The Economic Impacts of LULUs

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ABSTRACT: This paper examines some of the issues and controversies that arise when facilities with perceived noxious environmental, social, and economic effects (LULUs) locate in communities. It develops a taxonomy of LULU types and describes some potential economic and social effects of five specific kinds of LULUs, including: (1) interstate highways, (2) large dams, (3) medium and maximum security prisons, (4) commercial nuclear power plants, and (5) gambling casinos. The paper uses quasi-experimental control group methods to assess the economic impacts of these facilities on U.S. counties during the period 1972-94. The paper shows that few actual negative effects can be attributed to LULUs. However, only interstate highways measurably stimulate aggregate employment.

KEYWORDS: NIMBY, LULU, economic development, control groups

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1.0 Introduction

One of the biggest quandaries in community economic development occurs when economic facilities with "undesirable" features seek to locate in a region. Planners recognized this problem decades ago, but only relatively recently identified these objects of controversy by name, sometimes calling them NIMBYs ("Not in my backyard") or LULUs ("Locally unwanted land use") (Popper 1985). Unfortunately, any attempt to identify what constitutes a LULU or NIMBY is wrought with difficulties because they can be so varied in practice. For most prospective host communities, toxic waste dumps are greeted as LULUs. So are nuclear power plants and prisons. Transportation facilities such as airports, highways, and rail lines are often regarded as LULUs. Moreover, popular venues like shopping plazas, Wal-Marts, Disney theme parks, and sports stadiums are sometimes considered undesirable. Even such seemingly innocuous facilities as churches may be regarded as LULUs when they intrude on residential areas (Do, et al. 1994).

The NIMBY phenomenon is alive and well in rural America. However, because many rural areas continue to lag economically behind the rest of the nation, the opposition there has been somewhat muted. Few economic development strategies have seemed to work in many rural regions or the strategies are perceived to take too much time. Therefore, impatient rural communities have sought to improve their fortunes by recruiting enterprises that have been resisted ferociously elsewhere. In many instances, the facilities are large and might be expected to create direct employment through new hires and indirect employment through regional multiplier effects. It would seem to be an open and shut case that such facilities are an asset to their depressed host communities. However, doubts persist about them and the magnitude of their tangible benefits. Moreover, some contend that they create unacceptable environmental or social externalities that must eventually outweigh the benefits.

Generalizations are difficult. Of course, economic multipliers differ predictably from one locale to another depending on characteristics of the region, including the nature of existing interindustry and interregional linkages. The actual impacts of any given enterprise will also differ
based on characteristics of the facility, including the composition of its expenditures. Therefore, the actual regional effects must be evaluated on a case-by-case basis. Will the expenditures to operate the facility be made locally? Are the intermediate linkages within the region strong enough to create substantial multiplier effects? Although few NIMBYs are derailed on the basis of this or that calculated multiplier, they are important considerations.

Often, however, the results of economic-base and input-output models seems to be superfluous. Opponents are willing to concede that the project in question will produce jobs in the short-run. Their objections are more likely to center on other matters such as the environmental, social, and distributive effects of the enterprise. These effects are thought to be so detrimental that they might even undo any initial positive effects in the long run. Opponents often ask hard questions that planners are unable to answer. Who will be the beneficiaries and the losers? Will any new jobs be filled by local residents? Will residents such as retirees and tourists become disaffected and leave the area because their once placid communities have been disturbed? And, are the negative qualities of NIMBYs enough to repel other enterprises from possibly building or expanding in the region? With increasing attention being paid to the role of image and amenities in attracting and retaining a skilled labor-force and higher value added businesses, this latter concern has become more important. Communities may sometimes be reluctant to consider NIMBYs, not only because they create additional social, safety, or environmental risks, but because they may ultimately make the region less attractive to others.

