THE ECONOMIC FIELD OF DREAMS: ANALYZING THE LOCAL ECONOMIC
DEVELOPMENT POTENTIAL OF SPORTS TOURISM

Eric J. Harper
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DEVELOPMENT POTENTIAL OF SPORTS TOURISM

A Thesis

by

Eric J. Harper

Approved by:

_____, Committee Chair
Robert W. Wassmer, Ph.D.

_____, Second Reader
Peter M. Detwiler, M.A.

_____
Date

Student: <u>Eric J. Harper</u>

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_____, Department Chair   _____
Robert Wassmer, Ph.D.   Date

Department of Public Policy and Administration

Abstract

of

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Local economic development organizations use a variety of project and program
types to stimulate local economic growth. Recently, many local economic developers
have evaluated amateur sports tourism as a local economic stimulus. This thesis studies
the economic benefits of one such tourism-based economic development project, the
proposed Placer Valley Sports Complex in Placer County, California. The sponsors of
the project, a local hotel group, seek to increase hotel visits in the Placer Valley area by
creating and operating an amateur sports complex. Because of the substantial costs of the
sports complex, and the potential economic benefits the complex could bring to the local
region, it is important that project decision-makers fully study and evaluate the potential
costs and benefits of the project.

I study the economic benefits of the Placer Valley Sports Complex through input-
output analysis using the IMPLAN model. The IMPLAN model is a commercial input-
output model that synthesizes industrial input and output, labor, and tax data and enables
researchers, analysts, and consultants to estimate the economic impacts of outside
changes to local economies. Using secondary source visitor-spending surveys and

estimated visitor counts, I used the IMPLAN model to estimate the economic impacts of the proposed sports complex. I projected the multiyear costs of the project, and compared them to the economic benefits of the project, using the design, construction, and maintenance cost data from the project sponsors.

My results indicate that the Placer Valley Sports Complex could generate an estimated $28.8 to $91.7 million in net present value for Placer County over a 30-year period. However, because of several factors that could affect actual visitor spending related to the sports complex, there is potential that the actual economic benefits of the complex could be lower than I estimated. Sports complex sponsors need to further analyze visitor count estimates relative to the local sports market and conduct local visitor-spending surveys to fully address visitor spending uncertainty. Sports complex sponsors also need to identify a dedicated revenue source to finance the project, and there are financial, legal, and political problems that may inhibit project financing. Because of the complicated nature of economic impact analysis, and the various financial, political, and social issues involved with the Placer Valley Sports Complex, this thesis highlights the need for local policy makers to rigorously study and evaluate economic development project proposals.

_____ , Committee Chair
Robert W. Wassmer, Ph.D.

_____
Date

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Chapter 1

INTRODUCTION

Economic development organizations engage in a variety of programs and policies to stimulate job growth, facilitate business growth and expansion, attract new firms and industries, and improve the economic condition of local residents. Net jobs created in local economies increase overall employment rates, provide upward mobility for local employees, and increase per capita income for local residents. However, economic development projects can be controversial, especially when they benefit small groups of individual businesses. The public perception of economic development projects is important, particularly if they include public subsidies. The public has a right to know that public agencies are spending tax dollars appropriately, and with the public interest in mind. There is a fine line between public incentives for business development and handouts to private interests.

One major criticism of economic development incentives is that in some cases public agency staff poorly measure economic costs and benefits. Poor cost-benefit analyses can lead to situations where the costs of incentives exceed the economic and social benefits of the project or program. Also, to the extent that incentives become entitlements, instead of incentives for economic growth, they lose their effectiveness as an economic stimulus. However, because of regional market competition and local politics, any proposal to eliminate existing financial incentives would likely encounter significant resistance. To the extent that other local jurisdictions provide incentives, local

economic developers and elected officials are under great pressure to provide incentives because of the competitive economic environment.

The challenge to economic developers in achieving local economic growth through financial incentives is in creating and adhering to accurate and research-supported methods to evaluate projects and the expected return on investment to the region. In recessionary periods with limited local resources, using appropriate evaluation methods becomes an even more important role for economic developers as they focus their efforts, programs, and policies towards outcomes that provide the highest rates of return with limited resources. Academic research is extensive in the economic development field on the value and appropriateness of incentive programs, methods to evaluate projects and economic growth expectations, and makes several recommendations for best practices in the economic development field. However, as is true with many disciplines, academic research does not always transfer to the economic development policies adopted by local practitioners.

This thesis studies the economic impact of a proposed amateur sports tournament complex in Placer County, California and evaluates the economic benefits of the project, based upon a number of economic assumptions as well as the financial and social costs of the project. Evaluating the project from an economic perspective, this thesis seeks to study the public and private economic and social benefits of the project, costs of the project, and the anticipated return on investment to the region. The research in this thesis provides a background on how other researchers have evaluated similar projects, what

methods economic researchers have used in evaluating sports tourism projects, and evaluates the economic impact of an amateur sports tournament complex in Placer County. The purpose of this thesis is to provide decision makers with a framework to decide what makes economic sense for Placer County and other similar jurisdictions, and what costs and benefits should decision makers consider during project evaluation.

This chapter continues with a discussion of local tourism promotion as an economic development tool, including the reasons why local groups engage in tourism promotion and the effect tourism has on local economies. Following this section is a discussion of amateur sports tourism efforts currently underway in Placer County California, including a proposed amateur sports tournament complex that is the subject of this thesis.

Tourism Promotion

Policy makers and economic development professionals sometimes promote tourism to stimulate regional economic growth. The theory behind tourism promotion is that tourism injects outside dollars into a local economy, thus creating additional final demand for industries positively affected by tourism including lodging, transportation, food and beverage, entertainment, shopping, and other industries. When visitors spend money in a local community, they bring new investment to the region. There is a finite supply of income in any regional economy, and tourism expands the regional income supply by transferring income from one regional economy to another. These outside dollars provide additional local income, allowing local residents to spend their new

income in the local economy (with some leakage to other regional economies). As an economic development tool, tourism promotion functions similar to how business attraction works in that each method stimulates new investment in the local economy. To the extent that tourism promotion sustains visitors to the region, the local economy benefits from job and business growth, and higher personal income.

From a regional perspective, tourism promotion can make economic sense for a local community because it attracts outside investment in the community through planned events and other attractions. To the extent that the negative externalities associated with increased tourism are minimal, including environmental or traffic impacts, tourism can be a healthy addition to a regional economy and provides for greater economic diversity. Such diversity is particularly advantageous for communities because it hedges against future downturns in industrial sectors, and potentially gives communities a stronger and more diverse economic base. However, when evaluating tourism promotion from a larger geographical perspective, tourism promotion in a local community could become a zero-sum game with tourism expenditures transferred from one regional economy to another. While this aspect of tourism promotion is not the subject of this thesis, it is always something to consider when evaluating local economic impacts and the effect such impacts have on the greater economy. In general, policy makers should pursue economic development objectives that add value to the economy, and not simply transfer economic activity from one region to another.

Economic Development Potential of Amateur Sports

For the Sacramento region in Northern California, the economic impact of sporting events has been a high profile news subject. Most notably, news that the Sacramento Kings professional basketball team was considering moving to Anaheim sparked a regional campaign to keep the Kings in Sacramento (Sacramento Bee, 2011). Fans across town joined a city of Sacramento led public relations campaign to show support for the Kings team by wearing the basketball team's colors and making donations to support a new sports arena for the team. In an economic impact analysis titled, "The Economic Engine Report," the proposed sports and entertainment arena in Downtown Sacramento would reportedly generate annual economic activity of $157 million (Capital Public Finance Group, 2011). The loss of the Sacramento Kings and the plan for a new arena, according to arena supporters and City of Sacramento officials, would lead to a substantial economic blow to the region (Bizjak, 2011).

Northeast of Sacramento, Placer County, California also took interest in the sports tourism market. In March 2009, The Placer County Office of Economic Development published a study that explored the Placer County tourism market (Dean Runyan Associates, 2009). The study made several findings, including an estimate that the travel industry contributed $425 million in economic activity and 14,150 jobs for Placer County in 2008. The study also made several findings on tourism industry market potential for several areas in Placer County, including the Placer Valley area which is composed

primarily of the cities of Roseville, Rocklin, and Lincoln. The report recognized Placer Valley for having strong potential in the amateur sports tourism market.

Placer Valley Tourism (PVT), a business improvement district representing the hotel industry in the cities of Roseville, Rocklin, and Lincoln, and the lead tourism agency for Placer Valley, has placed a particular emphasis on growing sports tourism in the region. On its website, PVT brands the region as "The Northern California Sports Headquarters," and actively promotes a number of sports tourism events including golf tournaments, tennis matches, BMX racing, cycling events, and amateur youth and adult sports tournaments (PVT, 2011). Because of the downturn in the economy, and the reduction in business-related travel to the Placer Valley, PVT seeks to diversify the local tourism base and address recent decreases in hotel occupancy.

In 2010, PVT commissioned a feasibility study to explore the possibility of a Placer Valley Sports Complex (Anderson, 2010). Released in January 2011, the feasibility study found substantial market demand for expanded amateur field sports (e.g., soccer, lacrosse, rugby) and diamond sports (i.e., baseball, softball) facilities in the region. The feasibility study estimated total construction costs for the complex to be between $27 and $37 million, and a direct economic impact ranging from $8.1 to $12.1 million (Ripken Design, 2011). Supported by the market findings in the feasibility study, PVT's goal is to create a "destination" complex that draws teams from outside the area, and has a critical mass of fields in order to host large tournaments that stimulate the largest amount of hotel room-nights.

The destination complex distinction is important because Placer Valley already has a variety of soccer, baseball, and softball fields scattered across several cities, but the area lacks a single facility with enough fields to attract most large tournaments. The largest demand for concentrated fields is in soccer, with baseball and softball representing significantly less of the overall demand for amateur sports facilities. Proposed funding mechanisms for the sports complex include increasing the hotel tax in the local cities as well as increasing the business improvement district assessments collected by PVT.

The study commissioned by PVT made no findings as to either indirect or induced economic impacts related to the proposed sports complex, used gross sales estimates to measure economic impacts, and used a simple spending ratio to calculate job growth for the proposed sports complex. Typical economic impact studies measure the direct, indirect, and induced economic impacts. Additionally, gross sales figures typically overestimate economic impacts, and employment growth from tourism depends upon a number of inter-industry linkages and sustained growth patterns. Because the study did not fully explore the economic impact of the sports complex, this thesis will use research-supported economic impact study methods to estimate the direct, indirect, and induced economic impacts in a more robust analysis. This thesis will also investigate the underlying assumptions of the economic impacts reported in the study and provide an alternative estimate of economic impacts based upon research-supported methods.

Other Regions Exploring Amateur Sports Tourism

Public support for amateur sports tournament complexes is not unique to the Greater Sacramento region. Cities across the United States have adopted amateur sports tournament complexes as "engines" of economic development, attempting to attract teams and families from other areas to increase local spending. In Clark County, Washington, an economic impact analysis concluded that a $22.7 million amateur sports complex would generate $206.5 million in economic impacts over a 20-year period (Rice, 2011). In 2009, Kent County, Delaware announced plans for a 15-field amateur soccer complex and anticipates economic benefits at or exceeding $30 million annually for the region (LaRoss, 2009). In April 2011, the city of Fresno, California executed an agreement with a private sports tournament facility operator to study the feasibility of private operation of two public sports complexes in order to generate more revenue and increase economic activity from tournament operations (City of Fresno, 2011).

While the Greater Sacramento region generally lacks amateur sports facilities with the size and scale to host major tournaments in a single location (particularly for soccer), several jurisdictions in the area are considering building complexes to increase regional economic activity. The city of Folsom is considering a themed amateur baseball tournament complex, and estimates that the complex will generate a conservative $18 million annually in economic benefits for the community (City of Folsom, 2010). The City executed an agreement with a private developer/park operator to study the complex feasibility and made a $450,000 loan from city redevelopment funds for the study.

