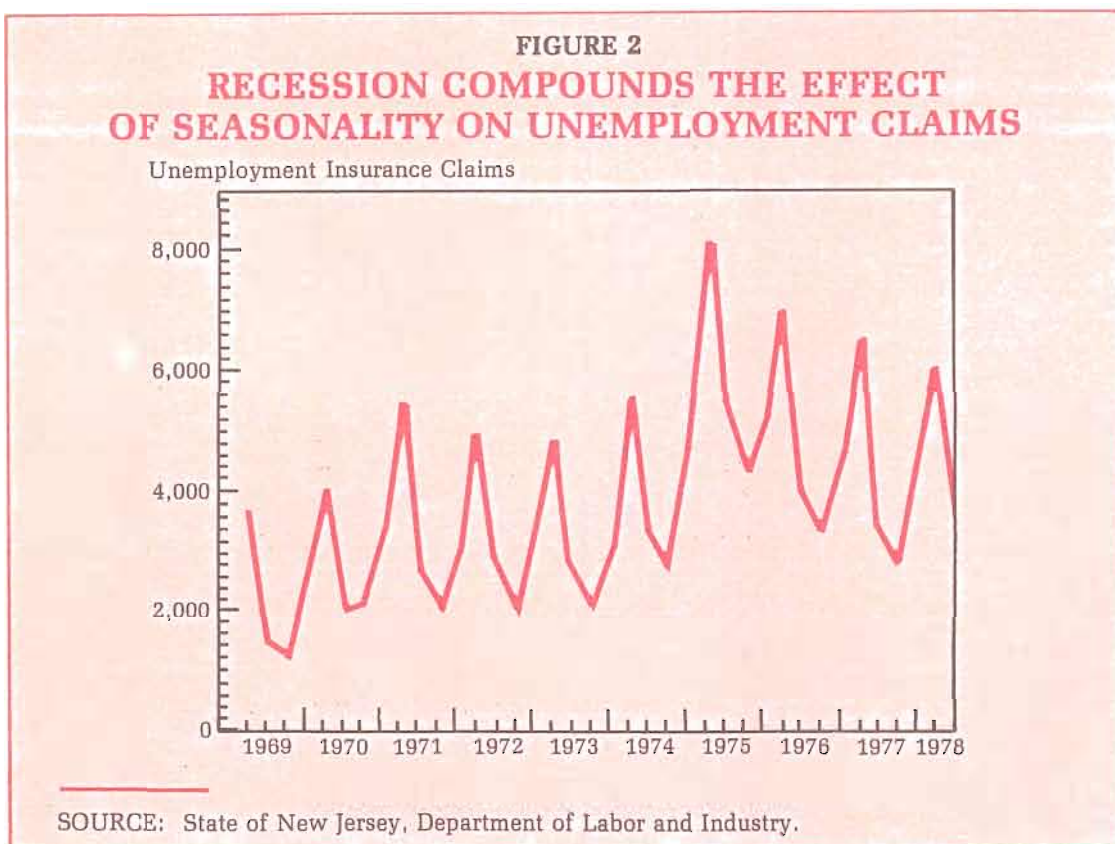
Further, Atlantic City had to deal not only with stagnation and sensitivity to the business cycle but also with seasonal fluctuations (Figure 1). Shore jobs always have been far scarcer in the winter than in the summer. Over the ten years before casinos, employment in the winter (first quarter) averaged only 82 percent of employment in the following summer (third quarter)—an average seasonal change of 12,500 jobs each year.¹ In the lodging industry the pattern was even more severe, worsening as time passed. The

ratio of lodging-industry employment in the winter to that in the summer decreased from 65 percent in 1968 to 47 percent in 1977, averaging 55 percent over the decade.

These weaknesses in the Atlantic County economy showed up clearly in the unemployment figures.² The monthly unemployment insurance (UI) claims more than doubled over the precasino decade, peaking at 8,200 during the 1975 recession (Figure 2). Unemployment claims fluctuated even more than total employment: on average, winter

¹Average monthly total nonfarm employment.

²Average monthly insurance claims of county residents who are totally unemployed and eligible under one of three programs: regular, Federal employee, and veteran. Extended benefit claims are excluded.



claims outran summer claims by more than two to one. By 1977, some 4,000 more people were on unemployment in the winter than in the summer.