The purpose of this paper is to begin to sort out some of the reasons that LULUs are often not appreciated and to gauge some limited economic and social effects of representative types of LULUs. Five common LULUs are examined: dams, interstate highways, commercial nuclear power plants, prisons, and gambling casinos. These LULUs are singled out because of the continuing controversy surrounding their siting and the slightly different nature of each facility. In a sense, each represents a different era in the debate over LULUs. The hey-day for large dam construction was the 50s and early 60s (see figure 1.1). The bulk of interstate highway
construction (figure 1.2) occurred during the mid-60s and early 70s. Nuclear power plant controversies came to a head during the 70s and early 80s when most of them were built (figure 1.3). Maximum and medium security prison construction was most prolific during the 80s and early 90s (figure 1.4). Finally, casino gambling became a hotly contested issue during the early 1990s when a number of states moved to dismantle prohibitions.

The remainder of this paper is divided into four sections. The next section describes a basic taxonomy of LULUs, and reviews the literature concerned with the economic effects of the LULU case studies: dams, highways, nuclear power plants, prisons, and casinos. The following section describes the quasi-experimental control group research design used to gauge the effects of these facilities on county growth and development during the period 1972-94. The third section describes the sources and characteristics of important data inputs. The fourth section describes the results of the empirical analysis. The final section provides a summary and conclusion.

2.0 Literature Review

LULUs are unpopular for a variety of reasons. Indeed, NIMBY movements often attract disparate elements that could never get along in another setting or cooperate on another issue. For instance, gambling casinos are often attacked by the political right for their potential corrupting effect on public morals while they are resisted on the political left for their potential for aggravating poverty and widening income disparities (Goodman 1994). In order to adequately assess the impacts of LULUs, it might be useful first to identify potential friction points. The taxonomy of LULUs described below and summarized in table 2.1 is an attempt to encapsulate basic sentiments sometimes expressed by LULU opponents. The taxonomy is crude. It is not meant to be exhaustive but rather to illustrate some basic ways that LULUs are often characterized.
The fizzlers. Fizzlers are enterprises that create few or no post-construction direct effects. In the case of public projects, market forces never materialize that turn the investments into regional economic growth.

The islands. Islands are economically isolated from their host regions. They may employ and buy primarily from outside the region, thereby denying local residents many of the benefits of their physical presence.

The befoulers. These enterprises are harmful to the local physical environment of a region. They may be harmful because they emit pollutants into the air and water or dispose of solid waste in the area. They might also indirectly befoul the environment by facilitating certain types of growth (e.g., tourism development) which in turn creates environmental spoilage.

The defilers. These facilities may have harmful social effects. For instance, they may contribute to decreased family or community cohesion, increased delinquency and crime, alcohol and drug abuse, or other bad habits.

The deniers. These enterprises may negatively impact those who are less fortunate. They may displace low-income or elderly residents from their homes or employment. They also may have disproportionate effects on minority groups and women.

The competers. These enterprises may affect the livelihoods of those in the community who are generally better off. For instance, established local proprietors may find themselves unable to compete with more efficient LULUs who choose to locate in the region.
The deadbeats. Deadbeats don't pay the full cost of their infrastructure and public service needs. They leave others in the area footing part of the bill. This situation may arise when LULUs receive substantial relocation subsidies or do not compensate the community for facility externalities that increase public service expenditures.

The repellers. These NIMBY enterprises make it tougher for existing or prospective enterprises to operate in the same region, often because of the negative externalities described above.

The deserters. Footloose firms that are not committed to a long-term community relationship are potential deserters. Perhaps, because of the vagaries of the market in which they operate and relatively low fixed overhead, they respond rapidly to spatial differences in factor costs. They represent a risk to the community in which they operate because of the costs of picking up the pieces.

The disturbers. These enterprises can destroy a peaceful and quiet ambience by their very presence. Opponents may prefer no new enterprises at all, even if they do ameliorate economic conditions and generate few visible negative effects.

The unknowns. Unknowns may not have any immediate negative environmental or social effects, but too little is known about their long-term effects. They introduce an element of risk into the development equation that makes many residents and enterprises uncomfortable.