The city of Elk Grove, also located in the Greater Sacramento region, has announced plans to build an amateur tournament sports complex with an estimated construction cost of $12 million. The City commissioned an economic impact study that determined the sports complex would generate a citywide economic output of $9.9 million for construction (one-time) and $2.4 million in annual output due to complex operation (City of Elk Grove, 2011). The City did not study the economic impacts of complex visitor spending directly, but the City and its consultant questioned the complex developer's original estimate of visitor spending. City staff reduced the developer's original visitor spending estimates, and ultimately estimated $5.9 million in annual economic output related to visitor spending and projected that the City would receive approximately $250,000 in annual tax revenue (City of Elk Grove, 2011). Noting the competition among several cities in the Sacramento region, Elk Grove Councilmember Gary Davis commented, "There's a lot of cities looking at trying to put one of these things together and the first one that does it will be the winner," (Elk Grove Patch, 2011).

With multiple complexes planned in the Greater Sacramento region, it is logical for local decision makers to consider whether the local market could support more than one fully occupied "destination" complex. According to the findings in PVT's feasibility study, there is probably not enough market for multiple destination complexes in Greater Sacramento. Therefore, there is a regional consensus among the various stakeholders that the "first one in" (as Gary Davis noted) will reap the benefits. For this reason, the competing groups in the region are operating under a great deal of urgency.

The other issue to consider in the context of regional competition is what distinct amenities the proposed complexes provide to the end users (i.e., players, coaches, and traveling families). According to Ripken Design (2011), tournament organizers and participants typically value smooth transportation access, on-site and off-site amenities, and an overall positive visitor experience when making decisions to return to a previous tournament site. Should multiple cities in the Greater Sacramento region build large sports complexes, consumer preferences at each complex could drive the marketability and success of each complex.

A Case Study in Economic Impact Analysis

The conceptual Placer Valley Sports Complex lends value to the discussion raised earlier in this chapter regarding economic development policies and incentives. As a case study, the Placer Valley Sports Complex is a good example of the importance of understanding how to accurately measure economic costs and benefits for proposed projects. Given the potential costs and benefits of the project, the Placer Valley Sports Complex presents a large amount of financial risk and reward for the region. This thesis explores the fiscal and social costs of the project, as well as the anticipated benefits, prior to project funding and construction. Local decision makers could thus use the results from this thesis as additional decision-making criteria for the project, as well as a case study for decision makers in future studies of amateur sports complexes.

Thesis Organization

I have organized this thesis into five chapters. This introductory chapter has provided the background on the thesis topic, structure, and information that I will present throughout the thesis. The literature review chapter will provide the relevant academic literature on the topics of economic impact analysis, input-output analysis, and tourism impact studies. The methodology chapter will review the methods used to evaluate the economic impact of the sports complex, including a description of the input-output analysis data, collection methods used, and how I will measure the economic impact of the sports complex. The results and analysis chapter will review the data and describe my specific findings based upon my analysis of the input-output model results and the estimated costs and benefits of the sports complex project. The conclusions and recommendations chapter will address the importance of the findings in this thesis, suggest opportunities for future study, and discuss the relevance of the findings made in this thesis relative to the Placer Valley Sports Complex as well as to other future economic development projects.

Chapter 2

LITERATURE REVIEW

This chapter reviews the relevant academic literature on economic impact analysis and how academic standards, common practices, and generally-accepted methodological approaches apply to economic studies of regional tourism. The chapter will begin by introducing the fundamental concepts of economic impact analysis and how researchers and analysts currently study local economic impacts. The chapter continues with an overview of the most commonly used economic impact study method, input-output analysis. I will use input-output analysis in this thesis to estimate the economic benefits of the Placer Valley Sports Complex, and thus a thorough understanding of input-output study methods and design are important for the chapters to follow. The literature review will conclude with the background of the specific input-output model used in this thesis, as well as a general discussion of how other researchers have conducted tourism impact studies, and what insight previous researchers have suggested when designing tourism-based economic impact studies.

Economic Impact Analysis

Economic development project sponsors commonly use economic impact analyses, but policy makers, the public, and even project sponsors themselves often misunderstand economic impact analysis. Headlines in local newspapers often cite large economic impact estimates for proposed projects such as professional sports arenas, tourist industries, and large new commercial developments. It is common for readers to

see news articles boasting about economic impacts in the million or billion dollar ranges, with hundreds of even thousands of jobs reportedly created because of certain development projects or the estimated economic impact of certain industries. Lacking an intricate knowledge of how researchers conduct and report economic impact studies, the fundamental question to any impact study reader should be, "what is an economic impact and how are these impacts measured?"

At the simplest level, economic impacts are the direct, indirect, and induced effects of an outside economic change to a specific region. The change to the region could be an increase in consumer demand for certain products, expansion or relocation of a firm, construction of a regional convention center, tax rate change, or any number of other economic changes that affect how dollars flow in and out of a particular region. The net economic impact is the increased economic activity in a region less any economic activity lost because of an outside change to a regional economy. Based upon this definition, it is critical to define the geographic boundaries of the regional study area at the onset of an economic impact study.

The purpose of economic impact analysis is to study a given change in a well-defined regional economy and attempt to measure the total economic impact to the region in the form of economic factors such as personal income, value added, employment, profits, wealth, and taxes (Weisbrod, 1997). Economic impact studies are distinct from studies of economic "significance" in that they attempt to measure the net impact to a region for a specific project, and not simply the total amount of economic activity. For instance, if a

new firm were to relocate to a specific region and generate gross sales of $3 million, one

might be tempted to determine that the direct economic impact for the region is equal to

gross sales. However, a properly designed economic impact study needs to account for

economic activity that occurs outside of the regional economy. Because no regional

economy is completely self-sustained, they rely on imports of goods and services from

other regions. Profits and wages related to local business activity often benefit owners

and laborers from outside of the regional area.

Morgan (2010) defines economic benefits that leave the regional economy (and

benefit other regions) as leakage factors, and include wholesale and transportation

margins, non-local wage earners, savings, corporate profits accrued outside the subject

region, and other factors such as federal taxes. The true economic impact to the study

region depends upon what portion of increased economic impact benefits the region as

opposed to other areas. Given the amount of interregional transactions in many

industries, measuring the economic impact to a specific region is complicated. In

addition, the smaller regional study areas become, the higher the probability of increased

leakage. National study areas will have the least amount of leakage with state, county,

and sub-county regions exhibiting higher levels of leakage, all else being equal.

Measures of Economic Impact

Direct, indirect, and induced effects generate economic impacts. Direct effects

result from the initial outside change to a subject region, such as a new firm opening.

The indirect effects are the business inputs required for the production of goods and

services to satisfy the demand created by the direct impact. In the case of a new firm, business-to-business transactions in the region are examples of indirect effects. Induced effects are the business inputs required to satisfy the additional household demand created by the increased income generated in the region by the direct and indirect effects.

The primary measures of economic impact deserve more explanation. Commonly studied economic impact measures include employment, personal income, value added, and total output (Stevens, 1988). Employment is the most easily understood measure as it represents the estimated number of jobs "created" by the subject project. While easy to understand, developing accurate estimates of job creation due to an economic development project can be a difficult task, even without considering the value or duration of such jobs. Some economic impacts have lasting effects on job creation, such as new firms that continue to expand and remain in a region. Other employment impacts, such as construction projects, typically have much shorter-term impacts for regions. Once construction ends, the jobs created for the project typically leave the area for other construction projects.

Personal income is another economic impact measure, and it includes employee compensation and proprietor income. To include personal income in an economic impact study, the personal income growth associated with a project must be from workers and self-employed business owners that live within the subject region. Because of commuting, businesses located outside the study area, and other factors, the total personal income growth resulting from a project is not typically a purely local impact. When

researchers provide reasonable estimates of worker and business owner locations based upon available data sources, and the quality of the economic impact model and income data are sound, previous researchers have regarded personal income as a conservative and relevant measure of economic impacts (Weisbrod, 1997).

Value added impacts, sometimes referred to as the "gross regional product," include an aggregate value of personal income, other property type income (e.g., interest, rents, royalties, and profits), and indirect business taxes such as excise and sales taxes (Stevens, 1988). Other property type income is the most likely component of value added estimates to benefit other regions, particularly as the businesses involved with the subject project involve multiregional businesses. It is challenging to estimate the flow of other property type income from indirect and induced level economic impacts. Thus, many economic impact models develop methods to estimate final demand in the subject region and account for "leakage" factors (i.e., project impacts benefiting outside regions) in value added estimates. With leakage factors accounted for, value added impact estimates provide researchers and policy makers with realistic figures of economic impact in a regional economy.

Consultants and analysts commonly reference the final measure of economic impact, total output, in economic impact studies. Unfortunately, total output often provides an inflated picture of economic impact. Total output measures the gross direct, indirect, and induced sales impact resulting from a project. Referencing again the hypothetical example of a firm with $3 million in gross sales, if I add the indirect and

induced effects resulting from the $3 million in sales, the total value of all direct, indirect, and induced sales is the total output. The problem with reporting total output as a reliable measure of economic impact for a specific project lies with the inclusion of intermediary transactions in total output estimates. Distinct from value added estimates, total output double-counts the sales of intermediate transactions (i.e., goods and services sold in order to create the supply for final demand) and the value of those intermediate sales in final demand sales. While total output does reflect the estimated gross sales volume, it overstates the net sales impact.

Consultants often report total output as the economic impact in studies because it represents the largest impact number in economic impact models. While total output accounts for the total amount of economic activity and sales transactions related to a project, the inherent double-counting of intermediate inputs artificially inflates output estimates. Therefore, policy makers and analysts should carefully review the methods and results of economic impact studies, particularly if stated project impacts are reported using total output. As Morgan (2010) states, "The results of any economic impact model will only be as accurate and realistic as the assumptions and data used to produce them" (p. 5). Policy makers and analysts should employ a critical eye and exercise due diligence when reviewing or preparing an economic impact study. The opportunities for negligence or abuse in economic impact study preparation are real, and the effects of funding economic development projects based upon misrepresented economic benefits can be long-lasting.

Input-Output Analysis

Used commonly by researchers and analysts to estimate economic impacts, Input-Output (I-O) analysis measures inter-industry linkages in the national economy to explain the transactions between businesses and final consumers (U.S. Bureau of Economic Analysis, 2009). I-O analysis uses comprehensive matrices reflecting inter-industry transactions. Wassily W. Liontief constructed the original I-O tables in the 1930s, and his research and development in I-O analysis later earned him the Nobel Prize (BEA, 2009). As Duncombe (1998) states, "the heart of I/O analysis is the transaction table" (p. 168). I-O analysis uses both make and use tables which reflect a national snapshot of commodity production and consumption for a one-year period. Make tables specify commodities produced by industry and use tables specify commodity use by final demand institution (BEA, 2009). By construction, I-O tables are similar to double-entry accounting systems, with each change in any given industry causing a ripple effect in the industry tables in order to achieve balance in the tables (similar to the concept of debits and credits).

I-O tables estimate the direct, indirect, and induced impacts resulting from final demand institutions (e.g., households, governments, inventory/capital purchases, exports, and inter-institutional transfers). I-O tables assume constant returns to scale, and balance supply and demand in the production sectors. I-O tables do not account for supply side variables such as price, technology, and industry competition, and I-O tables assume full output homogeneity within an industry sector (Duncombe, 1998).

