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Can New Orleans Play Its Way Past Katrina? The Role of Professional Sports in the Redevelopment of New Orleans

Victor A. Matheson† and Robert A. Baade††

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Abstract

Hurricane Katrina devastated the city of New Orleans in late August 2005, and debates are now underway across the country concerning strategies for reconstructing the City. Both of New Orleans's professional sports teams, the National Football League Saints and the National Basketball Association Hornets, left the city in the wake of the storm, and the question of what the city should provide in the way of financial accommodation to encourage them to return should be considered in devising a reconstruction plan.

New Orleans has hosted a disproportionate share of mega-sports events in the United States given its size and demographics. An important question concerns whether these events have contributed enough to the New Orleans economy to justify reinvestment in infrastructure to restore New Orleans's place as a leading host of professional sports and mega-events in the United States.

This paper examines the economic impact of professional sports on the New Orleans economy and concludes that the redevelopment efforts of New Orleans are better directed at first providing infrastructure that will encourage the return of its middle class citizenry and the restoration of its culture. Playing host to professional sports and mega-events does have symbolic significance, but it is arguable that the city cannot afford to invite guests until it has the means to accommodate them.

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†Victor A. Matheson, Department of Economics, Box 157A, College of the Holy Cross, Worcester, MA 01610-2395, 508-793-2649 (phone), 508-793-3708 (fax), vmatheso@holycross.edu

††Robert A. Baade, Department of Economics and Business, Lake Forest College, Lake Forest, IL 60045, 847-735-5136 (phone), 847-735-6193 (fax), baade@lfc.edu

I. Introduction

Hurricane Katrina devastated New Orleans physically and economically after making landfall on August 29, 2005. Full recovery, which generally follows natural catastrophes in the United States given the inflow of funds for reconstruction, seems less certain in the Crescent City. Citizens and businesses that abandoned New Orleans have exhibited a reluctance to return. The city's professional sports teams are included among those enterprises that left New Orleans in the wake of Hurricane Katrina. The National Football League (NFL) Saints played home games in three different cities during 2005; the National Basketball Association (NBA) Hornets have taken up residence in Oklahoma City for their 2005-2006 home games; and the Arena Football League's Voodoo have abandoned their entire 2005-2006 schedule.

Saints owner Tom Benson recently announced that the team would return home for the 2006 season, but their future in the city after the 2006 season is unclear (Duncan, 2005). Benson and the city have had a contentious relationship due largely to the fact that the Superdome could not compete with the new generation of NFL stadiums as a revenue producer, prompting Benson to threaten relocation in the absence of a new playing facility. This relationship has soured further as a consequence of the damage Katrina inflicted on the Superdome making the need for a new or renovated stadium even more pronounced. The purpose of this paper is to analyze the extent to which the city of New Orleans should direct its development dollars toward its sports infrastructure. Has New Orleans benefited economically from its role as host to major professional sports teams and a disproportionate number of mega-sports events given its size and demographics?

Do commercial sports enable a rebuilding of New Orleans's storm-ravaged infrastructure or does it force civic trade-offs made even more painful by the storm?

Independent scholarship in general has not supported the thesis that professional sports induce significant increases in economic activity for host cities. New Orleans, however, may be different. The city is smaller and less affluent than other host cities in general, and it may be that the frequency with which large sports events are hosted by New Orleans makes the area an exception to the experience of most cities with regard to sports and economic development. The gravity of the city's economic situation in the wake of Katrina necessitates an individual and more complete appraisal as strategies for economic redevelopment are explored. Answers to the questions raised in this introduction require a review, among other things, of the damage Katrina wrought, the amount of redevelopment money the city must commit, and the evidence with regard to the impact sports has on host city economies.

II. Measuring Katrina's Devastation

Hurricane Katrina, which swept into New Orleans and the Gulf Coast on August 29, 2005, caused far and away the largest damages in real dollar terms of any hurricane in U.S. history, with uninsured losses topping $100 billion (Bloomberg News, 2005) and insured losses estimated at $34.4 billion (Powell, 2005). Its final death toll of over 1,400 also places it among the worst natural disasters ever suffered by the United States. New Orleans was particularly hard hit by the storm, as flood waters remained for weeks after Katrina while levies were repaired, and rebuilding the city is an epic undertaking unmatched in scope and expense in recent U.S. history.