Each LULU examined here has been alleged to have one or more of the attributes described above. Since each facility is large, huge construction costs are involved at the initial stage. The construction stimulus is temporary and rarely serves as the chief selling point for a LULU project. The primary debates concern the post-construction and, indeed, long-term post-
construction effects of the project. Regarding these effects, there are varying degrees of uncertainty. Three of the five are direct employers and, therefore, might be expected to have expansionary effects. Two of the LULUs are public infrastructure which create little or no direct employment but may be influential in directing private investment and employment.

Dams are often characterized as befoulers, deniers, and fizzlers. They can be environmentally harmful while generating few tangible economic benefits for local residents. They submerge large areas of dry land and sometimes alter the ecosystem (though they might help to ameliorate some man-made environmental problems such as erosion), and displace people in the process. They are often built to serve national interests and therefore benefits may be very diffuse. Regional effects are rarely important motivating considerations. Indeed, research on the subject of economic effects sends a fairly consistent message that "water resource developments are likely to be poor tools for accelerating [regional] economic growth . . . " (Cox et al. 1971, 37). When dams do create employment, the effect is more likely to be connected with recreational uses of the resultant reservoir rather than effects on transportation or water factor costs that might potentially lure water using industries to the region (Gjesdahl and Drake 1979). Even if recreation is stimulated, it may not serve as the catalyst for regional growth and development (Gjesdahl and Drake 1979).

Highways are often regarded by their opponents as befoulers, deniers, competors, fizzlers, and defilers. Although almost all interstate highways are constructed along existing traffic corridors, they sometimes infringe on areas of environmental, historical, or sentimental value. They may not directly create social problems but can serve as a conduit for people who bring social problems (such as crime) to new areas (Rephann 1997). They change access and transportation costs that may create local competitive advantages as well as disadvantages to a previously isolated community. Whether or not a highway has a stimulative effect on a region is influenced by a variety of factors, including urbanization and prior industrial mix. Previously more urbanized and centrally located areas are more likely to experience growth than less urbanized areas, and sectors
such as retail trade and services are more responsive than other sectors (Rephann and Isserman 1994; Briggs 1980; Humphrey and Sell 1975; Lichter and Fuiguitt 1980). Even in those communities that grow, however, there may be distributive effects: (1) from lesser urbanized communities along the route and communities by-passed by the route to those in more urbanized communities and along the route (Rephann and Isserman 1994) and (2) from local ownership to outside ownership. The latter could result if, for example, large corporations are quicker to perceive and respond to the locational advantages created by changes in the transportation system.

Nuclear power plants are sometimes said to be islands, repellers, and unknowns. That is to say, they usually employ few local residents (Bjornstad and Vogt 1984; Lewis 1986), instead requiring trained specialists likely to be selected from national employment searches. They represent a small risk because of the known hazards associated with fission reactors. Because of their potential dangers, it is conceivable that they may deter residents and firms from locating in the area. However, such an assessment would not be supported by hedonic price studies that show nuclear power plants having no negative impact on local property values (Nelson 1991; Gamble and Downing 1982). One explanation for these findings is that the negative effects of nuclear power plants are offset by the often huge surplus tax revenues that result from taxing the commercial facilities (Bjornstad and Vogt 1984; Greenberg et al. 1986). In effect, the enterprise subsidizes residents and firms, making the communities more attractive candidates for additional private investment than they would be otherwise.

Prisons are generally recognized to be a “clean industry.” That is to say, they are not befoulers. However, many LULU opponents argue that they are islands, flagrant defilers, and, to some degree, repellers (Fitchen 1991; Shichor 1992). Prisons are owned and operated by state and federal governments. Consequently, labor is often drawn from state and national searches instead of local searches. During the startup phase, much of the management and labor may be drawn from non-local state and federal facilities (Fitchen 1991; Carlson 1992; Beale 1993).
Because prisons siting is dominated by political considerations, the eventual sites are unlikely to be low cost producers of many prison inputs (Sechrest 1992). Therefore, supply and purchasing channels may be national as well. The positive effects of prisons are, therefore, likely to result from the household purchases of the relocated workers rather than direct spinoffs. Prisons have the potential to create social problems because they house residents likely to commit offenses against one another. Although this may be isolated from the community at large, imprisoned spouses may serve as a magnet for families who are more likely to commit crimes than the native population. It is sometimes argued that prisons may alter the safety and prestige of a community, and thereby serve as a deterrent to firm location and expansion.