In short, Atlantic City's deteriorating facilities and fading attractions drove the tourists elsewhere. Lodging business fell off, and other industries declined as well. The old spa developed a pervasive case of economic malaise.

To the Rescue. Casinos had been proposed as a stimulus for the local economy for quite some time, but their approval came neither easily nor all at once.

The issue of casinos first appeared on New Jersey ballots in November of 1974. The 1974 proposal, however, would have let casinos be licensed anywhere in New Jersey. The threat of widespread legalized gambling and the lack of pressing economic need helped defeat the issue three to two.³

By 1976, those campaigning for casinos were better organized and better financed, and the issue was focused on Atlantic City and its economic plight. The 24 months between the two referenda had seen more inflation and a soaring unemployment rate. Backers urged that casinos could provide an economic fix for the area. Also, the 1976 proposal specified that the potential evils of legalized gambling were to be contained within the 12 square miles of Atlantic City. The voters of New Jersey said Yes to this proposal and to the hope of turning the city around.

Memorial Day weekend of 1978 marked the opening of the Resorts International Hotel and Casino. Since then casino openings and employment have accelerated. Caesar's Boardwalk Regency broke Resorts' year-long monopoly in June of 1979. Both of these

facilities were renovated hotels whose erstwhile grand ballrooms were stuffed with the gadgetry of gambling. The delay of new construction caused Bally's Park Place casino not to open until December of 1979. But after a nine-month lull, four additional casinos opened in rapid succession: the Brighton (now the Sands), Harrah's Marina, and the Golden Nugget in 1980, and then the Playboy in 1981. Employment in hotels and other lodging places leaped from less than 2,000 in the first quarter of 1978 to over 22,000 in the first quarter of 1981 (Figure 3). Thus enormous economic forces were unleashed in Atlantic County in a very short period of time.

Rosy predictions are one thing. But when the casino stone finally was dropped into the Atlantic County pond, no one could say for sure what sort of ripples it would make. The future isn't easy to predict, and the best-laid plans can go astray. Further, local economies are especially complex and fragile entities—not least of all when they are in decline.

What has happened to date has come to pass because of a wide range of influences interacting with one another. So far as jobs are concerned, the main mechanism at work has been the local labor market. And the workings of this market are likely to be decisive in determining what happens to jobs and joblessness in Atlantic County from this point forward.

THE LABOR MARKET AT WORK

What happens when a new industry appears in a local labor market or an old industry experiences sudden and spectacular growth?

One typical effect is the multiplier effect: people are hired, and as more money is earned, more is spent. Wage earners will spend some of their wages where they earn them, and so these wages will generate further local employment.

Also, a growth industry is likely to need more facilities, or at least renovated ones,

³This is not to say that there weren't other issues such as regulatory control by the state and the impact on the state's finances. See Public Hearing before Assembly State Government and Federal and Interstate Relations Committee on ACR-126, April 14, 1976, pp. 6-7.

FIGURE 3
CASINOS OPEN AT A FASTER PACE

Year and Quarter	Casinos and Opening Months	Employment in Hotels and Other Lodging Places (SIC 70) Not Seasonally Adjusted
1978 I		1,711
II	Resorts International, May	4,063
III		5,787
IV		5,019
1979 I		5,459
II	Caesar's Boardwalk Regency, June	9,184
III		12,168
IV	Bally's Park Place, December	11,842
1980 I		13,730
II		14,964
III	Sands, August	18,058
IV	Harrah's Marina, November	
	Golden Nugget, December	21,393
1981 I		22,772

SOURCE: Quarterly employment is the simple average for three consecutive months; employment is that covered by unemployment insurance. Data are from the State of New Jersey, Department of Labor and Industry.

and this demand will be reflected in construction hiring. The industry will need to hire its own employees, too, and it will need to be supplied by vendors. All these newly employed people will have fatter pay envelopes that will finance stronger purchases of consumer goods and services. Thus employment in wholesale and retail trade, services, transportation, food processing, and banking should rise.

Another positive employment effect is unique to service industries such as lodging, where the ultimate consumer must come to the provider. Service industries increase local foot and road traffic. Buyers who come to town for one service typically do not spend all of their money in one place; they spend some of it in local restaurants, for example, some in shops, and some in jitneys. These positive ripples should boost business

at a whole range of service establishments.