The U.S. Bureau of Economic Analysis (BEA) maintains and updates the national I-O tables annually, with major updates to the primary data sources for the tables made by the BEA every five years using the U.S. Census Bureau's Economic Census. In order to estimate local economic impacts, government and third-party organizations regionalize the national accounts by states, counties, and even zip codes. The regional I-O accounts provide the real value in I-O analysis, and are the focus of most economic impact studies. National I-O accounts, by themselves, are not very useful for local economic impact modeling because national industry averages do not apply to most local regions.

Regional Economic Multipliers

One of the fundamental products of I-O analysis is estimation of regional economic multipliers. As Stevens (1988) stated, "a regional economic multiplier is…the total economic effect that occurs in a region per unit of the direct economic change that caused the effect" (p. 89). Thus, a regional employment multiplier of 1.3 would estimate that for every one job created directly in a regional economy for a specified project, indirect and induced economic impact create an additional 1.3 jobs. In addition to employment multipliers, regional multipliers are also estimated for income, value added, and total output.

The magnitude of regional economic multipliers varies by the study region. In general, national study areas have the largest multipliers because they have the least amount of leakage. State and county multipliers are typically smaller because of increased leakage. In a study by Cornell University which evaluated the economic

impact of the child care industry, the average state output multiplier was 1.91, with a range from 1.64 to 2.17 (Liu, 2004). In another study by Cornell University, the national output multiplier for childcare was 3.0, with the local multipliers for the Kansas City Metro area and rural counties in the State of Kansas below 2.0 and 1.5 respectively (Ribeiro, 2004). In a publication by the University of North Carolina advocating best practices in the analysis of costs and benefits in economic development projects, Morgan (2010) stated, "multipliers rarely exceed 3.0 at the state level and 2.5 at the local level" (p. 3). Because of the variable nature of regional multipliers by region size and industry, there is not an established "range" for regional multipliers. Regional multipliers will vary based upon the size of the study area, the industries involved, and the type of multiplier (employment, income, value added, output) being studied.

Firm and industry characteristics affect the magnitude of regional economic multipliers. Firms and industries that purchase a larger share of local inputs have higher multipliers because of the recirculation of indirect and induced income in the local economy. Firms with high export sales, referred to as basic industries, also have higher relative multipliers because they bring additional dollars into the local economy through external sales (Mulkey, 2009). Service industries provide goods and services to local final demand users and typically have lower multipliers, all else being equal. Firms typical to basic industries include manufacturing, mining, and agriculture, although researchers would classify any industry or firm that has a higher proportion of external sales as a basic industry (Mulkey, 2009). Tourism is a unique basic industry because it

brings new money into the local economy without exporting goods and services to other regions.

Regional economic multiplier estimates face challenges in both measurement and application. Economic impact models commonly base employment multipliers upon data from the Census Bureau's County Business Patterns, BEA's Regional Economic Accounts, and the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages. These government data reporting agencies measure their data based upon actual workers, and not full-time equivalents (Stevens, 1988). Thus, there are inherent sources of measurement error in terms of real job impacts based upon these data, particularly as they relate to part-time and seasonal occupations. Output multipliers are also a common source of measurement error because of the tendency for economic impact estimates of total output to include double-counting of intermediate and final products. As Stevens (1988) states, "Imports are substitutes for indirect and induced production…when goods and services are purchased from other regions, they have no production, employment, income, or value added effects on the subject region" (p. 91). Researchers typically encounter fewer methodological concerns citing value added and income impacts, though even these economic measures could include errors based upon study methodology, and the researcher's efforts to account for regional leakage.

Regional economic multipliers vary significantly depending upon which type of multipliers the I-O model employs. In general, there are three primary multiplier types used in I-O models including Type I, Type II, and Type SAM. Type I multipliers include

only direct and indirect spending, thus excluding induced economic effects. Type II multipliers measure induced (in addition to direct and indirect) impacts, but because these multipliers "close" the model to households (i.e., assume local households comprise all final demand) Type II multipliers overstate economic benefits because of leakage (McKean, 2003). Type SAM (Social Accounting Matrix) multipliers also measure direct, indirect, and induced impacts, but in addition, Type SAM multipliers provide estimates for inter-institutional transfers, household imports of goods and services, household savings, taxes, and other government payments made by households, in-commuters, and other leakage factors that occur in final demand. By identifying region-level modeling of leakage factors, Type SAM multipliers provide a more accurate estimate of induced economic impacts.

<center>Regional Economic Impact Models</center>

The challenge in applying I-O analysis to real-world economic events is in constructing and regionalizing the I-O tables. To apply the concept of the national I-O tables to regional economies, researchers have developed both survey based regional models and non-survey models that use other data and assumptions to modify the national accounts to fit regional characteristics. According to Duncombe (1998), survey-based models are typically the most accurate, but they are also very costly. While surveys may better estimate local economic conditions, they suffer from the typical measurement errors that occur in survey-based research.

Due to the significant amount of time and costs involved with developing regional I-O accounts for local economic impact analysis, several third-party companies have developed computer-based data packages to aid local economic impact analysts. The primary commercial programs used by public and private institutional users include IMPLAN by Minnesota IMPLAN Group (MIG), the REMI model by Regional Economic Models, Inc., and RIMS-II by the BEA. Of the three models, each uses I-O analysis, although the REMI model also incorporates econometric and computable general equilibrium (CGE) to estimate multiyear project impacts, something that neither IMPLAN nor RIMS-II can do because they rely solely on I-O analysis. The CGE component of REMI allows for modeling of price changes, something that neither IMPLAN nor RIMS-II can do. The models vary by price and level of complexity with IMPLAN and RIMS-II as the lower-priced models (with IMPLAN considered more user-friendly due to its fully-functioning user interface program) and REMI being significantly more expensive and exhibiting a much steeper learning curve for inexperienced analysts.

Each model uses similar public data sources for local trade flows modeling, but while REMI and IMPLAN use regional production coefficients (RPCs) to estimate the pattern of local purchases, RIMS-II uses the location quotient method (Rickman, 1995). The location quotient method assumes "local demand is satisfied first" in a regional economy, and does not allow for cross-hauling (Rickman, 1995). Cross-hauling occurs when commodities are both imported and exported in the same region. In excluding cross-hauling, location quotient methods inflate regional multipliers, all else being equal

(Rickman, 1995). In contrast, RPC methods used by IMPLAN and REMI allow for cross-hauling and represent an open method of estimating regional purchases by commodity and industry. I-O models produce RPCs using econometric trade flow studies (that are sometimes quite dated), although recent updates to IMPLAN incorporate a gravity-based equilibrium model that estimates the proportion of commodity trade flow by local region. IMPLAN uses the Commodities Flows Survey from the Bureau of Transportation Statistics for trade flow estimates. The Bureau of Transportation Statistics conducts the Commodities Flows Survey every five years, and the IMPLAN model updates trade flows data each year for supply and demand by regional economy (Lindall, 2005).

Comparing Prominent Economic Impact Models

While there is limited research about the differences in results generated by the predominant non-survey based I-O models, the studies that exist have mostly concluded that when researchers properly benchmark the models, there are only minor differences in multipliers generated by the programs. The default versions of the programs vary depending upon the regions studied. In a highly cited study using benchmarked versions of IMPLAN, REMI, and RIMS-II, Rickman (1995) states, "after benchmarking…the multipliers of the three models generally were statistically indistinguishable from each other" (p. 372). For the default model settings, Rickman (1995) found IMPLAN's multipliers (particularly employment) to be higher than both REMI and RIMS-II. In another comparison study, Crihfield (1991) found REMI's multipliers were "32 percent

to 57 percent larger than IMPLAN's" (p. 13) and the "output-to-employment ratio for REMI was over twice as large as the Census benchmark" with IMPLAN's output 17 percent lower than the Census benchmark (p. 14). In another study evaluating tourism impacts, Bonn (2008) found REMI's multipliers were typically higher than IMPLAN's, with the study suggesting that REMI's highly aggregated industry sectors as a possible explanation for the variance.

While no study has concluded definitively which non-survey I-O model is the "best" to use, researchers generally agree that the best program for an analyst depends upon budget resources, specific project application and the knowledge, background, and expertise of the analyst. There may be no definitively superior non-survey I-O model, but the high costs of REMI (ranging from approximately $30,000 to $50,000) limit many institutional users from using REMI. Because of the low cost of IMPLAN ($280 per county or $1,850 per state), its user-friendly interface, and the more robust nature of its regional modeling capabilities as compared to RIMS-II (especially in the area of modeling regional trade flows), more public and private organizations use the IMPLAN model for economic impact studies than either RIMS-II or REMI.

Limitations of I-O Models

There are several known limitations of I-O models, particularly as they relate to regionalization of data. Certain methods used in I-O models, such as RPCs to measure regional trade patterns, provide estimates of regional economic impacts based upon assumptions that may not apply to every firm in a local economy. I-O analysis assumes

complete homogeneity in inputs and outputs, regardless of firm size or technology. Thus, the underlying basis for I-O analysis is the construction of regional estimates for the "average" firm (Stevens, 1988). To the extent that any given firm significantly deviates from the "average," I-O estimates based upon the average firm could be inappropriate for the measurement of a unique firm's economic impact. Stevens (1988) recommends surveying major regional industries in order to validate regional model estimates.

I-O models also estimate economic impacts on the assumption that there are no supply constraints or changes that occur with either prices or wages because of projects impacts. For smaller scale impacts, this assumption may be defensible. For larger impacts, or cumulative impacts that occur over time, price and wage changes are obvious threats of measurement error in I-O models. To the extent possible, any regional economic impact study should incorporate available supplemental data for the regional economy in order to substantiate some of the assumptions made in the base I-O models or perhaps modify some of the model's assumptions.

<div align="center">Tourism Impact Studies</div>

Because of the potential benefits of tourism related to regional economies, there is a large volume of tourism-related economic impact studies. In 2003, tourism represented a total direct and indirect employment of 7.9 million in the United States, and contributed to $285 billion in gross domestic product (Bonn, 2008). While the tourism industry can become a viable industry for a regional economy, there are several factors that

researchers and policy makers should consider when evaluating tourism-related economic impact studies.

As the starting point for evaluating tourism impacts, analysts must be able to accurately determine how many visitors will come from outside and inside the region. In general, analysts should exclude local visitors from tourism-related economic impact studies because local visitors would have typically contributed to the local economy with or without a subject tourism event. In the case of amateur sports tournaments, however, visitors inside the region will attend these tournaments somewhere and, if they attend these tournaments outside of the local region, there is a net loss in economic activity. Therefore, building a sports complex inside a region helps to capture some of the leakage that occurs when residents travel to sports complexes in other regions. The impacts of local tournament visitors are typically lower because of the lack of spending in certain categories such as lodging, and thus analysts should have separate spending assumptions for local and non-local visitors in economic impact studies. I will discuss this concept further in the methodology chapter.

Errors made in tourism surveys and measurement of tourism spending have a ripple effect in an I-O model, and can significantly affect the model's results. Tourism studies, and the risk I-O model users accept when using flawed survey and measurement methods, are the epitome of the phrase "garbage in, garbage out." By adhering to certain principles in the academic literature regarding how to properly measure the economic impact of tourism, analysts can mitigate potential errors.

Tourism studies require certain basic components including visitor counts, visitor spending, types of visitors and trip purpose, and a model to measure the economic impacts resulting from visitors (Loomis, 2006). Any measurement errors made in these components can lead to significant errors in the overall economic impact study. Methods for measuring visitor counts will vary largely upon the type of event and whether or not the study is prospective or retrospective. Retrospective studies have the advantage of using on site visitor counts or ticket/turnstile counts (to the extent such conditions exist). Prospective studies cannot benefit from these methods, and thus must rely upon past experience or studies for similar events, or use other reasonable methods to determine tourism demand. For obvious reasons, retrospective studies are preferable for accurate survey results, but economic impact studies are typically performed prior to a tourist event and usually for the purpose of justifying public or private investment. For prospective studies, it is reasonable for analysts to use a range of high and low estimates for the necessary variables (e.g., visitor counts, spending by visitor).