The cost of reconstructing New Orleans itself has been placed at more than $100 billion dollars (Tennessean News Service, 2005). Approximately 80 percent of New Orleans' 188,000 occupied housing units were severely damaged by the storm. Furthermore, more than half of the city's 100,000 owner-occupied homes were built before 1950, and their repair and replacement will require expensive modifications to meet modern building codes designed to prevent future hurricane damage (Tennessean News Service, 2005).

The damage to middle class neighborhoods has substantial implications for the redevelopment effort both as it relates to production and consumption. Without a middle class, New Orleans will not have the workers it needs to run the economy that existed prior to Katrina, and the spending necessary to restore the economy to pre-hurricane levels will be deficient. Katrina devastated the housing stock, schools, and other infrastructure vital to normal life for all socio-economic classes.

The extent of the damage to the social infrastructure must also be carefully assessed since the return of middle class workers and consumers is essential to the revitalization of the New Orleans economy. Even before Katrina, by nearly every measure of economic development, New Orleans lagged behind other large American cities. Labor force participation rates and employment to population ratios in New Orleans averaged 5 to 10 percent below national levels for most demographic groups (Gabe, et al., 2005). Hurricane damaged areas in Louisiana had poverty rates above the national average (21.4% vs. 12.4%), and New Orleans residents were less likely (55% vs. 66%) to live in owner-occupied housing than residents of other large cities (Gabe, et al., 2005). Finally, the educational attainment of younger adults (age 18 to 34) for storm-damaged areas is generally below that for the rest of the nation. For example, 22.9 percent of young adults in hurricane damaged areas had not completed a high school degree compared with 20.6 percent nationwide, while only 22.5 percent had completed a college degree compared with 29.3 percent nationwide (Gabe, et al., 2005).

These figures have several implications for the likelihood that people displaced will return. First, Katrina hit the economically disadvantaged hardest. Statistics indicate that other places in the nation to which they have relocated will improve their opportunities for employment. Second, significant portions of the middle class were displaced in the storm-ravaged area; 47.4 percent of those displaced had education equivalent to some college or above (Gabe, et al., 2005). Third, 45 percent of those displaced did not live in homes that they owned indicating that a significant portion of the people displaced by Hurricane Katrina have weak financial ties to the communities they abandoned. A significant permanent displacement of the population affected by the storm will undermine or may substantially alter the socio-demographic character of neighborhoods mostly adversely affected by the storm. It should also be noted that virtually entire neighborhoods and parishes were wiped out by the storm, and devastation of that magnitude may well negate any pull that community loyalty and ties may exert in bringing people back. It has been estimated, for example, that Orleans Parish and St. Bernard Parish lost 65.9 and 89.8 percent of their populations over the period October 2005 to January 2006 (Greater New Orleans Community Data Center, 2005).

The report of the Bring Back New Orleans Commission recommended that all of New Orleans not necessarily be rebuilt. If that recommendation is followed, the post-Katrina New Orleans will be smaller than the it was before the storm, and that has implications for the ability (or willingness) of sports to serve as a catalyst for economic redevelopment. Prior to considering what sport potentially can contribute to the redevelopment effort, it is logical to identify a blueprint for redevelopment. That topic will be discussed in the next section of the paper.

III. A Blueprint for the Redevelopment of New Orleans and the Role of the Leisure Industry

The New Orleans economy serves the nation as a tourist center and transportation hub for water transport in particular, and therefore, any economic redevelopment effort should focus on those traditional industries, an opinion endorsed by members of an *ad hoc* committee of urban experts assembled under the auspices of the Urban Land Institute. Of course, commercial sport is one important aspect of the tourist/leisure industry, and it could play a role in the economic revitalization of New Orleans.

Much of the tourism industry in New Orleans is "high-ground" based in the French Quarter, the Central Business District (CBD), and the Garden District. The Urban Land Institute committee, which met on November 18, 2005 opined:

> New Orleans should concentrate its rebuilding efforts on the sections of the city that occupy the high ground, while securing lower-lying areas for potential long-term rebirth…it's not practical to redevelop every acre of New Orleans in the short term, considering that 300,000 residents and 160,000 jobs have been lost. It's also not socially equitable to allow residents back into neighborhoods that do not have adequate levee protection and may be toxic… (Carr, 2005).