Competition for labor, however, can reduce employment in some industries, offsetting the positive effects somewhat. Workers with appropriate skills will dive for the lucrative construction jobs and other growth industry jobs, and only employers who are benefiting from the general expansion will raise wages to retain workers or attract replacements. Other employers will be faced with increasing numbers of unfillable vacancies, probably concentrated along industry lines.

Increased competition for capital and land also can cut into the demand for labor. Local employers who don't benefit from the boom will have to compete with the expanding firms for loans at local banks. Those that can't get loans may lay people off and slow down their operations. Some firms even may

find more profit in closing down and selling the land at inflated prices than in trying to stay open. Thus the voracious appetite for resources in the growing sectors could starve out the marginal firms. While the gains still should outweigh the losses, the net positive effect on employment could wind up being smaller than anticipated.

Further, more employment may not translate into less unemployment. Much of what happens to residents who are unemployed when the boom occurs depends on what other people do. Increased employment opportunities may bring other residents into the workforce: housewives, students, and retirees, for example, may be attracted to substitute wage earning for housework, classes, and leisure. Also, nonresidents may migrate into the area to get the new jobs. If these resident and nonresident additions to the workforce are more employable than the old UI claimants, the number of claims will not drop. In fact, it could rise if some of the new additions to the workforce are hired and then laid off or dismissed.

The seasonality of the shore labor market also can operate to drive up the number of UI claims. Employers in seasonal industries may pay unusually high wages to attract workers when business is good, in effect compensating workers for accepting jobs with a built-in layoff schedule. The workers will get higher unemployment payments because of their higher wages, and the employer will feel little compunction at layoff time. The result will be very high seasonal UI claims.

A growth industry changes many other things which affect people's welfare besides job prospects. Higher property values, rental costs, and taxes may induce many pensioners to take their transfer payment income elsewhere. Further demographic changes may come from the influx of younger people and their families. But changes in employment and unemployment remain of prime importance to the overall health of the regional

economy, as can be seen in the case of Atlantic City's experience with casinos.

CAPTURING THE CASINO EFFECTS

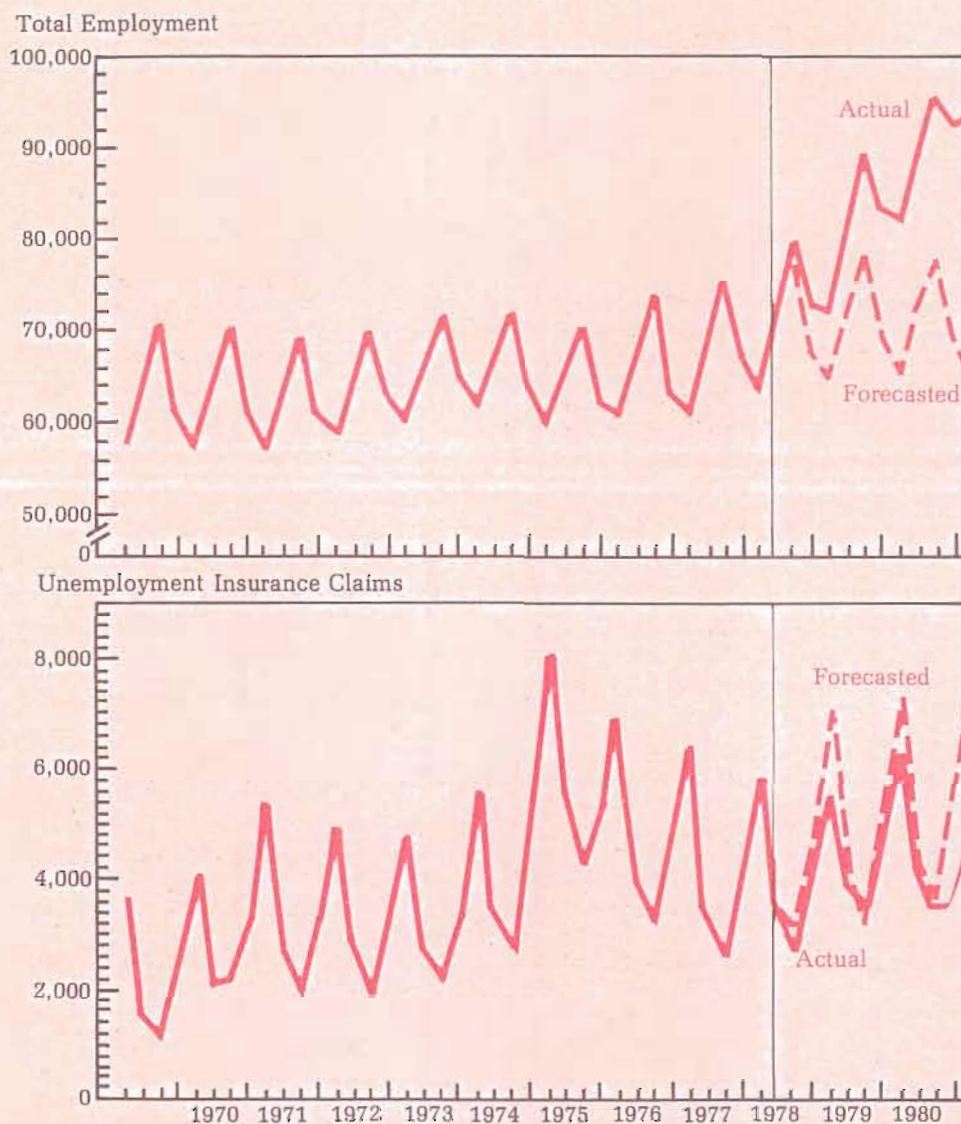
Like other regional economies, that of Atlantic County is tied closely to fairly widespread trends, including national ones. What happens in the local economy depends in large part on what happens in the national economy. Thus any attempt to capture the effects of casino openings must go beyond merely making lists of before and afters in the local economy. It must ask what would have happened in Atlantic County without casinos, and it must rely on information about both the local economy and the national economy.