Analysts frequently make errors in tourism impact studies including flawed survey methodology, overestimating local resident spending, overestimating employment growth for short-term tourism impacts, and using gross retail receipts as the economic impact measure for retail sales (Crompton, 2006). Crompton (2006) states that in most cases, researchers should include only non-local residents in tourism impact studies. There are some exceptions, particularly if local tourism keeps local residents in town when they would have left the area to attend a similar event elsewhere. Amateur sports

tournaments would fit into this category of events where analysts could include at least some economic benefits from local residents in impact studies. Amateur sports tournament participants and their families travel to tournament complexes on a consistent basis, and sometimes across great distances. If project sponsors create a sports complex in town that meets the demand for some local tournament-goers, and local families that would have travelled elsewhere instead remain in town, then some of the local resident spending related to the tournaments stays within the local economy instead of leaking outside the area. However, these local visitors will have lower per party spending given that they are not likely to make significant expenditures on lodging and transportation.

Tourism-Related Employment Growth

Analysts often estimate employment growth in tourism-related economic impact studies, and while sustained visitor counts certainly can lead to increased job growth, short-term events are not likely to create permanent jobs. For instance, large sporting events might need additional service industry staff during the course of the event, but it is unlikely for businesses to hire new employees for limited duration events (Crompton, 2006). Businesses are more likely to increase hours for existing employees, or perhaps hire temporary employees to meet temporary service demands. For tourism to have a lasting effect on employment growth there must be a sustained demand for additional goods and services. Whether the sustained demand is year-round or seasonal, there has to be a pattern of increased service demand to stimulate businesses to increase employment.

Accounting for Intermediate Purchases: Retail Margins

When visitors purchase retail goods, the retail "margin" is the retail price less the producer price (i.e., manufacturer cost) and transportation costs. It is important for researchers to account for retail margins in economic impact studies, and not overstate the value of retail sales. Retail margining in an I-O model applies the retail margin value to direct spending inputs in the I-O model instead of the gross retail sales price. The retail "markup" is the real value created when a customer purchases clothing, souvenirs, or other retail goods in the course of a trip. If a tourism economic impact study uses the gross sales price of retail goods purchased as the direct economic effects, the direct, indirect, and induced economic benefits to the region will be overstated.

Time-Switchers and Casuals

One of the substantial errors made by analysts in tourism economic impact studies is the inclusion of time-switchers and casuals (Crompton, 2006). There are many reasons why tourists visit certain locations, and it is generally not appropriate to include all visitors that attend an event in an economic impact study. Time-switchers are tourists who otherwise were planning a trip to a given location, and change their schedules to accommodate a specific event. Casuals are visitors who were already visiting a specified location, and happened to visit the subject tourist event/attraction. The case against including time-switchers and casuals in impact studies relates to the very purpose of measuring the economic impacts of tourism. If a tourism impact study's purpose is to evaluate the "stimulated" economic effects of a tourism event, analysts should not

include visitors that were already in the area for other purposes or visitors who changed their travel schedule to accommodate an event schedule in an area they already planned to visit. No real economic impact occurs in the case of either time-switchers or casuals.

Tourism Surveys

Estimating visitor spending is critical to the measurement of tourism-related economic benefits, and it relies largely on the use of surveys. Effective surveys include questions for party size, purpose of trip, local or non-local status, length of stay, and disaggregated spending by category (Stynes, 1999). Researchers should disaggregate survey data by location in the event that visitors are traveling to multiple locations in the region. Stynes (1999) suggests that spending detail should at minimum include lodging, food and beverage (both restaurant and groceries separately), transportation (both auto-related and public transportation separately), recreation and entertainment fees, souvenirs, and other retail purchases. Disaggregating these expenditures provides a better estimate of the direct, indirect, and induced economic benefits relative to the uniqueness of each of the industries impacted by the various spending categories.

The timing and format of surveys for measuring visitor spending are also important, and the academic literature emphasizes limiting the time that elapses between events and conducting surveys. Wilton (2006) states that recall bias can cause errors in visitor spending measurement when significant amounts of time elapse between trips and surveying. Stynes (1999) recommends against using telephone surveys because of the difficulty associated with estimating expenditures without spending categories in front of

the surveyed individuals and because of the tendency for individuals to report the most recent trip taken, instead of the trip in question.

Conclusion

This chapter provided a summary of the important academic contributions to the field of economic impact analysis, regional I-O models, and economic impact analysis concepts specific to the tourism industry. Economic impact analysis is part art and science. The basic design of I-O models, while highly technical and mathematical in nature, required great ingenuity and a creative-mind to devise methods to model economic impacts. The science of economic impact analysis, and in particular I-O models, lies in the inter-industry linkages, and economic snapshots provided by the national I-O tables and the resulting regional tables and matrices that IMPLAN and other regional I-O models incorporate in their programs. While there is a science to economic impact analysis, it is by no means an exact science. In the hands of an inexperienced analyst or a consultant relying on the inexperience of the consumers of economic impact analyses, the results of economic impact studies can be incredibly misleading and potentially contribute to misguided policy decisions. The results of an economic impact analysis are only as reliable as the methods used to produce the study.

Economic impact analysis has come a long way since its initial development in the early 20th century. For a relatively low cost, a number of third-party data programs can quickly produce regional modeling results with sophisticated social accounting methods that were not possible decades ago. The primary insight from the academic

literature on economic impact analysis and I-O models is that with adequate training in I-O analysis and a dedicated commitment to empirically supported research methods, analysts and researchers can achieve reasonable economic impact estimates. Specific to tourism economic impact studies, the academic literature stresses the importance of accurate visitor counts, reliable visitor spending data, and research-supported survey methods to collect the data necessary to estimate project impacts. Given the exponential factors inherent to I-O models and the ripple effect of direct spending impacts, analysts and researchers should carefully evaluate the research methods in I-O analysis at every stage of an economic impact study. Without such caution, the results of economic impact studies are worth very little to public policy decision-making.

Chapter 3

METHODOLOGY

This chapter discusses the methodology used to measure the economic benefits and costs of the Placer Valley Sports Complex. The chapter begins with a discussion of the survey-based data collection methods used to provide the basic inputs necessary for studying the economic benefits of the sports complex. The following section discusses the methods used to study the economic benefits of the sports complex through the IMPLAN model. This chapter also discusses the data collection methods I used to estimate the costs of the sports complex. Because the data collected in this thesis come from secondary sources, this chapter will discuss the background of these secondary data sources, including methods used by the originators of the primary data. I encountered several methodological errors with certain secondary data sources and this chapter discusses the techniques that I used to "massage" the secondary data and supplement with other data sources.

Survey Data

One of the primary requirements for beginning a tourism-based economic impact study is an accurate measurement of visitor counts and spending by visitor and category. In order to estimate visitor counts at the sports complex, this thesis uses the visitor counts as estimated in the sports complex feasibility study with certain noted modifications and assumptions (Ripken Design, 2011). Ripken Design estimated visitor counts in the feasibility study using a top-down approach that first estimated the number of tournament

teams the sports complex could host, then estimated the players, coaches, and spectators based upon average visitor counts relative to the team counts. Ripken Design estimated the ratios for teams to players, coaches, and spectators based upon previous tournament operation experience. Coaches-to-team ratios vary between two to three coaches per team based upon the type of sport. Ripken Design also estimated spectator count ratios based upon averages established from past tournament operation experience, and are an average of 2.5 spectators per player or coach. Thus, Ripken Design assumes that the average traveling party will be 3.5 persons (Ripken Design, 2011). I will verify these estimates by comparing visitor spending surveys conducted by other researchers in amateur sport tournament economic impact analyses.

To account for lower team counts in the first two years of sports complex operation and the gradual increase of tournament hosting, Ripken Design assumed 40% of full-team capacity will visit the sports complex in year one, 60% in year two, and 75% in year three and in the future (Ripken Design, 2011). Because of the relative uncertainty of the actual team counts the sports complex may attract, I will perform economic impact estimates based upon low-range estimates (40%), mid-range estimates (60%), and high-range estimates (75%). Using the range of visitor counts, I will estimate the economic benefits of the sports complex at various levels. Policy makers can use these estimated benefit ranges in their decision-making process, which addresses the uncertainty of actual visitor counts.

In addition to visitor counts, I need estimated visitor expenditures by category to model the economic impacts of the sports complex. To estimate these expenditures, I will partially use secondary data collected by Ripken Design at previous amateur sports tournaments. Ripken Design collected these survey data on-site with spending categories for lodging, transportation, food/beverage, entertainment, shopping, event-related expenses, and "other" expenses. The surveys themselves are proprietary data not publicly disclosed and thus I do not have access to information such as survey response rates. However, Ripken Design disclosed that they conducted the surveys at three recent amateur sports tournaments with 223 respondents (Ripken Design, 2011). In the section below, I will discuss the limitations of using this data, as well as the methods I will use to mitigate the measurement risks involved with using this data.

Data Limitations

One concern I have with using the spending categories in the Ripken Design survey data is the level of data aggregation and the inclusion of "other expenses." In an ideal tourism-based economic impact study, analysts would disaggregate the food/beverage category into dining and grocery categories. Ideally, analysts would also disaggregate the transportation category into public transportation and auto-related categories (with personal and rental car categories listed separately). The highly-aggregated data in certain categories pose some methodological issues with respect to modeling the economic impacts through the IMPLAN program, but unfortunately most visitor spending surveys aggregate all food and beverage spending. For purposes of this

thesis, I will assume that the majority of visitor spending in the food/beverage category are dining expenses.

Another methodological issue with the survey data is the lack of data by visitor type. Spending patterns for local versus non-local visitors vary greatly, particularly in the lodging and transportation categories. Ripken Design's feasibility study assumes the same per-person spending regardless of visitor residence location, and this is simply not a valid assumption. To correct this methodological error, I will disaggregate spending by visitor type making assumptions that establish estimated spending by visitor type. I will use visitor spending data for non-local visitors mostly in raw form, with the exception that I will remove the "other expenses" spending data because of the ambiguity of this expense category and inability to use these data in an economic impact model. I will more significantly adjust estimated local visitor spending by deleting the lodging, transportation, and other expenses categories. I will delete lodging expenses because local visitors are not likely to make expenditures on lodging for a local tournament. I will delete transportation expenses because I assumed that any transportation-related costs for local visitors would be relatively minor. Although there may be some limited transportation related expenditures made by local visitors, particularly those just outside of the immediate area, there is no known data to estimate these costs. This assumption runs the risk of understating project benefits, but does so in a manner that significantly reduces the risk of overestimating transportation-related expenditures. In addition to the

removal of lodging and transportation spending for local visitors, I will delete the other expenses category for the same reason mentioned earlier.

Another limitation of the Ripken Design data is the sample size of the data and unknown response rates. According to visitor estimates from Ripken Design, an average baseball tournament could host between approximately 300 and 1,000 visitors (depending on the number of teams). Based upon this assumption of average tournament visitor counts, and the 233 survey respondents from three separate tournaments, Ripken Design surveyed somewhere between 8 to 26 percent of total tournament visitors in the survey data provided. Obviously, there is a large difference between the high and low end of these estimates. For obvious reasons, increasing the percentage of survey respondents reduces measurement error and creates more accurate visitor spending estimates.