Prior to the storm New Orleans annually attracted more than 10 million visitors who spent in excess of $5 billion per year according to the New Orleans Metropolitan and Tourism Bureau. Even though New Orleans is a relatively small city, it ranked fifth in the United States in the number of conventions hosted (Tennessean News Services, 2005). Tourists will not likely return to a city that cannot provide essential services, and in the absence of tourists, the New Orleans economy will flounder. One part of the blueprint for restoration of the New Orleans economy will require restoration of housing and essential services for its middle class who provide the labor and entrepreneurial talent for the tourism industry, followed by a revitalization of those businesses that cater to tourists.

The extent to which professional sports and mega-events contribute to the tourist trade must be assessed in determining the fraction of scarce capital resources that should be devoted to the restoration of the infrastructure necessary to accommodate professional and mega-sports events. The last few years before Hurricane Katrina struck, the city of New Orleans hosted two major league professional sports teams, several minor league teams, and a division one collegiate athletic program at Tulane University. In addition, since opening in 1975, the Superdome has hosted numerous sporting events of national significance including the NFL's Super Bowl in 1978, 1981, 1986, 1990, 1997, and 2002, the National Intercollegiate Athletic Association Men's Basketball Final Four in 1982, 1987, 1993, and 2003. In addition, the Superdome annually hosts the Sugar Bowl, one of college football's top post-season matches and a game which has determined college football's national champion nine times since 1975.

Replacing the infrastructure for professional sports and mega-sports events can be justified if the benefits provided by the facilities exceed the costs incurred in the reconstruction. Both costs and benefits have to be measured over time since the facilities provided a stream of benefits as well as generating costs associated with operations and maintenance (O&M). Comprehensive economic analysis would include not only the explicit benefits but also the implicit benefits and costs, which are difficult not only to measure but in many cases to identify.

Data do exist for New Orleans for the number of establishments, annual payroll, and number of employees for a variety of entertainment related industries defined according to the North American Industrial Classification System (NAICS). In Table 1, information is recorded on professional sports' fraction of the three measures of economic activity previously identified.

Table 1: Aggregate Measures of the Fraction of New Orleans Economic Activity in Total Represented by Spectator Sports for 2003

Ratio/NAICS Number	NAICS 71: Arts, Entertainment, and Recreation	NAICS 711: Performing Arts, Spectator Sports, and Related Industries	NAICS 7112: Spectator Sports
Industry Employees/New Orleans Total	4.07%	1.16%	0.62%
Annual Industry Payroll/New Orleans Total	3.48%	1.39%	0.34%
Industry Establishments/New Orleans Total	1.74%	0.94%	0.20%

Source: *County Business Patterns, (*2003).

All data point to the fact that the economic activity accounted for through the "Arts, Entertainment, and Recreation" industry for New Orleans is small. The contribution of "Spectator Sports" is less than 1 percent by any of the measures identified in Table 2. Despite the hefty salaries paid professional athletes, the spectator sports industry typically accounts for less than 1 percent of a city's payroll, and, by that measure, the industry is not economically vital to cities in the United States, including New Orleans.

IV. The Cost of Sports Infrastructure and Team Subsidies in New Orleans

The competition to host sports mega-events and/or a professional sports team is often as fierce as the competition among athletes on game day. Sports infrastructure is vital in not only attracting commercial sport but in retaining teams or events. Prior to Hurricane Katrina, New Orleans appeared to be on the verge of losing their NFL franchise, the Saints. Tom Benson, the owner of the Saints, had reportedly rejected the state's final offer to keep the Saints in New Orleans in late April of 2005. The state's offer included not only public financing of over 75 percent of a proposed $174 million Superdome renovation, but also direct cash payments to the Saints totaling $64 million through 2008 and $9.5 million per year after the completion of the renovations to the Superdome in 2008. (USA Today, 2005). The state's offer to the Saints to include the annual cash subsidy would place the team in the top half of the financial standings in the NFL.