Casinos are sometimes characterized as defilers, islands, deniers, competers, and deadbeats (Goodman 1994). They have been called islands because of a tendency to draw workers from outside the immediate community (Rephann et al. 1997). In a young and competitive industry, they can also vanish practically overnight, prompting some opponents to call them deserters. As with any young enterprise, the success of a casino depends on a variety of locational factors, including proximity to urban markets, infrastructure, and availability of other tourist attractions (Eadington 1995). Casino gambling is held to attract all kind of malicious and perfidious activity (Friedman, Hakim and Weinblatt 1989; Goodman 1994; Kindt 1994). It may also tempt residents to gamble excessively or even compulsively. If the persistent gamblers are disproportionately financially insecure then casino gambling may aggravate poverty, family dissolution, crime, and other social vices. New casinos are often opposed by local merchants because of their potentially deleterious effects ("cannibalization") on native restaurant and entertainment businesses which may not be able to compete with the lower prices and quality of services offered by casinos. If these effects are evident, a casino can become a burden on communities because of the additional social service needs of the newly unemployed and newly addicted (Kindt 1994).
3.0 Methodology

The quasi-experimental control group method used here is documented carefully in several published studies, including Isserman and Merrifield (1987), Isserman and Beaumont (1989), and Rephann and Isserman (1994). The method chooses a control group of counties similar in economic makeup to counties that have received a particular policy treatment. In the case of LULUs, the treatment would consist of the construction or opening of a LULU facility. The control group of untreated counties (or counties without such a facility) serve as a benchmark against which to measure the effect of the treatment.

Since the ultimate goal is to compare the growth rates of LULU and non-LULU counties, every effort should be made to control for all other plausible causes of economic growth. For this study, the determinant variables were drawn from mainstream theories of regional economic growth, including reduced form equations of regional economic growth described in Richardson (1973) and von Böventer (1975). These theories emphasize the role of spatial context, economic dynamism, the cost of labor and capital, and industrial structure in regional economic growth. Variables that attempt to measure some of these concepts are listed in table 3.1. They are used as selection variables in choosing non-LULU county control groups.

Control counties meet four conditions. First, they have no corresponding LULU facility (e.g., the control group for dams must not have counties that have a large dam). Second, they are sixty miles distant from a county with such a facility in order to protect against spatial interdependencies. Third, they do not have an inordinate amount of data gaps caused by data disclosure restrictions. Fourth, they are approximately similar to LULU counties in industrial structure, spatial position, and demographics in a period before the facility opened in the study counties. A similarity index is computed for each potential treatment control match using the Mahalanobis metric. This metric combines numerous variables in a way to produce a single
number that may be used objectively for comparison purposes and has certain desirable statistical properties.¹

When a control group has been selected, it should be evaluated further by performing a statistical pre-test. The pre-test compares the growth of the LUL counties as a group to the control group during a period before LULUs were constructed. If the control group follows a similar growth path to the LULU counties prior to opening, the control group can be used as a benchmark for assessing the treatment effects. For each of the LULU groups used in this study, a statistical pre-test is conducted by choosing a base year in advance of the expected impact years which occur after 1971. For the categories described here, the years 1970 and 1971 serve as a pre-testing period. As things turn out, there are few statistically significant discrepancies between the treatment groups and control groups during this period; therefore, in most instances subsequent growth rate differentials may be reasonably attributed to the LULUs themselves.