Data Alternatives

I considered several alternatives to using the Ripken Design survey data used in this thesis, including conducting primary survey research using ideal survey methods supported by the academic literature. I rejected this alternative because of the cost and time involved with conducting such research in the context of this thesis. The sports complex sponsors should consider conducting local visitor spending surveys, and I will discuss this recommendation in the final chapter. As a hybrid approach between using Ripken Design's data outright or conducting my own primary research, I will compare Ripken Design's visitor spending data against other publicly available visitor spending surveys. Researchers have prepared a number of economic impact analyses for amateur

sports tournaments in the past, and I will compare their results against the Ripken Design data in the Results and Analysis chapter.

While using other secondary visitor spending data addresses the issues of sample size, there are no perfect visitor spending surveys. Researchers and analysts have frequently reported visitor spending in highly aggregated form, even to the point of only reporting lodging and "other spending" categories. Data reported at such an aggregated level does not provide an analyst with the inputs required to use an I-O model and reasonably estimate the effects of expenditures among inter-industry linkages.

While I was unable to identify alternative survey data that fully met the needs of this thesis, I was able to identify nine separate visitor spending surveys at amateur sports tournaments across the United States. In the Results and Analysis chapter, I will display the results of these studies, and draw comparisons from the visitor spending reported in these studies against the visitor spending reported by Ripken Design. The results of my comparative analysis will form the basis for my revised estimates of visitor spending at the Placer Valley Sports Complex.

Measuring Economic Benefits – IMPLAN

I purchased an individual license of the 2009 IMPLAN data package to measure the economic impacts associated with the sports complex. The study area I selected for the I-O analysis is Placer County because the primary economic impacts related to the sports complex will affect Placer County based upon the proposed location of the complex in Placer County. The data used for economic impact analysis are from

IMPLAN Version 3.0 for Placer County (MIG, 2010). IMPLAN data contains regionalized I-O and social accounting matrices that model inter-industry linkages and institutional expenditures. The regional purchase coefficients, which estimate local purchasing in the model (in this case for Placer County), are estimated by the IMPLAN program using the trade flows method. The IMPLAN program models the indirect and induced economic impacts based upon the direct inputs specified by the user.

In order to generate estimated economic impacts for employment, income, value added, and output, the IMPLAN program requires user-defined inputs. In this study, the inputs are the direct spending estimates from the visitor survey data. Each of the spending categories in the survey data will be input into IMPLAN by the corresponding industry sector. The 2009 IMPLAN data supports 440 separate industry sectors, which correspond to sectors identified in the North American Industrial Classification System (NAICS) (MIG, 2011). IMPLAN aggregates industry sectors somewhat more than NAICS industry sectors.

I will calculate spending data for both non-local and local visitors (by the estimated per-person expenditures) and input into the IMPLAN program at aggregate. While I will disaggregate non-local and local visitor expenditures in order to calculate direct impact estimates, it is unnecessary to disaggregate this data for input into IMPLAN. In the Results and Analysis chapter, I will display the number of local and non-local visitors, as well as each group's spending pattern.

The various accounts used in IMPLAN data are viewable in raw form, and the user can modify many assumptions in the social accounting matrices and I-O matrices. To the extent that data are available that can supplement the data in IMPLAN's base package, such as specific industry survey information, the academic literature recommends that analysts use this outside data to better calibrate the base IMPLAN model data. Substantial modifications to the base IMPLAN data are largely outside the scope of this thesis because of the complexity, and outside data sources required. While supplementing IMPLAN's data with industry survey data would be an ideal situation, this data is not readily available and would be a costly expense to prepare. The primary reason researchers developed non-survey I-O models, such as IMPLAN, was to provide analysts an alternative to cost prohibitive survey-based models.

Given the relatively simple model proposed for analyzing the economic impacts of the sports complex (e.g., lack of significant industry changes proposed or adding firms to the regional economy that significant differ from the average in the region), I do not anticipate that using primarily off-the-shelf IMPLAN data will significantly impact the results of the estimated economic impacts. However, I will verify certain IMPLAN data against public data sources, such as the data on in-commuting in the social accounting matrices to verify IMPLAN's base data represents an accurate picture of the labor force in Placer County. I will note any calibration of the IMPLAN base data file in the results and analysis chapter.

I will not model the economic impacts of construction for the sports complex in this thesis. While construction certainly creates economic impacts and generates additional jobs and income in a local economy, the construction industry typically imports a significant amount of labor and commodity inputs from other areas and construction impacts are typically short-lived. Construction firms often originate in other regions, thus direct profits from the construction activity benefit other areas. Workers also often originate from other regions, and thus the increased income they would receive from construction of the sports complex would likely benefit other regions. Perhaps most importantly, once the construction is complete, any jobs or income created through the project end, and there is no lasting benefit to the region directly from the construction industry. I add one caveat to this statement and that is to the extent that Placer Valley Tourism had identified Placer County-based contractors and designers for the sports complex, it would be more appropriate to estimate the one-time benefit of the construction related impacts. However, information on contractor and designer business locations is not currently available. Should this information become available later, future analysts should consider modeling construction-related impacts related to the sports complex.

IMPLAN Data Limitations

While I discussed the general limitations of IMPLAN and I-O models at length in the Literature Review chapter, I reemphasize that I-O models, including IMPLAN, only provide a snapshot of a regional economy for a one-year period. In addition, due to the

timing of annual release schedules for public data sources by the BEA, Census Bureau, and other data reporting agencies, even the most recent I-O models are typically two years behind. The 2009 IMPLAN data used in this thesis, for example, is the most recent package available. While I intend to model the economic benefits of the sports complex and provide an estimate of ongoing benefits, dynamic changes that occur over time in Placer County could significantly affect the ongoing economic benefits resulting from the sports complex.

<div align="center">Cost Measurement</div>

Measurement of the design and construction costs of the project relies upon data in the sports complex feasibility study (Ripken Design, 2011). I note that the project costs in the feasibility study are only estimates, but they are the best available information specific to the site-specific characteristics and proposed design of the Placer Valley Sports Complex. I do not assume public infrastructure costs in this thesis because the sites identified for the sports complex are in developed areas with sufficient public infrastructure already available. Ripken Design estimated project-related impact and design fees in the construction estimates. I will estimate financing costs for the project using a range of current municipal bond rates and a debt service calculator.

I will discuss nonmonetary costs for the project in the results and analysis chapter, but I note here that there are no simple methods to measure these costs. Nonmonetary costs are social or environmental costs such as air or water quality, loss of open space, traffic impacts, and other development impacts. These costs are difficult to quantify yet

they play an important role in public policy decision-making. To the extent that I can reasonably infer the impact of certain social or environmental costs, I will discuss them in a qualitative manner in the results and analysis chapter.

Chapter 4

RESULTS AND ANALYSIS

This chapter details the results of the data analysis methods I used to measure the

economic benefits of the Placer Valley Sports Complex and describes the costs of the

project. The chapter begins with a discussion of visitor count and spending estimates at

the proposed sports complex, which includes a comparative analysis of visitor spending

in other amateur sports economic impact studies. The chapter continues with an analysis

of the economic benefits of the project that I estimated using the IMPLAN model. The

final section in this chapter analyzes the financial and social costs of the project.

Estimated Visitor Counts

I estimated the visitor counts at the proposed sports complex in part by using data

from the Ripken Design (2011) feasibility study. I used Ripken Design's estimates for

the number of annual tournaments and the numbers of teams that are likely to attend the

sports complex as a starting point in my analysis. Ripken Design (2011) assumes, based

upon their market assessment of Placer County, that 40% of potential visitors will visit

the complex in the first operational year and 75% will attend by year three and in the

future. Because Ripken Design provided inadequate data in the feasibility study to

support their assumptions, and thus I decided to use sensitivity analyses to address

several of the unknown variables that affect the economic benefits of the project. In

order to address the uncertainty of the exact number of teams that will attend the sports

complex each year, I used three team capacity scenarios to model the economic impact of

the sports complex. I assumed 75% capacity for the high-range estimate, 60% for the

mid-range estimate, and 40% for the low-range estimate.

In order to account for the difference in spending patterns among local and non-

local visitors to the complex, I also needed to estimate the number of local and non-local

visitors. I began estimating the local and non-local visitor distribution by using Ripken

Design's market research findings on the location of potential tournament teams. I

determined that 80.5% of visitors at the Placer Valley Sports Complex would be non-

local and 19.5% would be local visitors. However, because I was uncertain how accurate

Ripken Design's market research was, and I did not have any specific data to support

their market findings, I used a range of visitor location assumptions in the IMPLAN

model. Specifically, I used Ripken Design's 80.5% non-local visitor assumption for a

high-range estimate, 65% for a mid-range estimate, and 50% for a low-range estimate. I

note that non-local teams contribute the largest share of new local spending. Figure 4.1

lists the estimated annual visitor counts by local and non-local visitors.

Figure 4.1: Estimated Visitors by Capacity Assumptions

Capacity %	40%	60%	75%	100%
Local	7,758	11,636	14,545	19,394
Non-Local	32,025	48,037	60,047	80,062
TOTAL	39,782	59,674	74,592	99,456

Methodologically, I was concerned about using Ripken Design's visitor spending

estimates because they did not fully disclose their visitor spending survey methods.

Additionally, Ripken Design conducted the surveys at only three tournaments and each

tournament was located outside of California. In order to increase the validity of my

estimated visitor spending inputs, I examined visitor spending surveys conducted by

other researchers and compared the results of these surveys to the Ripken Design visitor

spending estimates. My objective for this comparison was to determine if Ripken

Design's per-person visitor spending patterns were consistent with the results of other

visitor spending surveys for amateur sports tournaments. I compared nine separate

amateur tournament visitor spending surveys conducted by researchers in multiple

locations across the United States. My analysis concluded that the Ripken Design visitor

spending patterns were somewhat higher, and yet substantially similar to the other

surveys with some exceptions. I report the results of my comparative visitor spending

analysis in Appendix A.

The primary difference in visitor spending between Ripken Design's surveys and

that of the other surveys I researched was in entertainment spending, with Ripken

Design's per-person entertainment spending substantially higher than the other surveys.

The Ripken Design estimated per-person shopping expenditures were also significantly

lower than many of the other visitor spending surveys I analyzed. To address the variable

entertainment and shopping spending in the visitor spending surveys that I analyzed, I

used a high and low range[1] of entertainment and shopping expenditure assumptions in the

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[1] For per-person entertainment spending, I estimated $10 for the high-range and $5 for the low-range. For per-person shopping expenditures, I estimated $15 for the high-range and $7.50 for the low-range. I made these estimates based upon my analysis of the comparative visitor spending surveys in Appendix A.

final IMPLAN model. Figure 4.2 below compares the original Ripken Design visitor

spending estimates with my revised estimates.

Figure 4.2: Visitor Spending Estimates

Visitor Spending (per person, per day)							
	Lodging	Transp.	Food/Bev.	Entertainment	Shopping	Event-Related	TOTAL
Original	$25.71	$15.42	$28.72	$29.91	$10.49	$7.14	$127.98
Revised	$25.71	$15.42	$28.72	$10.00	$15.00	$7.14	$101.99

Economic Benefits – Results of the IMPLAN Model

Using the estimated visitor counts and the per-person spending assumptions I

discussed in the previous section, I used the IMPLAN model to input visitor spending

data into the corresponding IMPLAN industry sectors and generated estimated economic

impacts for the proposed Placer Valley Sports Complex. Before inputting any spending

data into the IMPLAN model, I investigated the off-the-shelf Placer County dataset in

IMPLAN to verify that certain economic assumptions (e.g., commuting patterns, industry

employment patterns) in the IMPLAN model were consistent with public data in the

Census Bureau's County Business Patterns (CBP) and the California Employment

Development Department's Quarterly Census of Employment and Wages (QCEW) (U.S.

Census Bureau, 2011; California Employment Development Department, 2011). I did

not identify any significant variances between the unaltered Placer County IMPLAN

dataset and data reported for Placer County in CBP and QCEW, and therefore I made no

calibrations to the off-the-shelf IMPLAN data.