The fact that Benson would reject such an offer speaks volumes about the financial realities of the NFL and the inordinate transfer of business risk from teams to their host cities. While the state struggled to meet its contractual cash payments to the team in the wake of reduced tax revenues following 9/11, the only significant financial risk facing Tom Benson is the $81 million he would be required to pay (representing the subsidies that the Saints have received since 2001), if he breaks his Superdome contract, which he can do following the 2006 season (Konigsmark, 2005). That risk pales in comparison to the $1 billion written offer Benson claims to have received for the team in 2005, a 1,400 percent increase over the $70 million price Benson paid for the Saints in 1985 (Robinson, 2005). The lucrative offer Benson received for the team reflects at least in part the money-making potential of NFL teams, which is explained in large part by the subsidies cities extend to attract a supply of teams that is limited by the NFL and its owners.

Why would Benson consider leaving New Orleans? The answer, of course, is a more lucrative offer or better economic prospects by locating in another city such as Los Angeles, which has been without a team since 1995. The fans in New Orleans have done their part as attendance has been solid, but the overall financial resources of the city are limited. Prior to Katrina, among NFL cities, New Orleans was the fourth lowest in population trailing only Jacksonville, Buffalo, and Green Bay, and the fourth poorest, trailing Buffalo, Tampa Bay, and Phoenix. Even if New Orleans' per capita income were to recover to its pre-Katrina levels, if as few as 25 percent of the population were to fail to return, New Orleans would be smaller than any other American host city except for Green Bay, Wisconsin in any of the big four professional sports leagues.

Corporations also play a major role in keeping a team financially competitive. It is one thing to provide luxury seating; it is another thing to fill those seats. New Orleans serves as a headquarters for few major corporations, and there is not the market for loges and club seats that can be found in the other NFL cities with which New Orleans competes. One writer somewhat whimsically stated the NFL financial equation in the following way:

> Instead of fans, the NFL seeks corporations...While the NBA and Major League Baseball have guaranteed contracts for their players, the NFL with

> its exorbitant TV rights deals and corporate backing has practically given their owners guaranteed dollars…
>
> The way business is done now is the owner convinces his buddies who own the largest businesses in their respective cities to buy majority (sic) of the season tickets and luxury boxes. The result: a term exclusive to the NFL, the guaranteed sellout. Saints owner Tom Benson can't do that in New Orleans because there are no major corporations other than Entergy to back him. (Terrebonne Parrish Courier, 2005)

New Orleans is at a considerable disadvantage in supporting and, therefore, retaining either the Saints or its NBA franchise, the Hornets. The lack of financial capacity creates a relative shortfall in team revenues, which explains the cash subsidies and tax concessions New Orleans has had to provide to retain its professional teams. New Orleans had a total capital budget of $74,627,540 in 2002 (City of New Orleans, Ordinance #23,957, November 2001). The estimated cost of replacing the Superdome is $600 million. Spreading that cost over 30 years would constitute 27 percent of the capital budget for 2002 without considering debt service on the bonds to finance replacing or renovating the structure.

Following Katrina any plans for completely replacing the Superdome have been scuttled, but the city will have to provide for a portion of the costs involved in repairing the facility and the adjacent New Orleans Arena. State officials made clear following Katrina that they intended to update the facility with new audio and visual equipment, more luxury seating, concession stands and wider concourses so that it would be competitive with the newer structures that exist in the NFL. However, Louisiana had only a $500 million insurance policy on state buildings along with $100 million in flood insurance, and the Superdome was just one of the many public buildings damaged by the storm. The Federal Emergency Management Agency (FEMA) will also contribute to the rebuilding effort, but the funds will have to be efficiently allocated.

Given the very small percentage of economic activity in New Orleans accounted for by the sports industry, it may not be prudent to devote a disproportionate share of scarce redevelopment funds to that sector. An even stronger argument can be made against refurbishing the Superdome to accommodate the financial needs of the NFL Saints since their owner has consistently sought economic concessions from a city and state that were financially stressed even prior to Katrina.