To make the relevant comparisons, an econometric model of the precasino economy has been constructed to estimate what would have happened without casinos. Based on conditions in the precasino years, the model makes forecasts of employment and of unemployment insurance claims for the twelve quarters beginning with the first casino opening.

Jobs and Joblessness. The forecasted values of employment and of UI claims differ considerably from actual historical values (Figure 4). Compared to what would have been, the casino industry has meant large increases in employment in the lodging industry (as expected), and it has induced increases in construction as well. Construction of casinos caused a frenzy of activity that peaked in the last two quarters of 1979, with employment in the construction industry running about 5,000 above would-have-been levels. By the first quarter of 1981, this gain was down to about 2,000 as fewer casinos were actively under construction.

Other industries also experienced employment changes over time, and although their changes were not that much higher than the forecast to be significant statistically, they may well have been related to casino growth. Growth above the forecast levels occurred in

FIGURE 4
CASINOS BOOST EMPLOYMENT, CUT UI CLAIMS
IN ATLANTIC COUNTY



SOURCE: State of New Jersey, Department of Labor and Industry.

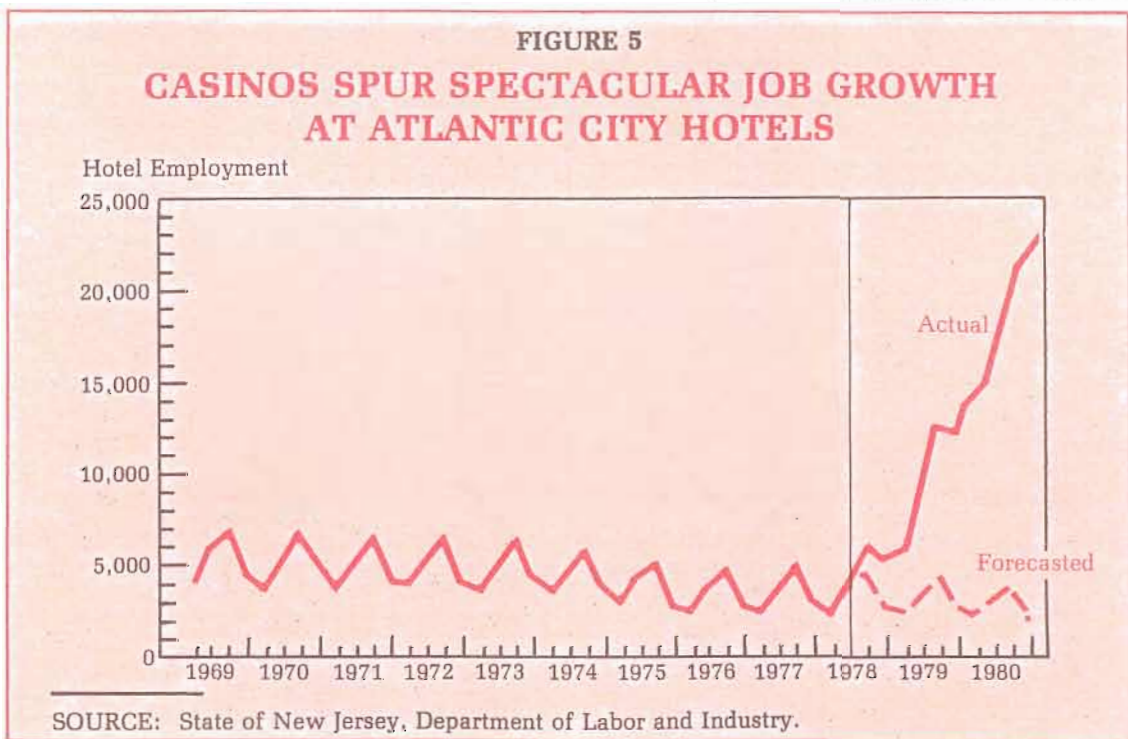
nondurables manufacturing, transportation, trade, and other services, especially toward the end of the casino-building period. And the largest losses in durables manufacturing and the government sector coincided with the peak levels of construction employment.

Adding up the pluses and minuses, the change in the monthly average of total employment has grown by leaps and bounds.⁴ For the last quarter of the comparison period average casino employment was about 21,000

⁴In the second quarter of 1978, the employment differences in the five expanding industries of nondurables manufacturing, construction, transportation and public utilities, trade, and other services far outran declines. Durables manufacturing, finance, insurance, and real estate, and government had maximum negative differences of 1,889 when construction peaked in the fourth quarter of 1979, but the five gainers were up by 6,574. By the first quarter of 1981, the five gainers were up by 9,264 while the other three had negative differences of 1,026.