Economic impacts were measured using data from the Regional Economic Information System (REIS) (US Dept. Of Commerce, 1996). The System contains both personal income and employment data. The data used here is measured at the sectoral level for both earnings and employment. These include sectors such as services, retail trade, and state and local government. In addition, the REIS contains information concerning population, per capita income, residential adjustment (a measure of net earnings leakages paid to non-residents), transfer payments (a category consisting largely of social security and government retiree payments as well as assistance to low income residents), and dividends, interest, and rent. The sectoral abbreviations used in illustrations here are as follows: total employment (EMP), population (POP), per capita personal income (PCI), transfer payments income (TRF), residential adjustment income (RES), construction earnings (CON), transportation, communication, and public utility earnings (TPU), wholesale trade earnings (WHL), finance, insurance, and real estate earnings (FIR), services earnings (SVC), federal, civilian government earnings (FED), and state and local government earnings (STL).
The basis for impact measurement and tests of statistically significant effects are cumulative growth rates differentials by sector. Growth rates are measured against a selected base year. Counties are selected in 1969 (the first year in which REIS data is available for this series) and 1969 serves as the base year for all subsequent growth rate calculations, 1970-94. The period 1970-94 is broken into two distinct periods for analysis. As mentioned earlier, the years 1970-71 serve as a pre-test period, during which we can verify that counties followed similar economic trajectories before a LULU was introduced into a county. The years 1972-1994 deserve attention as the years that LULUs were functional and should be used to assess the LULU impacts.

The results are presented through a series of graphs displaying the differences between LULU county average growth rates and respective control group average growth rates. Sectors and years that are statistically significant at the $a = 10\%$ level are identified in the lower left-hand corner of each graph. The t-test is the underlying statistical test for all grouped comparison tests (see Rephann and Isserman 1994). The significance test results should be used in interpreting the results. For example, in figure 5.1, interstate highway counties experienced a fourteen percentage point increase in employment compared to non-interstate highway counties, while dam counties outgrew non-dam counties by more than thirty percentage points. However, only the former result is statistically significant.

4.0 Data

Information concerning the LULUs selected for this study were derived from the following sources:

Data regarding dams were obtained from the Federal Emergency Management Agency's National Inventory of Dams Data (FEMA 1990). This database contains information about a dam's capacity, primary usage, location, and construction year. An effort was made to select only large
dams (defined by the Geological Survey as having a capacity of more than 50,000 acres-feet) because they engender greater opposition and might be expected to have larger effects. There were 881 large dams out of a total of 68,225 dams in the U.S. Counties containing large dam reservoirs were trimmed further on the basis of reservoir and county characteristics. All study counties had reservoirs constructed during the period 1972 to 1977, had reservoirs located entirely within their boundaries, had only one dam treatment (the study dam) during the study period, and were non-metropolitan. These restrictions narrowed the list to twenty-seven counties.

Highway counties were selected using a file obtained from the Federal Highway Administration called Status of Improvement of the National System of Interstate and Defense Highways File (PR-511) (USDOT 1990). This file contains information on the status of various interstate highway links, including construction dates and opening dates. Interstate highways currently run through more then one in three U.S. counties. Of these approximately 1,360 counties, fifty-eight counties were chosen for study. These counties had interstate highways measuring at least nine miles in length that were opened to traffic during the period 1972-75.

Nuclear power plant counties were selected from a list kept by the Nuclear Regulatory Commission (NRC 1990). The list describes each nuclear reactor and the date that a construction permit was issued and operating license conferred for it. Seventy-five counties contain nuclear power plants. The study group consists of twenty-nine counties where construction permits to build nuclear reactors were issued after 1971. Many of these reactors obtained operating permits during the early and mid 1980s.

A directory published by the American Correctional Association (ACA 1990) was the source of prison information. This publication contains an inventory of the nation's state and federal prisons, including date of opening, number of employees, and number of inmates. Each prison is designated as having a particular security status, with maximum, medium, and minimum security arrangements being the most common. This study examines only large sized (250+ inmates)
maximum and medium security prisons. Two-hundred and ninety-seven counties host such facilities. The thirty-nine selected for study were opened during the period 1972-80.