The economic incentive for the Saints owner to keep the team in New Orleans has been severely compromised by Katrina. Lacking the financial wherewithal to support professional sports following Katrina, it is not reasonable to expect that the team will make the financial sacrifices that are necessary as New Orleans attempts to rebuild. Furthermore, unlike the efforts made by large oil companies to repair the capital intensive oil refineries in and around the city, there exists no motivation for the Saints to recoup fixed or sunk costs since their investment in infrastructure has been minimal. This points to a larger problem with the financial structure of the professional sports industry throughout the United States: the existence of substantial subsidies for infrastructure undermines the team commitment to their host cities, and absent any meaningful risk to their own capital, what incentive do teams have to stay in a city that experiences a catastrophe on the scale wrought by Hurricane Katrina? There is no question that the financial risk accompanying hosting professional sports in the United States is disproportionately borne by the host community. Katrina provides striking testimony to the reality of how subsidies for sports infrastructure have contributed to that financial vulnerability.

V. Theory Regarding the Economic Impact of Sport

The argument for subsidies for professional sports has often been based on the economic impact it provides; however, independent scholarship arguing against sports as a catalyst for economic development is abundant (Noll and Zimbalist, 1997). The often spectacular economic impact estimates advocates for subsidizing sports infrastructure advance fail to accurately estimate the economic impact of sports for at least three reasons. First, often the costs associated with hosting the event, building the structure, or accommodating the team are treated as expansionary expenditures. Such a tactic ignores the budgetary reality that money spent on such endeavors precludes spending that money on something else. The benefit from the use of that money for some other purpose, for example building a levee as opposed to a stadium, represents a cost to the community and should be considered in evaluating the efficacy of any project.

Second, the money spent on attending a sports event by residents of the home team community necessarily precludes them from spending that money on other things. Furthermore, local expenditures on professional sports may actually reduce total spending in the economy as opposed to simply reallocating money among competing ends. Professional sports, which use national resource markets as opposed to locally owned and operated resources for alternative entertainment or recreational activities, may foster a net outflow of money. Most of the money spent on a night at a professional sports event goes to the athletes and owners of the team who may not live in the community in which they play. Value created in the community by the event or team play may not be value that the community recognizes in the way of increased incomes, which are spent again in the community as might be the case with locally owned and operated entertainment. Professional sports may be a model better described as the circus coming to town for a temporary stay and leaving with a portion of the income spectators created through their economic activity within the community.

Third, to properly gauge the benefit to the public sector, the incremental tax revenues collected should be net of the incremental explicit costs incurred in hosting the event or team. The Super Bowl, for example, places a heavy security burden on the host city, and that cost needs to be identified in estimating the net benefit to the city from hosting the event.

Taken together the implication of the three qualifiers noted is that the appropriate measure of the benefit imparted by the subsidy is the measure of **net value added.** The inability or unwillingness to recognize the difference between gross expenditures in conjunction with an event and the net value added it induces explains the substantial disagreements relating to the economic impact of sports teams and mega-events on host community economies. Once the economic impact of sport is properly measured, independent scholarship indicates that most teams and mega-events fail to increase net value added for the host community.

VI. An Empirical Examination of the Impact of Professional Sports on New Orleans

Baade and Dye (1990) examined the impact of NFL teams and Major League Baseball franchises as well as new stadiums on personal incomes in nine host cities, including New Orleans, between 1965 and 1983. In addition, in order to account for regional economic fluctuations, Baade and Dye (1990) also examined the impact of professional sports on the ratio of personal income in host cities to the larger geographic regions in which these cities resided. Their oft cited results indicate that the construction of new stadiums had a statistically significant negative impact on the personal income ratio for the sample of cities examined. For New Orleans specifically, the construction of the Superdome appeared to have a significant positive impact on the personal income ratio, but that impact was then offset by a significant negative impact induced by the NFL Saints. In their model utilizing personal income rather than the personal income ratio, the presence of the Saints had a positive but not statistically significant impact on the local economy while the construction of the Superdome was positive and just on the border of statistical significance at the 10 percent level. Baade and Dye's analysis of New Orleans is replicated here updated through 2003 and modified to include the effects of mega-events such as the Super Bowl and NCAA Final Four and the presence of an NBA franchise in the city. In addition, as noted by Baade and Matheson (2001), oil prices have an important effect on economic activities in oil patch cities such as New Orleans, and Baade and Dye's analysis is updated to account for this. Finally, data compatibility necessitates using figures from 1969 through 2003, so that four early years of data in Baade and Dye's original study are not usable. Since the Saints began play in 1967, the economic impact of the Saints cannot be tested with this data set.