above would-have-been levels (Figure 5), and the difference in all the other sectors was about 8,000. Thus the casinos have been responsible for bringing in over 29,000 new jobs.

What sort of net effect has this hiring had on unemployment? The State of New Jersey reported that 6,134 residents of Atlantic County made unemployment insurance claims in the first quarter of 1978. By the first quarter of 1981 claims had fallen to 5,240. This may not look like much of a drop, and some observers have used these numbers as proof that legalized gambling has not done enough to help the area. What the model shows, however, is that casinos kept unemployment insurance claims from rising to over 8,500 by the first quarter of 1981 from the continued effects of stagnation and recession. Thus despite increases in the labor force, the original residents of Atlantic



County had at least 3,300 fewer claims than they would have had without casinos in the first quarter of 1981. This adds up to a significant benefit for the original residents. Moreover, if some of the claims were made by new residents, as seems likely, then the original residents must have benefited even more than the numbers might suggest on first reading.

Further, while the argument for casino gambling focused first on the welfare of Atlantic City itself and then on other places in New Jersey, it would be reasonable to expect some reverberations on the economy of Southeastern Pennsylvania. As time goes

on, economic linkages could become increasingly important for employment and unemployment in both Atlantic City and Philadelphia (see SPINOFF EFFECTS ON PHILADELPHIA).

Seasonality. How about changes from season to season? Employment in Atlantic County has generally peaked in the third quarter and fallen to a low in the first quarter. Seasonal fluctuations in total employment remain in the range of 80 percent to 86 percent: in the off season, one or two of every ten employees will be out of work. Thus the percentage swings in employment overall don't appear to have been modified

SPINOFF EFFECTS ON PHILADELPHIA

Philadelphia is about 60 miles from Atlantic City; it is the closest major metropolitan area. Has Atlantic City's resurgence had any effect on Philadelphia's economy?