I was not surprised to find IMPLAN's off-the-shelf dataset significantly correlate with public data sources because IMPLAN's model uses CBP and other public data sources to extrapolate economic conditions for regional economies. Additionally, while any input-out model faces challenges with modeling industry changes that involve firms or commodities that significantly vary from industry averages, the commodities and industries affected by the Placer Valley Sports Complex are less likely to deviate from the regional industry average as opposed to other industries such as manufacturing or information technology where there are significant differences in size, scale, and technology among firms in these industries. Thus, the inter-industry linkages and consumer purchasing trends in IMPLAN's base model for restaurants, gas stations, hotels, and general retail stores are less likely to produce unreliable results as compared to industries or firms that significantly deviate from regional market trends.

The Results

The annual economic benefits of the proposed sports complex, related to visitor spending, range from $3.0 million to $7.2 million in value added[2] (i.e., gross regional product) and between 60 and 134 jobs according to my results using the IMPLAN model[3]. Figures 4.3 and 4.4 (below) report summaries of the low and high economic impact estimates and employment impact by industry, respectively. The economic impact estimates vary based upon the low-range, mid-range, and high-range visitor counts with respective 40%, 60%, and 75% visitor capacity assumptions. The economic

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[2] Assumes current year dollars.
[3] See Appendix B for a full summary of all economic impact scenarios.

impact estimates also vary based upon the estimate ranges I used for local and non-local

visitors as well as high and low entertainment and shopping estimates. I caution readers

against using the "output" estimates as the total measure of economic impact. Output

inherently double-counts the sales of intermediate goods used to produce final products,

and overstates the net economic benefits to the region. Value added is a more appropriate

measure that output because it does not double-count intermediate and final product

sales.

Figure 4.3 – Economic Impact Summary

Highest Estimate

	Employment	Income	Value Added	Output
Direct	97.8	$2,557,700	$4,005,888	$6,940,020
Indirect	15.2	$726,803	$1,340,311	$2,249,980
Induced	21.2	$970,767	$1,806,187	$2,839,005
TOTAL	134.2	$4,255,270	$7,152,385	$12,029,005

Lowest Estimate

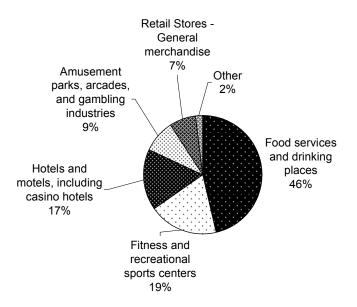|	Employment	Income	Value Added	Output
Direct	44.3	$1,088,151	$1,634,471	$2,903,896
Indirect	6.3	$300,050	$567,728	$947,300
Induced	8.9	$408,223	$759,517	$1,193,833
TOTAL	59.5	$1,796,424	$2,961,716	$5,045,029

Figure 4.4 – Employment Impact by Industry

Caveats to the IMPLAN Results

The IMPLAN model assumes constant returns to scale and a linear production function, and thus a one percent increase in visitor spending inputs generates an approximate one percent increase in estimated economic benefits. Therefore, the economic impacts in the low-range and high-range estimates are directly proportional to the difference in visitor spending inputs in each estimate range. I also note that the IMPLAN model assumes a balance between industry supply and demand at all times, and thus the IMPLAN model assumes that any increase in consumer demand requires additional production inputs such as labor and commodities.

While the IMPLAN model estimates jobs created based upon a sophisticated synthesis of economic data, marginal increases in consumer demand (particularly short-

lived or inconsistent increases) are unlikely to create new jobs. If businesses, particularly those in service industries which are the most affected by tourism projects, experience temporary increases in consumer demand (e.g., during sporadic tournament event weekends), these businesses are more likely to increase hours for existing employees or perhaps hire temporary help to satisfy consumer demand as opposed to creating new permanent jobs. Thus, while there may be a tendency for policy makers to rally around job creation estimates in economic impact studies because of the political benefits of "job creation," policy makers should carefully scrutinize the results of any economic impact study before citing potential job creation. In order for a tourism project to sustain higher levels of employment, there needs to be a sustained increase in consumer demand (i.e., sustained levels of visitors).

Another consideration for policy makers in the context of job creation is the quality of jobs created. The sports complex would affect many industries that employ low wage workers. Figure 4.5 reports IMPLAN's employee compensation (i.e., payroll and benefits) estimates by industry. Creating low wage jobs certainly benefits a regional economy, but none of these jobs pay a living wage. Regional economies need a mix of jobs in various industry sectors and wage scales, and thus a region cannot only focus job creation efforts on low-skill, low-wage service industry jobs if policy makers in the region desire a diversified economy. A diversified local economy requires jobs for all members of the local labor force at various skill, education, and experience levels.

Figure 4.5 – Employee Compensation by Industry (2009 annual averages)

	Food Service	Fitness & Recreation Centers	Hotel	Amusement Parks, Arcades, and Gambling	Retail Shopping	Gas Stations
Wages & Benefits	$20,951	$17,020	$31,974	$30,005	$31,944	$25,758

Financial Costs

According to Ripken Design (2011) cost estimates, design and construction of the Placer Valley Sports Complex will cost between $25.5 and $32 million. Ripken Design's preliminary operating model indicates that sports complex revenues will be sufficient to fund annual operations costs and thus the complex will not require additional public or private subsidies for ongoing maintenance and operation of the complex. Ripken Design's preliminary operating model, based upon the 40% team capacity scenario, estimates very slim net complex revenue after expenses (less than $10,000 on an $884,000 operating budget). Under the 60% and 75% team capacity scenarios, Ripken Design's operating model assumes much healthier net revenue ($268,000 and $465,000, respectively). The financial sustainability of the sports complex depends upon team counts. A successful sales and marketing team could mean the difference between net revenue and revenue deficits. Also, if jurisdictions in the Greater Sacramento region create competing facilities, such as the complexes in Elk Grove and Folsom, these facilities could potentially threaten the sports complex's fiscal sustainability.

In addition to funding initial construction costs, project sponsors will also need to replace the artificial turf approximately every 10 to 15 years, depending on field

condition. Over the life of a 30-year bond, project sponsors would need to replace each field two or three times. For the 12 fields proposed by Placer Valley Tourism (PVT), each replacement cycle would cost approximately $5.3 million. To fund these costs, PVT will have to finance field replacement costs, the sports complex itself will have to generate sufficient annual net revenue for capital replacement funds, or PVT will have to use a hybrid of the two approaches. If the complex operator had to replace the fields every 10 years, the operator would need $530,000 in annual capital replacement funds. This revenue amount is unlikely for the complex given that even Ripken Design's high occupancy operating model assumes only $465,000 in annual net revenue. If the operator could replace the fields every 15 years, the operator would only need $350,000 in annual net revenue. Under the 15-year field replacement scenario, net complex revenue could fully fund field replacement assuming that the sports complex could attract enough teams to generate net revenue about half-way between the 60% and 75% occupancy operating models.

PVT could finance construction of the Placer Valley Sports Complex through a variety of methods, but the most likely methods will include either a business improvement district room-night fee increase for the member hotels in PVT, or a voter-approved increase in the transient occupancy taxes (i.e., hotel tax) in the cities of Roseville, Rocklin, and Lincoln. Either method could generate the amount of revenue necessary to fund estimated bond debt service payments, depending upon the level of fee or tax increases and the principal borrowing amount. Each city would need to increase its

current hotel tax rates to approximately 15%[4] to generate enough revenue for the high-end debt service payment estimates (see Figure 4.6 below). The current hotel taxes in Roseville, Rocklin, and Lincoln are six, eight, and ten percent, respectively. Alternatively, the hotels could also increase the business improvement district room-night fees from $1.50 in Roseville, and $1.00 in Rocklin and Lincoln, to approximately $7.50 per room night in all three cities. Figure 4.7 (below) shows the revenue estimates for both the hotel tax increase and room-night fee increase.

In terms of political feasibility, only the hotel room-night fee option makes sense. Placer County has a dominant conservative voting constituency, and a proposal to increase the hotel tax to the highest rate in the state, 15%, would almost assuredly fail. According to California City Finance (2011), the average hotel tax in California was 9.6% in fiscal year 2008-09. For the city of Roseville, a 15% hotel tax proposal would increase the current tax rate 250%. Even though hotel taxes do not typically directly affect local residents, a tax proposal of such magnitude would not likely be successful at the ballot box in any of the cities, and particularly in Roseville. However, if PVT could fund the sports complex with significantly lower debt service payments, more modest tax increase proposals could potentially succeed. Regardless of the final costs of the project, the hotel assessment revenue option is much more politically feasible, and it requires clear, up-front support from the hotels that stand to benefit from the sports complex.

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[4] I used the past year transient occupancy revenue each city reported in their 2011-12 budgets, and then calculated the amount of funding necessary to fund the $2.6 million high-end debt service payment estimate (City of Lincoln, 2011; City of Rocklin, 2011; City of Roseville, 2011).

Figure 4.6 – Project and Financing Costs

Project Costs ($ in millions)

	Low Estimate	High Estimate
Hard Costs	$18.5	$22.0
Soft Costs	$4.5	$6.5
Contingencies	$2.5	$3.5
Capital Replacement	$0.0[5]	$4.9[6]
TOTAL	$25.5	$36.9

30 Year Bond - Annual Debt Service Payments (whole dollars)

	Low Estimate	High Estimate
4% coupon	$1,474,668	$2,133,931
5% coupon	$1,658,812	$2,400,398
6% coupon	$1,852,549	$2,680,747

To estimate the approximate annual debt service payments for the sports complex, I used a bond finance calculator and assumed coupon rates at four, five, and six percent (Cypress Capital Corporation, 2011). See Figure 4.6 for a summary of high and low estimates of project costs and annual debt service payments. Ripken Design (2011) estimated the hard costs, soft costs, and contingency costs, and I estimated capital replacement costs.

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[5] I calculated "low" capital replacement funding by assuming that the complex operator would replace the fields every 15 years (i.e., two replacement cycles over a 30-year bond at $5.3 million each cycle), and that the complex would generate $366,500 in annual net revenue (half-way between the 60% and 75% team occupancy models).

[6] I calculated "high" capital replacement funding by assuming the complex operator would replace the fields every 10 years, that the complex would generate $366,500 in annual net revenue, and that the 30-year bond would finance the capital replacement funding gap.

Figure 4.7 – Revenue Estimates

Hotel Tax Revenue Estimates

TOT Rate	10%	12%	14%	15%
Roseville	$1,000,000	$1,500,000	$2,000,000	$2,250,000
Rocklin	$97,700	$195,400	$293,100	$341,950
Lincoln	$0	$17,022	$32,000	$40,000
TOTAL	$1,097,700	$1,712,422	$2,325,100	$2,631,950

Hotel Assessment Revenue Estimates

Room-night charge (net increase)	$4.00	$5.00	$6.50	$7.50
	$1,200,000	$1,700,000	$2,400,000	$2,641,059

Social and Environmental Costs

The social and environmental costs of the Placer Valley Sports Complex are

difficult to quantify and any attempt to quantify these costs is outside the scope of this

thesis. However, this section addresses some of the social and environmental issues of

the project in a qualitative manner, and provides policy makers with some thoughts for

future consideration. The potential social and environmental costs of the project include

traffic impacts, air or water quality impacts, open space reduction, and other issues that

are difficult to quantify but are important for policy makers to understand because of the

potential harm that development projects can cause. Due to complexity, it is outside the

scope of this thesis to fully study the potential social and environmental costs of the

project.