Equations 1 and 2 present regression equations that can be used to analyze the economic impact of professional sports on the New Orleans economy:

(1) $Y_t = b_0 + b_1Y_{t-1} + b_2POP_t + b_3STAD_t + b_4MEGA_t + b_5NBA_t + b_6OIL_t +$

$B_7TREND_t + e_t$

where Y_t is the personal income of the New Orleans metropolitan statistical area (MSA) in time period t, POP_t is the population of the New Orleans MSA over time, STAD is a dummy variable for the construction of the Superdome and takes a value of 0 prior to 1975 and 1 from 1975 on, MEGA is a dummy variable of one if the city hosted either the Super Bowl or the NCAA Final Four in a particular year, NBA is a dummy variable accounting for the presence of an NBA team in New Orleans, OIL is real price of a barrel of crude oil, TREND is variable assigned a value of 1 for 1969 and rising to 35 by 2003, and e_t is the stochastic error.

(2) $Y_t/YR_t = b_0 + b_1Y_t/YR_t + b_2(POP_t/POPR_t) + b_3STAD_t + b_4MEGA_t + b_5NBA_t + b_6OIL_t + b_7TREND_t + e_t$

where Y_t/YR_t is the fraction of personal income in the southeastern region of the U.S. accounted for by the New Orleans economy, and $POP_t/POPR_t$ is the fraction of the southeastern U.S. population living in the New Orleans MSA. Results of OLS regression on equations 1 and 2 are shown in Table 2.

Table 2: OLS Regression Results for Equations 1 and 2

Variable	**Model 1 (t-stats in parens.)**	**Model 2 (t-stats in parens.)**
Constant	7,431,637 (1.370)	0.03742 (7.536)
Y_{t-1} or Y_{t-1}/YR_{t-1}	0.814 (5.846)	1.135 (14.160)
POP or POP / POPR	-4.240 (-0.752)	-1.613 (-6.353)
STAD	-127,597 (-0.232)	0.0006 (2.657)
MEGA	-130,956 (-0.706)	0.0001 (1.324)
NBA	67,275 (0.270)	-0.0001 (-0.679)
OIL	25,775 (2.633)	0.00003 (6.913)
TREND	149,056 (1.852)	-0.0003 (-7.524)
Fit statistics	Adj. R^2 = .995 Durbin Watson = 1.891	Adj. R^2 = .995 Durbin Watson = 2.217

The results in Table 2 present two stories. In Model 1, no sports variables emerged as statistically significant and the coefficients on both the Superdome and mega-events variable were of the wrong sign. Both of these findings suggest, in accordance with most of the academic literature, that sports have little impact on the economic activity within a city. The results for Model 2, however, present a different story. While the coefficients on the NBA and mega-events variables are not significant, the Superdome coefficient is positive and significant at the 5 percent level confirming the results of Baade and Dye (1990) in the same model. This model presents evidence that the Superdome itself may be an important component of the New Orleans economy, but the teams that play there as well as a handful of the biggest sporting events that take place in the Superdome do not have much impact on the overall economy.

This result is, perhaps, not surprising. The utilization of the Superdome has increased over time, and it has been successful in providing a venue that accommodated events, most of which are not related to sports, that brought visitors and spending to New Orleans from outside the metropolis. Professional football and basketball, on the other hand, induced substitute spending that ultimately deflected resident spending to areas outside New Orleans. The teams, furthermore, drained scarce city resources through subsidies that became income for non resident players, coaches, and owners. The Saints, as the primary tenant, may have influenced Superdome scheduling and effectively prevented the facility from being utilized for other events that could have expanded the New Orleans economy.