The data used to select casinos is the least satisfactory of the group. Casino gambling is not a federally regulated industry, and no responsible authority makes an effort to keep track of when a casino is built, how large it is, and other parameters that might be of interest in assessing its economic and social effects. Therefore, this study relies on a publication compiled for travel agencies and casino hobbyists called *Casino Resort and Riverboat Fun Book Guide*, published by Casino Vacations, Inc. The 1994 Guide describes casinos that were open as of 1993. There are several drawbacks to relying on this source, however. The guide makes no claim as to completeness and, in fact, excludes several levels of gaming operations, including bingo and pari-mutuel betting. In addition, the Guide cannot be used to determine the size of each casino. Because many Nevada casinos were in existence before the data series used here began, Nevada casinos were trimmed from the study group. This left sixty-nine casino counties for the study group. Most of these casinos were opened during the late 1980s and early 1990s.

5.0 Empirical Results

Figures 5.1-5.4 provides a comparison of the key economic and demographic effects of the five types of LULUs. Statistically significant results are identified in the legend by years in parentheses. Employment growth rate differences are on balance positive but only highways exhibited a statistically significant positive total employment effect at the end of the period. Counties with nuclear power plants and large dams had statistically significant effects during some intermediate years but they were not sustained. Per-capita personal income serves as a measure of the average resident's economic well-being. Results show that dams and casinos exhibited positive effects at the end of the period, while highways, nuclear power plants, and prisons had negative effects. However, only the casinos result was statistically significant. Four of the LULUs had a positive effect on population. However, only two were statistically significant in 1994 and in
only one of these cases (i.e., prisons) can it be inferred that growth was stimulated. Highways were growing faster than their control counterparts before the highways were constructed (i.e., 1970-71) and, in effect, failed the pre-test. Figure 5.4 shows residential adjustment effects, where a positive growth rate difference can be interpreted to mean that net income inflows occurred and a negative value means net income outflows occurred. One can imagine that the cash inflows and outflows are connected to changes in commuting patterns. If this is correct, then it can be inferred that prisons caused more outcommuting while casinos caused more incommuting. The latter result suggests that the benefit of hosting a casino is to some extent diffused to residents who reside outside of the host county.

Taken as a whole, the picture that emerges is quite mixed and does not indicate that LULUs have either profound detrimental or favorable effects. Thus, neither the woeful predictions of the harshest LULU critics nor the quick-fix rhetoric of proponents are supported by the empirical evidence. Since the results are on a fairly aggregate level, however, they may camouflage disparate effects. For instance, a LULU could have sizeable positive effect on a particular sector but negative effects on others. The net result would be, therefore, undetectable. In order to examine the possibility of such redistributive sectoral effects further, each of the LULUs was examined on a case-by-case basis using industry-level employment and income data. An examination of the employment results revealed few statistically significant results. Therefore, only income differences are reported in the subsequent text. Figures 5.5-5.9 report results for sectors that were statistically significant in either 1993 or 1994 but did not “fail” their corresponding pre-tests for the years 1970-71. That is to say, the figures show only sectoral results where statistically valid inferences about growth or decline can be made.

Recall that the literature suggests that dams have few economic effects on their host communities. The economic benefits are often diffuse and dam reservoirs do not serve as much of an industrial location asset, even in water intensive industries. However, dam reservoirs have been found to sometimes stimulate recreation-related sectors when they can be utilized for recreational
purposes. Nearly every one of the dams included in this study had a recreational use, and thus one might anticipate some additional services and retail trade growth. The results obtained (see figure 5.5) here lend only partial support to this hypothesis. Retail trade (RTL) grew 175% faster (significant at $a = 10\%$) in the dam counties than control group counties. Included in the retail trade sector are eating and drinking places and souvenir vendors. On the other had, services (which includes lodging places and amusement and recreation services) was not affected. Furthermore, wholesale trade (WHL), a sector that would appear to have little connection with the presence of a dam reservoir, grows significantly faster.