While the available information is somewhat sketchy, it doesn't appear that Philadelphia is providing a large part of the demand for either labor or supplies. One of the arguments for casino legislation in New Jersey was that the casino owners would employ local people and make purchases locally whenever they could—in Atlantic City if possible, otherwise elsewhere in New Jersey. Thus construction workers were first hired and trained in Atlantic County. To fill expanding needs, many unemployed union craftsmen, carpenters for example, transferred from other areas of the state, including the Camden area. But few transferred from Pennsylvania.

New Jersey is given preference also for procurement of hotel materials, furnishings, food, and beverages. Construction materials and furnishings tend to be one-time purchases from manufacturers having locations across the country. The continuing purchases of food and beverages often are made outside Atlantic County for want of wholesale grocers there. Legal requirements dictate in-state liquor purchases, but casino purchasing agents may buy food in the Philadelphia area as well as in northern New Jersey. A rough estimate, however, is that only 5 percent to 10 percent of these continuing food purchases come from Pennsylvania.

The demand for bus transportation has skyrocketed as the casinos have striven to bring day-trippers to Atlantic City. Subsidies paid to bus companies by casinos insure high traffic from nearby metropolitan areas. Given that many of the bus companies and support services are in the Philadelphia area and elsewhere in Eastern Pennsylvania, the heightened traffic is beneficial. But in arranging this temporary exodus to the gambling parlors, Atlantic City is competing with Philadelphia restaurants, night clubs, and theaters for the entertainment dollar.

The proximity of casinos may attract more meetings and conventions to Philadelphia, since Philadelphia visitors will find it convenient to mix casino play with business. Yet with thousands of new hotel rooms, a refurbished convention center, and improved air and rail transportation, Atlantic City could successfully compete with Philadelphia. Conventions and business meetings might come to Atlantic City leaving Philadelphia with the consolation role of a transportation center.

While these linkages to the Philadelphia area economy can be identified, they are not easy to measure in the short run. It remains to be seen whether Philadelphia will gain more than it loses from having the casinos so close by. Packaging Philadelphia and Atlantic City together for tourism—a cooperative enterprise—could tilt the balance in favor of an economic benefit for both.

by the advent of legalized gambling.

In the lodging industry the severity of seasonal fluctuations increased steadily from 1968 to 1977, so that by the end of the period almost one-half of lodging employees were out of work in the off season. It would be nice to be able to say that this seasonality in the lodging industry has been reduced by the advent of casinos. But no such reduction can be discerned.

Finally, seasonal swings in unemployment insurance claims have become slightly less severe. Claims in the winter (first quarter) averaged about two and one-half times as many as in the summer (third quarter) before casinos. Now about twice as many claims are made in the off season. Thus there seems to have been some improvement, but the strong seasonality of UI claims hasn't gone away.

Seasonality of both employment and unemployment has been made harder to measure by the schedule of casino openings. If casinos opened on a regular basis, say a new casino every fourth month, the pattern of seasonality might show through more clearly. Because openings have not been spaced evenly, the effect on seasonality is obscure. But fine measurements aside, seasonality certainly remains endemic to Atlantic City's economy.

IMPLICATIONS FOR POLICY

Compared to what would have been, then, legalized gambling has created a boom in Atlantic County. Employment has grown vigorously instead of stagnating, and unemployment insurance claims have remained stable rather than rising. These benefits are

reflected in a recent release of the U.S. Department of Commerce which shows that, in 1979, Atlantic County had a larger personal income growth rate than any other SMSA in the country.

Casino employees could be hurt, though, by the seashore's old nemesis—the employment seasonality that goes with seasonality in climate. The casinos have to find a way to beat the weather.

In Nevada, the Reno and Lake Tahoe areas have severe winters like those in Atlantic City. These two mature gambling areas also have very severe seasonal fluctuations—unlike Las Vegas which, with a milder climate, has a more nearly constant level of operation. If the Atlantic City casinos remain exclusively summertime entertainment, then the economic fix they brought will mean higher employment but also high seasonal volatility and therefore many layoffs.

To compensate for the bad winters, the casinos must draw on the millions of potential customers within a few hundred miles. Already hordes of private buses are running day and night to bring in day-trippers, but these buses may not be enough. Government action may be needed to encourage improvement of rail and air access to Atlantic City if the full benefits of higher employment are to be realized.