The potential sites for the sports complex are on the fringe of existing

development, and benefit from existing infrastructure and significant distances from

existing residential land uses. This location advantage mitigates many of the potential

social costs of the project, including noise and light pollution. However, there may be some incidental traffic impacts related to complex visitors during peak times, but these impacts are unlikely to be significant on a regular basis[7]. Cities often require traffic studies (or reference previous studies) to model the expected traffic and road impacts related to development projects and identify any significant traffic issues. Cities also assess traffic impact fees on development projects as a funding mechanism for future traffic mitigation measures (i.e., road construction or expansion).

In the context of potential issues such as air and water quality, and open space preservation, the host cities have already zoned the sites identified by Placer Valley Tourism for the sports complex for either recreational or commercial land use. If Placer Valley Tourism never constructed the sports complex, developers could develop the sites with equal or even higher land use intensity. Thus, alternative land uses could potentially create higher social costs than the sports complex would. With any development project, policy makers should consider both the social and environmental costs of the subject project as well as the potential costs of alternative land uses.

There are always social costs involved in development projects because any increased land use, or loss of green space, changes the environment people live in and can negatively affect people's daily lives. Citizens, researchers, and policy makers

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[7] Based upon the visitor estimates I discussed earlier in the chapter, somewhere between 600 and 1,200 vehicles could potentially visit the sports complex on a large tournament day. Not every vehicle would necessarily enter and exit the sports complex at the same time because of unique game schedules for each team. The potential locations for the sports complex are in largely undeveloped areas with more than adequate road infrastructure and without significant traffic patterns, and thus I believe the traffic impacts related to the sports complex would be relatively minor, and would only occur during peak tournament operation on the weekends.

should always consider the full range of fiscal and social costs, and base their opinions on what social costs they are willing to pay for the economic benefits of development. However, for this process to work there must be a reasonable way to estimate these costs and benefits and an opportunity for public involvement. In California, the opportunity for public involvement is during public hearings, California Environmental Quality Act proceedings, land use entitlement hearings, and as a last resort, the courts.

Conclusion

In this chapter, I discussed the potential economic benefits, fiscal costs, and social costs of the Placer Valley Sports Complex. Based upon the research I conducted using the IMPLAN model, Placer County's local economy could benefit from a potential $3.0 to $7.2 million in gross regional product and between 60 to 134 jobs through the sports complex. I estimated the debt service payments for the sports complex from between $1.5 to $2.7 million annually over a 30-year period. Depending upon each city's political will to raise the hotel taxes, or the hotel industry's will to increase room-night fees, both funding alternatives are financially feasible. I noted that from a political standpoint, the hotel assessment option is the more feasible funding mechanism.

I also addressed some of the social cost issues in this chapter. While I noted that it is outside the scope of this thesis to fully investigate the social costs of the project, I explained that the social costs of the sports complex are unlikely to exceed the costs of other alternative land uses. In the next and final chapter, I will draw conclusions about

the facts and issues that I identified in this thesis, and provide recommendations for

future study and evaluation of the sports complex.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

In the final chapter of this thesis, I will discuss the findings and implications of

my analysis of the proposed Placer Valley Sports Complex. In this thesis, I introduced

the background on the sports complex, reviewed the relevant academic literature on

economic impact studies and tourism-based economic development, explained my

methods for studying the economic benefits of the sports complex, and provided my

analysis of the benefits and costs of the sports complex. In this concluding chapter, I will

discuss several methodological problems I have identified while reviewing the sports

complex feasibility study. I will also compare the costs and benefits of the project

through a net present value analysis. Additionally, I will make a preliminary

recommendation on the sports complex proposal, and suggest future study areas for

Placer Valley Tourism (PVT).

Comparing Costs and Benefits

I estimated that the annual economic benefits of the Placer Valley Sports Complex

(related to visitor spending) could range from $3.0 million to $7.2 million in gross

regional product, and between 60 and 134 jobs in Placer County. I also estimated that the

annual financial costs, related to construction and capital replacement, would range

between $1.5 million and $2.7 million per year[8]. To compare the costs and benefits of

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[8] Assumes a 30-year construction and capital replacement bond. Annual maintenance costs are
not included in these estimated costs, although the sports complex operating model already assumes
operational costs and revenue for annual maintenance and staff.

the sports complex, I estimated the net present value of the sports complex. Figure 5.1

displays my net present value calculations using a two percent cost discount rate. I used

my high-end debt service payment estimate for the costs (i.e., "worst case" cost scenario),

and a mid-range economic benefit estimate. Over a 30-year period, the cumulative

discounted cost of the sports complex is approximately $60 million, and the cumulative

economic benefit of the sports complex is approximately $152 million. The net present

value (NPV) of the sports complex, over a 30-year period, is approximately $92 million.

Figure 5.1 – NPV of the Sports Complex (mid-range economic benefits)

	Year				
	1	10	20	30	TOTAL
Costs*	$2,628,183	$2,199,146	$1,804,066	$1,479,962	$60,039,231
Benefits	$5,057,051	$5,057,051	$5,057,051	$5,057,051	$151,711,530
NPV	$2,428,868	$2,857,905	$3,252,985	$3,577,089	$91,672,299

Based upon my estimates of net present value in Figure 5.1, and the estimated

costs and benefits of the sports complex, PVT's investment in the sports complex could

positively affect the regional economy. However, if any of the assumptions I used to

estimate costs and benefits are incorrect, the net present value of sports complex

investment could be dramatically different. To illustrate this point, in Figure 5.2 I report

NPV calculations for the sports complex under the same cost assumptions in Figure 5.1,

but I assume that the benefits of the complex will be equal to the low-end estimate (i.e.,

$2.9 million annually). The assumptions in Figure 5.1 (i.e., $5.1 million annual benefits)

calculate a 153% return on investment for the project, whereas the assumptions in Figure

5.2 calculate a 48% return on investment. Both the low and mid-range benefit

assumptions result in net positive returns on investment, but the magnitude of the

investment return is significantly different depending on the benefit assumptions.

Figure 5.2 –NPV of the Sports Complex (low economic benefits)

	Year				
	1	10	20	30	TOTAL
Costs*	$2,628,183	$2,199,146	$1,804,066	$1,479,962	$60,039,231
Benefits	$2,961,716	$2,961,716	$2,961,716	$2,961,716	$88,851,480
NPV	$333,533	$762,570	$1,157,650	$1,481,754	$28,812,249

Benefit and Cost Uncertainty

I used several assumptions to measure the costs and benefits of the project, based

upon the information I had to make these calculations. If any of these assumptions are

incorrect, the financial and economic justification of the sports complex could be

substantially different. For instance, the construction and financing estimates I used are

only estimates, and final financial estimates are forthcoming from PVT and their

contracted agents. While I made good faith efforts throughout this thesis to consistently

provide a range of cost and benefit estimates, there is always the threat that PVT's cost

estimates are too low. Additionally, I measured economic benefits for the project using

data from Ripken Design on visitor counts, a number of third-party visitor spending

surveys, and IMPLAN model data. Whenever possible, I used sensitivity analysis in this

thesis to provide a "buffer" against potential measurement errors, but there is always the

possibility that visitor counts, visitor spending, and industry economic impacts could be significantly lower than I estimated.

Mitigating Uncertainty

While I used sensitivity analysis to address some of the problems of benefit and cost uncertainty for the sports complex, there are other mitigating measures that PVT could use to address project uncertainty that I discuss next. The most important of these mitigating measures is for PVT to conduct visitor-spending surveys at existing amateur tournaments in Placer County. There are a number of amateur sports tournaments held in Placer County throughout the year, and PVT could conduct visitor-spending surveys at any of these tournaments. While I was able to use previous visitor-spending surveys to extrapolate spending estimates, if PVT conducted local surveys consistent with guidelines in the academic literature, the uncertainty of visitor spending would be substantially lower. Local surveys would be specific to the conditions in Placer County, and would provide the best estimate of future visitor spending at the proposed sports complex.

Another measure PVT could take to minimize project uncertainty would be to study more extensively the regional sports team market. Ripken Design studied the location of potential tournament teams, but provided very little information on how it estimated team locations. Rather than accept Ripken Design's limited information on tournament team locations, I recommend that PVT further investigate how many non-local teams would be attracted to a sports complex in Placer County. The PVT hotels

should be particularly interested in this information because if the sports complex would not attract a significant amount of non-local visitors, the hotels would benefit very little directly from the sports complex. While I provided a range of local and non-local visitor estimates in my economic benefit calculations, a more accurate assessment of team locations should be a high priority for PVT in their project decision-making process.

To further address project uncertainty, PVT should further study the costs of the project before they make a project decision. In its feasibility study, Ripken Design provided a range of construction and design costs for the sports complex. At this stage in project development, PVT should have more accurate cost estimates prior to making a decision on the sports complex. Rough cost estimates are acceptable during a project's early phases, but as the Placer Valley Sports Complex is closer to final approval, financial feasibility takes center stage. To finance the sports complex, PVT needs approval from the voters in Roseville, Rocklin, and Lincoln to increase hotel taxes or PVT needs hotel owner approval to increase room-night fees. Either way, PVT needs accurate financial information to support their project-funding proposal. PVT also needs additional financing information to determine approximately what interest rate a sports complex bond would carry. Given the large anticipated costs of the project, coupon rates one or two points above PVT's estimates could significantly affect project feasibility.

Financial & Political Feasibility

PVT needs a politically viable mechanism to fund the sports complex, and a hotel tax increase in conservative Placer County is probably not the answer. Even though hotel

taxes shift the tax burden to outside visitors, tax increases are not popular in conservative communities. Therefore, without PVT's development of other alternatives, the most viable funding option for the sports complex is through the business improvement district room-night fees. This alternative still requires voter approval, but instead of requiring approval from two-thirds of voters in Roseville, Rocklin, and Lincoln, a room-night fee increase only requires a majority vote of the hotel owners in the three cities. Because the hotel owners have potential to gain significantly from the sports complex, it is likely they would support a room-night increase at some level. Whether or not the hotel owners would support an increase to $6.50 or $7.50 per room-night is unknown. To date, PVT staff have not presented any specific room-night fee increase proposal to the board. A majority of the hotel owners will ultimately determine what is financially feasible for a new sports complex.

I also note that PVT will need to reincorporate its organization under the Property and Business Improvement District Law of 1994 prior to financing the sports complex. The earlier Parking and Business Improvement Law of 1989, which PVT formed under, does not allow for bond financing. In order for PVT to form under the 1994 Law, the city councils in Roseville, Rocklin, and Lincoln will need to consent. While it is likely that each city council would approve PVT's new district formation, it is important for PVT to consider this obstacle as the sports complex project moves along. If any jurisdiction had a particular objection to the sports complex project, PVT could encounter significant political problems with forming the new business improvement district.

From a tax policy perspective, increasing the business improvement district room-night fee is probably the best (and most politically feasible) alternative. Sports complex visitors who rent hotel rooms in south Placer County pay increased room fees in exchange for their enjoyment of the sports complex. Other hotel visitors pay increased fees without a direct relationship to the benefits of the sports complex. Unless they visit the sports complex, residents of south Placer County do not have to pay for the costs of the complex but they still enjoy the residual economic benefits of the complex. Residents of south Placer County become free riders, but that is the case with nearly any tourism-based economic development project. Free riding on outside investment is the fundamental purpose of tourism promotion.

The hotel owners will pass along the cost of the fees to their customers, but at some price point, the hotel owners will be unable to further raise hotel rents because of the market effect that fee increases have on regional hotel rents. While the hotel owners will not pay the fees directly, their ability to raise rents at a certain level will diminish because of the fee increase. If more hotels develop directly outside of the Placer Valley hotel market, the level of fee increase becomes even more important for regional hotel competition.