Highways are expected primarily to affect primarily tertiary industries. The results illustrated in figure 5.6 partially support this story. Both finance, insurance, and real estate (FIR), and wholesale trade (WHL) exhibit positive effects and services (not pictured) nearly so. Transfer payments (TSF), a very heterogeneous category encompassing retiree payments, medical benefits, and public assistance, are stimulated as well. On further investigation of the transfer payments effect, it was discovered to originate from retirement and medical payments. One possible explanation for this result is that highways stimulate elderly immigration, perhaps because of their more centralized locations and easier access to various public and private services. Unfortunately, it is not possible to infer any stimulative effect of highways on population from the sample because the statistical pre-test indicates that the highway sample was growing faster than its control group both before and after the highways were constructed. Still, in contrast to other LULUs examined here, the effects are substantial enough to stimulate aggregate employment.

The effects of nuclear power plants should be most noticeable in transportation, communication, and public utility earning (TPU) because nuclear power plants are public utilities. In addition, state and local government earnings (STL) should be stimulated if the plant contributes generously to the local property tax base as previous studies seem to indicate. The results illustrated in figure 5.7 bear out these expectations, and also indicate that transfer payments (TSF) are stimulated. It is worth pointing out, however, that there were no corresponding employment
effects in TPU and STL and that secondary multiplier effects in tertiary sectors are absent as well. Therefore, one might infer that the direct employment effects of nuclear power plant are relatively small and thus do not create ripple effects through the local economy.

The government sectors, federal, civilian (FED) and state and local government (STL) are among those stimulated by prisons (see figure 5.8). This is no great surprise since both state and federal correctional facilities are included in the study group. These results likely reflect direct wage disbursements from the government employers. However, there are two additional effects worth noting: transfers (TSF) and construction (CON). The positive effect on transfers might be attributable to expenditures on prison inmates or their families. The bulge in construction may be connected with the population stimulus illustrated in figure 5.3. Both population and construction effects may reflect a boom in housing construction that stems from the influx of new employees, some of whom may be merely transfers from elsewhere in the prison system. The downside of this result is the possibility that few local residents outside the construction sector would benefit from the situation because of the lack of secondary effects in tertiary sectors.

Gambling casinos might be expected to have a positive effect on the service sector in which they operate. However, the possibility that they cannibalize other industries means that one cannot be certain of this effect or that the effects will be positive in other sectors. Figure 5.9 and 5.4 indicate some positive results. Both services and construction are stimulated during the prime casino growth years in the early 1990s, reflecting perhaps both the construction and operation of the casinos. In addition, a negative transfer payments effect, which stems largely from decreased public assistance payouts, provides evidence that some low-income residents may be obtaining employment in the casinos. On the other hand, as figure 5.4 shows, residential adjustment leakages increase, which seems to indicate that residents from outside the host county are obtaining some of the new jobs too. Nor, is there any evidence to suggest that the state and local government sector is stimulated, which would be needed if casino gambling aggravates social problems that require state and local government attention.
Based on these empirical results and using the LULU categories described in section 2, it is possible to speculate about the exact nature of each of the LULUs examined here. First, it is difficult to characterize any of the LULUs as fizzlers because each case study produced at least one statistically significant positive sectoral result. Second, none of the LULUs appears to be a repeller because statistically significant negative sectoral effects were not observed. Third, many of the case studies have characteristics of islands because their effects were often concentrated in one or two sectors which are directly related to the LULU. For casino counties, it is the service sector; for nuclear power plant counties, it is transportation, communication, and public utilities; for prisons, it is federal, civilian, and state and local government. Beyond these few generalizations, the picture is quite varied. For instance, gambling casinos may be deadbeats because there is no evidence here that they reinvigorate state and local government disbursements, though they may increase the need for additional public services. On the other hand, they do not appear to be deniers because public assistance payments decrease rather than increase after casinos are introduced. Nuclear power plants cannot be characterized as deadbeats because they stimulate additional state and local government earnings. Among the remaining LULUS, highways and dams alone act by influencing the locational decisions of firms and residents. But, highways appear to be the more effective of the two strategies, and indeed, it alone of all the LULU case studies has aggregate employment effects.