The spectator sports industry, in light of the preponderance of scholarly evidence, is properly viewed as a lagging rather than a leading economic activity. Sports yields hedonic value, in other words, and the quality of life benefit it imparts is a luxury affordable in affluent communities rather than an activity that helps a community achieve affluence. Sport for the most part is properly viewed as a luxury good and not a productive resource although some sports infrastructure, such as the Superdome, is flexible enough to provide use outside the sports sector.

VII. Spectator Sport and the Revitalization of New Orleans

A part of the reconstruction debate will focus on the Superdome and New Orleans Arena, and it is important to assess, therefore, what the public can expect in the way of a return on those investments. The devastation of the middle and lower classes has a profound impact on the professional sports industry in New Orleans. These classes provided workers for the leisure industry as well as other industries, and their abandonment of New Orleans has impaired the ability of the City to adequately meet the needs of service establishments in the French Quarter and CBD that cater to the needs of tourists. The loss of the middle class has also diminished consumption in New Orleans. In other words, Katrina has eliminated both the workers and the customers upon which professional sports relies.

The labor shortage makes it doubtful that the Superdome could host a major event at this juncture. Each large event at the Superdome requires approximately 2,500 part-time workers. Unfortunately, the lack of housing in New Orleans means that no such pool of potential part-time workers is available in the city. Indeed, for a short time longer at least the workers who maintain the hotels and provide restaurant and bar business are housed in the hotels. A Superdome and convention center that is up and running tomorrow would bring in guests who would displace the very workers that provide guest services. Therefore, even if an event could be physically hosted in the Superdome right now, a good fraction of the workers at the facility would very likely have to come from outside the city. The leakage of money from New Orleans through athletes repatriating their incomes to their primary residences would further be enhanced by ordinary workers doing the same thing in some appreciable amount because of a lack of housing in many New Orleans neighborhoods. Post-Katrina, it is even less likely that income generated through commercial sports activities would remain in the City.

Likewise, the devastation in New Orleans has made it less likely that professional athletes would remain in the community to spend their money. The lack of social services and the destruction which has transformed New Orleans physically would compel many with the financial wherewithal to live elsewhere. Thus, Katrina likely enhanced the size of the substitution effects noted in the previous section of the paper and enhanced the risk of investment in sports infrastructure substantially.

The money spent on professional sports infrastructure in this environment of acute housing shortages can only slow down the restoration of the housing stock and ultimately frustrate the financial interests of the sports establishment. Money spent on sports infrastructure is money not spent on housing and deflects construction work from where it is needed most.

Restoring the Superdome and New Orleans Arena does send the message that New Orleans is on the road to healing. The message, however, is a tease if those renovated facilities cannot host events for which local residents provide the necessary labor. A better reconstruction strategy would be to repair and replace the damaged housing stock first.

It is also hard to imagine the benefit to the city of New Orleans of repairing sports facilities that the owners will not use due to the compromised economics of events hosted by those structures, especially for commercial sport. If there are few residents, there will be few fans. Few fans translates into little spending, and since tax dollars are derived from the demand for goods and services, tax revenues generated by governments through activities at the facilities will be less, perhaps appreciably less, than before Katrina. Indeed, declining business activity following the terrorist attacks on 9/11 had already resulted in deficit spending by the Louisiana Stadium and Exposition District to meet its cash subsidy obligations to the Saints and Hornets. The shortfall had led to serious discussions about tax increases for car rentals and hotels in addition to sales tax and cigarette tax increases prior to Katrina's arrival. Under present conditions no tax increases are possible, and it is better from the city's point of view to have the teams play elsewhere rather than assume those obligations. If the Saints and Hornets fostered deficit state spending pre-Katrina of approximately $15 million, surely those deficits would increase substantially following Katrina. The costs to continuing to host professional sports outweigh the benefits and will continue to do so until the economy can be reinvigorated back to pre-Katrina levels.