There are a couple of issues with increasing the business improvement district room-night fees at all hotels in the Placer Valley and that is the nature of the fee increase as well as the geographical locations of the hotels relative to the location of the sports complex. Given that PVT proposes to increase the fees on a room-night basis, lower rent

motels will experience a greater percentage fee increase. Depending upon the level of fee increase, this equitable difference may be significant, and could potentially make certain "budget motels" less successful in the local economy. Additionally, the location of the sports complex will undoubtedly be closer to some hotels, and further away from others. From an equity perspective, it may make sense to increase fees higher for hotels closer to the sports complex, and lower for hotels further away from the complex. However, that raises the issue of hotel competition in a small local economy. If PVT raises all room-night fees to the same level at each hotel, market competition (inside the Placer Valley) is no longer an issue but certain hotels may receive a greater percentage of the room-nights related to the sports complex based upon their location.

<div align="center">Social and Environmental Costs: Do They Matter?</div>

I previously mentioned the potential social and environmental costs of the project, including traffic impacts, air and water quality impacts, noise impacts, and loss of open space. I believe that the social and environmental costs of the project will be minor, particularly compared to alternative commercial land uses. However, these social and environmental costs become more important for decision-makers as the net present value of the sports complex decreases. In other words, if project financial costs and economic benefits are closely balanced, social and environmental costs could affect net present value negatively. Therefore, it is important that the economic benefits of the project significantly exceed any quantifiable costs for the project. Based on my calculations of net present value (displayed in Figures 5.1 and 5.2), the economic benefits significantly

exceed the costs of the project, but that could quickly change with an increase in construction costs or lower than anticipated economic benefits.

Opportunity Costs

So far, my discussion of the proposed sports complex has been limited to the evaluation of costs and benefits. However, as with any project proposal, there are always opportunity costs. In the case of the sports complex, the opportunity costs include both alternative land uses and alternative tourism-based activities. Landowners could use the land identified for the sports complex for other uses, and there is always the possibility that these uses could provide a higher net present value for the region. Project managers calculate net present value not only to determine if investment in one project makes financial sense, but also to evaluate one project proposal against alternative proposals.

Currently, there is only one tourism stimulus proposal from PVT and that is the 12-field sports complex. It is entirely possible that there are other viable alternatives for tourism promotion in the region. PVT and other local decision-makers should consider these alternatives. If PVT and its member hotels commit funding to the sports complex, they will likely be paying for the project over a 30-year period. During this period, it is unlikely that PVT and the local hotels will be able to commit additional room-night fees for other significant projects. If the sports complex does not become a long-term solution for declining hotel room-nights, 30 years is a long time to wait for an alternative tourism promotion project.

Conclusion

The proposed Placer Valley Sports Complex is an excellent case study for local economic development. The sports complex project encompasses the full range of financial, political, and social issues related to local economic development projects. As a case study, the proposed sports complex reminds researchers, analysts, and policy makers why careful study and evaluation of economic development projects is important. Poorly measured economic benefits and costs can lead decision-makers down the wrong path. Policy makers must be vigilant when evaluating project proposals because sometimes project sponsors are motivated to overstate economic benefits, and understate financial, social, and environmental costs. Whether project sponsors neglect careful analysis of economic development project costs and benefits deliberately, or through ignorance of the study field, poorly studied economic development projects can negatively affect a region for many years.

PVT needs to continue studying the benefits and costs of the sports complex project. I outlined several issues in this chapter that affect the accuracy of benefit and cost measurement. I believe that if PVT makes a project decision without addressing these issues, it would risk the financial sustainability of the sports complex, and could potentially fund a project that was not the region's best alternative for sports tourism promotion. Given the significant risks and rewards of the sports complex, it is simply good policy to fully study the full range of financial, economic, and social implications of the Placer Valley Sports Complex.

APPENDIX A

Comparing Visitor Spending Surveys

Description	Year	Location	Sport	Lodging	Transportation	Food/ Beverage	Entertainment	Shopping	Event Expenses	TOTAL
Ripken Design Surveys[1]	2011	Multiple	Multi-sport	$36.29	$15.42	$28.72	$29.91	$10.49	$7.14	$127.98
Hays Sports Complex[2]	2008	Hays, KS	Multi-sport	$36.05	$25.57	$35.18	$5.66	$3.33	$6.24	$112.03
High Country Soccer Association[3]	2001	Multiple, NC State	Soccer	$46.69	$5.51	$36.90	$2.76	$14.83		$106.69
Manchester Meadows Complex[4]	2006	Rock Hill, SC	Soccer	$32.59	$28.09	$14.98	$13.11	$17.23		$106.00
Crompton Meta Study[5]	2000	Multiple	Softball							$100.00
Proposed Elk Grove Complex[6]	2011	Elk Grove, CA	Multi-sport	$39.13	$2.85	$22.00	$12.70	$20.30		$96.98
Moonlight Classic[7]	2004	Cedar Falls, IA	Soccer	$25.14	$12.83	$17.03	$5.69	$19.98	$8.25	$88.93
U.S. Cellular Park[8]	2010	Medford, OR	Multi-sport							$60.00
Little Illini Orange & Blue Fall Cup[4]	1996	Champaign-Urbana, IL	Soccer	$20.64	$4.56	$15.86		$9.23	$6.24	$56.53
Biddy Girls Basketball Tournament[9]	2000	Westwego, LA	Basketball	$17.74	$3.71	$14.48	$2.82	$10.81	$3.95	$53.51
Crompton Meta Study[5]	2000	Multiple	Soccer							$50.00

[1](Ripken Design, 2011); [2](Brinker and Walker, 2008); [3](Williams, 2003); [4](Marshall University, Center for Business and Economic Research, 2006); [5](Crompton, 2000); [6](City of Elk Grove, 2011) [7](Cela, Lankford, Printz, and Winger, 2004); [8](City of Medford, 2010); [9](Louisiana Tourism Data Resources, 2000)

APPENDIX B

Economic Impact Summaries

High Visitor Estimates

			Employment	Income	Value Added	Output
80.5% Non-Local	High Spending	Direct	97.8	$2,557,700	$4,005,888	$6,940,020
		Indirect	15.2	$726,803	$1,340,311	$2,249,980
		Induced	21.2	$970,767	$1,806,187	$2,839,005
		TOTAL	134.2	$4,255,270	$7,152,385	$12,029,005
	Low Spending		Employment	Income	Value Added	Output
		Direct	89.9	$2,306,637	$3,535,345	$6,267,140
		Indirect	14.0	$667,030	$1,240,385	$2,081,859
		Induced	19.2	$877,163	$1,632,058	$2,565,285
		TOTAL	123.1	$3,850,829	$6,407,787	$10,914,284
65% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	94.3	$2,422,340	$3,766,674	$6,522,112
		Indirect	14.1	$673,729	$1,250,922	$2,094,640
		Induced	20.0	$913,979	$1,700,500	$2,672,902
		TOTAL	128.3	$4,010,048	$6,718,097	$11,289,654
	Low Spending		Employment	Income	Value Added	Output
		Direct	86.4	$2,171,277	$3,296,131	$5,849,232
		Indirect	12.9	$613,956	$1,150,996	$1,926,518
		Induced	17.9	$820,375	$1,526,371	$2,399,182
		TOTAL	117.3	$3,605,607	$5,973,498	$10,174,932
50% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	90.9	$2,291,346	$3,535,177	$6,117,684
		Indirect	13.1	$622,367	$1,164,417	$1,944,310
		Induced	18.8	$859,023	$1,598,223	$2,512,157
		TOTAL	122.7	$3,772,736	$6,297,816	$10,574,151
	Low Spending		Employment	Income	Value Added	Output
		Direct	83.0	$2,040,283	$3,064,634	$5,444,805
		Indirect	11.9	$562,593	$1,064,490	$1,776,188
		Induced	16.7	$765,419	$1,424,094	$2,238,437
		TOTAL	111.6	$3,368,295	$5,553,218	$9,459,429

Mid Visitor Estimates

			Employment	Income	Value Added	Output
80.5% Non-Local	High Spending	Direct	78.2	$2,046,160	$3,204,710	$5,552,016
		Indirect	12.2	$581,443	$1,072,249	$1,799,984
		Induced	17.0	$776,614	$1,444,949	$2,271,204
		TOTAL	107.4	$3,404,216	$5,721,908	$9,623,204
	Low Spending		Employment	Income	Value Added	Output
		Direct	71.9	$1,845,310	$2,828,276	$5,013,713
		Indirect	11.2	$533,624	$992,308	$1,665,487
		Induced	15.3	$701,730	$1,305,646	$2,052,228
		TOTAL	98.5	$3,080,663	$5,126,230	$8,731,428
65% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	75.4	$1,937,872	$3,013,339	$5,217,689
		Indirect	11.3	$538,983	$1,000,738	$1,675,711
		Induced	16.0	$731,183	$1,360,400	$2,138,321
		TOTAL	102.7	$3,208,038	$5,374,476	$9,031,722
	Low Spending		Employment	Income	Value Added	Output
		Direct	69.1	$1,737,021	$2,636,905	$4,679,386
		Indirect	10.3	$491,164	$920,797	$1,541,214
		Induced	14.3	$656,300	$1,221,097	$1,919,345
		TOTAL	93.8	$2,884,485	$4,778,798	$8,139,945
50% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	72.7	$1,833,076	$2,828,141	$4,894,147
		Indirect	10.4	$497,894	$931,533	$1,555,447
		Induced	15.0	$687,219	$1,278,578	$2,009,725
		TOTAL	98.1	$3,018,189	$5,038,252	$8,459,320
	Low Spending		Employment	Income	Value Added	Output
		Direct	66.4	$1,632,226	$2,451,707	$4,355,843
		Indirect	9.5	$450,075	$851,592	$1,420,950
		Induced	13.4	$612,335	$1,139,275	$1,790,749
		TOTAL	89.3	$2,694,636	$4,442,574	$7,567,543

Low Visitor Estimates

			Employment	Income	Value Added	Output
80.5% Non-Local	High Spending	Direct	52.1	$1,364,107	$2,136,474	$3,701,345
		Indirect	8.1	$387,629	$714,833	$1,199,990
		Induced	11.3	$517,743	$963,300	$1,514,136
		TOTAL	71.6	$2,269,478	$3,814,606	$6,415,470
			Employment	Income	Value Added	Output
	Low Spending	Direct	48.0	$1,230,206	$1,885,517	$3,342,475
		Indirect	7.5	$355,749	$661,538	$1,110,325
		Induced	10.2	$467,820	$870,431	$1,368,152
		TOTAL	65.7	$2,053,775	$3,417,486	$5,820,952
65% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	50.3	$1,291,914	$2,008,893	$3,478,460
		Indirect	7.5	$359,322	$667,158	$1,117,141
		Induced	10.6	$487,456	$906,933	$1,425,548
		TOTAL	68.4	$2,138,692	$3,582,985	$6,021,148
	Low Spending		Employment	Income	Value Added	Output
		Direct	46.1	$1,158,014	$1,757,936	$3,119,590
		Indirect	6.9	$327,443	$613,864	$1,027,476
		Induced	9.6	$437,533	$814,065	$1,279,563
		TOTAL	62.5	$1,922,990	$3,185,865	$5,426,629
50% Non-Local	High Spending		Employment	Income	Value Added	Output
		Direct	48.5	$1,222,051	$1,885,428	$3,262,766
		Indirect	7.0	$331,929	$621,022	$1,036,965
		Induced	10.0	$458,146	$852,386	$1,339,817
		TOTAL	65.4	$2,012,126	$3,358,836	$5,639,548
	Low Spending		Employment	Income	Value Added	Output
		Direct	44.3	$1,088,151	$1,634,471	$2,903,896
		Indirect	6.3	$300,050	$567,728	$947,300
		Induced	8.9	$408,223	$759,517	$1,193,833
		TOTAL	59.5	$1,796,424	$2,961,716	$5,045,029

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