6.0 Summary and Conclusion

This paper examined some of the issues and concerns that arise when facilities with some potentially harmful qualities locate in a region. Although these facilities often create substantial direct employment, they are resisted for a variety of reasons, including concerns that the facility will be detrimental to other enterprises, certain categories of residents, prospective new employers, or local public finances. There are also concerns that the facilities will be of little benefit to the host region, and instead benefit disproportionately outsiders who may not experience the negative
effects associated with the facilities. Through examining five representative case studies that been resisted by the public during the last four decades (dams, highways, nuclear power plants, and prisons, casinos), this paper is able to establish that, judging on the basis of economic growth and development impacts, LULUs are neither as bad as opponents charge nor as good as some proponents claim. Indeed, every LULU examined had at least some minimal growth effects. However, these effects tended to be concentrated in a handful of sectors, and only in the case of highways was aggregate employment enhanced.

Because this paper relies on primarily economic data, it was not possible to characterize the full social and environmental effects of the LULUs. A more complete impact analysis would examine the effects of LULUs on additional measurable outcomes such as crime, pollution, small business formation and failures, and income inequality. With additional data it would be possible to replicate the research design adopted here and determine which LULUs have features of deniers, competers, defilers, and befoulers as well. With reasonable answers to these questions, it should be possible to reduce the anxiety that exists among both the public and planners concerning the threat posed by those LULUs that are still regarded as “unknowns.”

Endnotes

1 The Mahalanobis distance is represented as $d^2(X_T, X_i) = (X_T - X_i)^T S^{-1} (X_T - X_i)$ where $d^2(X_T, X_i)$ is the distance between the vector of selection variables for the treated county and county $i$ and $S$ is the sample variance-covariance matrix for all of the counties.
References


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<tbody>
<tr>
<td>Fizzlers</td>
<td>No direct or indirect employment effects</td>
</tr>
<tr>
<td>Islands</td>
<td>Few linkages with the local economy</td>
</tr>
<tr>
<td>Befoulers</td>
<td>Harmful effects on the environment</td>
</tr>
<tr>
<td>Defilers</td>
<td>Detrimental social effects</td>
</tr>
<tr>
<td>Deniers</td>
<td>Negative distributive effects</td>
</tr>
<tr>
<td>Competers</td>
<td>Outside ownership displacing local firms</td>
</tr>
<tr>
<td>Deadbeats</td>
<td>Insufficient contributions to tax base</td>
</tr>
<tr>
<td>Repellers</td>
<td>Negative effects on firm formation and relocations</td>
</tr>
<tr>
<td>Deserters</td>
<td>Uncertainty caused by lack of commitment</td>
</tr>
<tr>
<td>Disturbers</td>
<td>Negative ambience effects</td>
</tr>
<tr>
<td>Unknowns</td>
<td>Uncertainty caused by unknown qualities of facility</td>
</tr>
</tbody>
</table>
Table 3.1  Control Group Selection Variables

*Industrial Structure*
- Farm earnings as share of total personal income, 1969
- Manufacturing earnings as share of total personal income, 1969
- Federal government, civilian and military earnings as share of total personal income, 1969

*Population, demand, and spatial aspects*
- Log of population (base ten), 1969
- Logarithm of population potential for counties within 60 miles, 1969
- Logarithm of population potential for counties within 60-500 miles, 1969
- Residential adjustment income as share of total personal income, 1969
- Transfer payments income as share of total person, 1969
- Per capita personal income, 1969
- Distance to city with 25,000 or more residents, 1970
- Distance to city with 100,000 or more residents, 1970

Figure 1.3 Nuclear Reactors
Year of Opening

Figure 1.4 Medium & Maximum Security Prisons
Year of Opening
Figure 5.1 NIMBY Employment Effects

Figure 5.2 NIMBY Per Capita Income Effects
Figure 5.7 Effects of Nuclear Power Plants

Figure 5.8 Effects of Prisons
Figure 5.9 Effects of Casinos