The professional sports teams in New Orleans would have to be motivated by something other than their financial self interest to help New Orleans move beyond Katrina, but the evidence is overwhelming that the owner of the New Orleans Saints has operated pre- and post-Katrina out of financial self interest. Prior to the storm, the evidence indicates that he was reluctant to accept a refurbished Superdome because Benson apparently believed that even an updated Superdome could not generate sufficient income to allow him to be financially competitive in New Orleans. When evaluating the nature of the negotiations between Benson and city, the problem for Benson is New Orleans and not the Superdome. Benson has the option to move the team to Los Angeles, but Paul Tagliabue, the Commissioner of the NFL, and the League would have a massive public relations problem if he allowed that move. While the NFL may share revenues, cities that host teams are hardly given a free ride. The *quid pro quo* for having access to revenues generated by NFL teams playing in the New York and Chicago markets is to build state-of-the-art stadiums that allow each team to contribute as much as they can to the pool of stadium-generated revenues. Eventually the NFL will find a way to move the Saints out of New Orleans rather than have the team become a ward of the League.

VIII. Conclusions and Policy Implications

Hurricane Katrina induced a massive outflow of residents and businesses from the city of New Orleans. Included among those businesses that fled are the city's two major professional sports teams, the NFL Saints and NBA Hornets. The capital costs necessary to encourage the return of the Saints and the Hornets for the long term are substantial. The images of the NFL and NBA will be damaged if the Saints and Hornets do not at least make cameo appearances, but in the longer term, the teams and their leagues will demand greater revenue streams than can be generated in their current facilities. The fact that New Orleans and the State of Louisiana were directly subsidizing the teams indicates that pre-Katrina the teams were not generating revenues in their venues that allowed them to be financially competitive in their leagues. This paper has concluded that it would be singularly unwise in the post-Katrina world to direct substantial funds at refurbishing the Superdome and New Orleans arena specifically to make the teams financially competitive.

Capital expenditures on the Superdome supplant capital expenditures on housing, schooling, and other middle class amenities that will bring the middle class back. The evidence from Baade and Dye (1990) and this paper indicates that the Superdome did account for significant net value, but the NFL and NBA franchises did not as a consequence of powerful substitution effects. Therefore, expenditures on the sports facilities that are undertaken should be consistent with attracting those Superdome related activities that have contributed to the New Orleans economy. It should be kept in mind, however, that even though the Superdome has brought net benefits to the city, the reconstruction of the Superdome in the short run should be undertaken only after spending on housing, and that restoration efforts not necessarily be directed towards amenities that provide the highest revenues for sports franchises, but instead providing a multipurpose facility for non-sporting events. Providing physical accommodation for professional sports teams does not advance the economics interests of New Orleans in the short term. Doing so would exacerbate the economic problems that currently exist.

Cities in general should be mindful of the fact that subsidies for professional sports teams eliminate the financial incentives teams would have to remain in the community following a natural or manmade disaster. Businesses that have risked their own capital and built infrastructure have a financial stake in their host community, but the Saints and Hornets, as well as most professional sports teams in the United States, have few such ties to their local communities. Paradoxically, cities have contributed in a very substantial way to the incentive for teams to abandon a city in the face of a disaster on the scale of Katrina. The owner of the New Orleans Saints, Tom Benson, was making his way out of New Orleans before Katrina, and the storm has undoubtedly increased his perception of risk and diminished his financial prospects in New Orleans to a point that it is not in his financial interest to stay there.

New Orleans will be rebuilt at the grassroots home by home and business by business. The rebuilding of New Orleans will not occur purely out of economic incentive but because people are attached emotionally to their city. The economic motivation comes from recouping their fixed costs. If businesses cannot cover their variable costs of operation in relatively short order, they will leave. The best way to cover the variable costs is to encourage consumers to return to the community, and therefore, government's role should be to do what they can to encourage the return of the middle class. To this end, the order of capital expenditures in New Orleans should be levees, housing, middle class amenities, infrastructure for nonresident businesses, and last those industries that cater to the entertainment needs of the middle class.

The role of sports in the economic recovery of the city is dubious other than serving as a symbol that the city remains vital. The repair of the Superdome and the New Orleans Arena is an expensive tease in that regard, but does little to provide what is needed for the community to recover from the storm. Sports and the hosting of mega-events may actually undermine longer term recovery through deflecting capital spending from where it is needed most and crowding out those workers and residents who are involved in the essential rebuilding process. Sport may provide hedonic value, but at this juncture hedonic value and the economic interests of the sport elites must, out of financial and developmental necessity, take a back seat in the interest of the greater good.

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