In short, while much may remain to be done in or for the economy of Atlantic County, the casinos have lived up to their advance billing—so far. Employment is up, unemployment restrained. That may not be everything promised and hoped for, but it's far from inconsiderable.

Technical Appendix

The econometric model is designed for a small region like Atlantic County and has ten structural equations and one identity. Nine of the equations relate quarterly nonfarm wage and salary employment in establishments in each of nine industries to the quarterly seasonally adjusted level of real gross national product (GNP) and to time. The theory is that the level of national economic activity is pervasive in its effect. That is, it affects the level of employment in the usual export industries, such as manufacturing, and several others in the county involved in the tourist business, such as hotels and motels, retail trade, and transportation. Time is used to indicate long-run trends. The identity is simply the adding up of employment in the nine sectors to give total nonagricultural employment. The tenth equation explains the unemployment insurance claims of Atlantic County residents with three variables: total nonfarm employment, the first difference of total nonfarm employment, and time.

The model is estimated with seasonally adjusted quarterly data from the first quarter of 1968 to the first quarter of 1978. Forecasts are then produced for the following twelve quarters. The forecasted values are translated to seasonally unadjusted values for comparison with the historical values.*

Serial correlation of errors was a significant problem, and therefore a Cochrane-Orcutt type procedure in the SAS programming package was used.

The estimated equations are:

$$\begin{array}{l} \text{Quarterly employment} \\ \text{in durable goods} \\ \text{manufacturing} \end{array} = 15,033.55 + 9.09 \text{ GNP L3} - 310.30 \text{ Time} \\ \begin{array}{lll} (t = 9.94) & (t = 8.38) & (t = -8.46) \end{array}$$

$$\begin{array}{l} \text{Autocorrelation: Rho (1 period lag)} \\ \text{ } \end{array} = -.33 \\ (t = -2.19)$$

$$38 \text{ obs.} \quad R^2 = .67 \quad F = 36.27$$

$$\begin{array}{l} \text{Quarterly employment} \\ \text{in nondurable goods} \\ \text{manufacturing} \end{array} = 38,760.34 + 9.13 \text{ GNP L1} - 587.99 \text{ Time} \\ \begin{array}{lll} (t = 10.92) & (t = 4.16) & (t = -7.34) \end{array}$$

$$\begin{array}{l} \text{Autocorrelation: Rho (1 period lag)} \\ \text{ } \end{array} = -.66 \\ (t = -5.43)$$

$$38 \text{ obs.} \quad R^2 = .75 \quad F = 53.86$$

$$\begin{array}{l} \text{Quarterly employment in} \\ \text{lodging places} \end{array} = 29,936.49 + 4.22 \text{ GNP L3} - 418.20 \text{ Time} \\ \begin{array}{lll} (t = 8.73) & (t = 1.70) & (t = -4.99) \end{array}$$

$$\begin{array}{l} \text{Autocorrelation: Rho (1 period lag)} \\ \text{ } \end{array} = -.23 \\ (t = -1.46)$$

$$38 \text{ obs.} \quad R^2 = .80 \quad F = 69.99$$

*The results of this modeling effort have been tested by Nicholas Carlozzi of the Philadelphia Fed using seasonally unadjusted data and an alternative model structure. The conclusions reached in the paper are generally robust to these changes in data and model structure.

Quarterly employment in contract construction = 14,075.47 + 4.63 GNP L1 - 222.41 Time
 (t = 4.65) (t = 2.39) (t = -3.19)

Autocorrelation: Rho (1 period lag) = -.59
 (t = -4.50)

38 obs. $R^2 = .28$ F = 6.73

Quarterly employment in transportation and public utilities = 8,172.71 + 2.58 GNP L1 - 106.80 Time
 (t = 5.56) (t = 2.70) (t = -3.12)

Autocorrelations: Rho (1 period lag) = -.64
 (t = -4.07)

Rho (2 period lag) = -.21
 (t = -1.14)

Rho (3 period lag) = .25
 (t = 1.59)

38 obs. $R^2 = .23$ F = 5.18

Quarterly employment in wholesale and retail trade = 10,690.96 + 5.68 GNP L1
 (t = 10.30) (t = 6.61)

Autocorrelation: Rho (1 period lag) = -.47
 (t = -3.25)

38 obs. $R^2 = .55$ F = 43.66

Quarterly employment in finance, insurance, and real estate = -11,586.07 + 207.12 Time
 (t = -10.27) (t = 13.48)

Autocorrelation: Rho (1 period lag) = -.70
 (t = -5.97)

38 obs. $R^2 = .83$ F = 181.80

Quarterly employment in services (includes mining, excludes lodging places) = -14,387.53 + 345.30 Time
 (t = -4.45) (t = 7.84)

Autocorrelation: Rho (1 period lag) = -.46
 (t = -3.16)

38 obs. $R^2 = .63$ F = 61.49

Quarterly employment in government = -24,035.41 + 492.72 Time
(t = -9.84) (t = 14.81)

Autocorrelation: Rho (1 period lag) = -.63
(t = -5.00)

38 obs. $R^2 = .86$ $F = 219.35$

Quarterly unemployment insurance claims = -12,013.69 + 464.27 Time - 0.28 TOTL1
(t = -2.67) (t = 5.71) (t = -2.618)
-0.17 DTOT
(t = -1.88)

Autocorrelation: Rho (1 period lag) = -.50
(t = -3.54)

37 obs. $R^2 = .55$ $F = 13.55$

In these equations:

'Quarterly' refers to the average of figures for three consecutive months.

GNP L1 = quarterly real GNP lagged one quarter,

GNP L3 = quarterly real GNP lagged three quarters,

Time = a trend variable having a value of 68.00 for the first quarter of 1968 and incremented by .25 for each successive quarter,

TOT L1 = total employment lagged one quarter, and

DTOT = total employment in the current quarter less total employment lagged one quarter.

The model results show that employment in some industries was higher with casinos than it would have been without them (see POSITIVE DIFFERENCES overleaf), while in other industries employment was lower (see NEGATIVE DIFFERENCES overleaf). As noted in the text, not all the differences were statistically significant.

The number of unemployment insurance claims also showed negative differences, which were significant. UI claim numbers in this study have been adjusted to take into account procedural changes made by the State of New Jersey.

Beginning in January, 1978, the State of New Jersey modified its determination of the number of UI claimants that are residents of Atlantic County. An improved survey of actual claims led to increased numbers of claims. Dual procedures were used in 1978, and the difference was an increase of 144 claims in the quarterly average. The results in this study in terms of UI claims are made with adjustments for this change. The same difference pattern for 1978 was used for 1979, 1980, and 1981, since the UI claims were stable during this time.

**POSITIVE DIFFERENCES:
HISTORICAL GREATER THAN FORECASTED**

		Hotel & Motel	Non-durable Manufacturing	Construction	Transportation & Public Utilities	Trade	Services Except Hotel & Motel	Total
1978	II	929	145	432	-32	242	63	1,774
	III	1,812	28	399	-130	602	-216	2,069
	IV	2,573	144	1,299	-35	690	832	5,324
1979	I	3,454	269	2,117	102	361	1,776	7,183
	II	6,083	171	3,380	195	-516	846	9,250
	III	8,098	312	4,498	202	-967	97	10,767
	IV	9,467	-33	4,959	376	325	947	14,152
1980	I	11,892	172	2,342	471	983	2,336	17,009
	II	12,122	185	2,440	459	163	425	15,248
	III	14,431	423	2,758	508	403	-596	17,120
	IV	19,290	378	2,652	519	2,014	477	23,888
1981	I	21,247	551	2,122	549	1,341	4,701	29,486

**NEGATIVE DIFFERENCES:
HISTORICAL LESS THAN FORECASTED**

		Durables Manufacturing	Finance, Insurance & Real Estate	Government	Unemployment Insurance Claims
1978	II	-73	-86	154	-511
	III	-67	-163	2	-402
	IV	-51	-53	-76	-809
1979	I	-118	-206	-573	-1,373
	II	-200	111	-820	-237
	III	-339	-110	-1,025	261
	IV	-465	-273	-1,151	-716
1980	I	-246	-174	-768	-1,009
	II	-302	-252	9	-449
	III	-354	-372	-81	-307
	IV	-520	-357	-565	-2,188
1981	I	79	-484	-621	-3,332