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The declining economic viability of municipal golf courses

Abstract

This study presents evidence on the deterioration of the economic situation for municipalities owning and operating golf courses. The results demonstrate that the ongoing financial costs, in terms of operating losses, have been large for more than a decade. Using a unique data set consisting of all municipal golf courses in Florida during the period 1996 to 2010 that were accounted for as enterprise funds, the authors demonstrate that municipal golf courses have had a direct negative financial impact on the communities that own and operate them, and the negative financial results have consistently deteriorated during the sample period, reaching an average of negative \$370,478 per enterprise fund in 2010.

The authors also present evidence that these findings are widespread in the municipal golf course industry in the United States. The paper also examines the significant positive externalities associated with having a golf course in the community including increased green space, enhanced water filtration, increased home values, increased employment and overall quality of life issues. We conclude that the direct negative economic impacts of municipal golf courses suggest great caution should be exercised by any municipality considering the purchase or construction of a golf course.

Keywords: municipal golf course, enterprise fund.

JEL Classification: H23, H76, H82.

Introduction

Buying or developing a golf course is a significant investment for a municipality and has a long-term economic impact on the community. This paper presents evidence on the economic costs and potential benefits to municipalities owning golf courses. Results presented herein demonstrate that the ongoing financial costs, in terms of operating losses, have been very large for more than the past 10 years. The study includes the financial results of all municipal golf courses in Florida during the period 1996 to 2010 that were accounted for as enterprise funds. The empirical analysis demonstrates that golf courses, as stand-alone entities, have had a negative financial impact on the communities that own and operate them, and the negative financial results have consistently deteriorated during the sample period with mean operating income per fund falling from a positive \$49,809 in 1996 to a negative \$370,478 in 2010.

This paper also reviews recent evidence that suggests that these findings are widespread in the municipal golf course industry in the United States. Published statistics from Minnesota and Arizona show that the economic forces driving the deteriorating financial conditions of municipal golf courses are present there, also. However, there are significant positive externalities associated with having a golf course in the community including increased green space, enhanced water filtration, increased home values, increased employment and overall quality of life issues. Many in the industry have argued that these positive externalities are sufficient to justify maintaining municipal golf courses even when the operating losses suggest a

significant drain on the municipality's resources. This paper examines the qualitative and quantitative benefits of municipal golf courses in detail and offers an analysis of the net benefit of a golf course to the municipality.

The rest of the paper is organized as follows. Section 1 explains how enterprise funds are used to account for municipal golf course operating revenues and expenses, and how these golf courses are viewed as municipal investments by government officials. Section 2 presents the empirical evidence on operating income (losses) and return on assets. Section 3 presents additional evidence on the economic forces affecting revenues and expenses in the golf course industry, and section 4 considers the potential positive economic externalities of municipal golf courses.

1. Golf course enterprise funds viewed as municipal investments

Municipal golf courses represent a significant commitment of resources for the municipalities that own and operate them. Buying or developing a golf course is a decision that must be undertaken with a great deal of planning and research in order to determine if it represents a sound investment for the community. Conversations on this topic with many city officials reveal that there are two approaches to this determination that can be identified. One approach is to analyze the decision to own or develop a golf course as a potentially lucrative long-term investment, one that increases the value of city-owned assets and/or provides additional net revenues for services. Another approach used by local governments is to view the municipal golf course as a valuable service provided to residents, such as parks and recreation, but which generate substantial revenues and thus can be operated at near break-

even costs. An approach to ownership based on either of these two justifications typically results in establishing the golf course as an enterprise fund.

1.1. Golf courses and enterprise funds. As explained by Gauthier (2005), “An enterprise fund may be used to report any activity for which a fee is charged to external users for goods or services. Generally accepted accounting principles (GAAP) also requires the use of an enterprise fund for any activity whose principal revenue sources meet any of the following criteria:

- ◆ Debt backed solely by fees and charges. If issued debt is backed solely by fees and charges, an enterprise fund must be used to account for the activity. This sole backing criterion encompasses debt secured, in part, by a portion of the debt proceeds themselves (reserve funds), but not debt that is also secondarily secured by the full faith and credit of the government.
- ◆ Legal requirement to recover costs. An enterprise fund must be used if the cost of providing services for an activity (including capital costs such as depreciation or debt service) must legally be recovered through fees or charges.
- ◆ Policy decision to recover cost. It is necessary to use an enterprise fund if the government’s policy is to establish activity fees or charges designed to recover the cost of providing services (including capital costs such as depreciation or debt service).”

Enterprise funds are used to account for activities that are intended to operate as a business would. The financial accounting for enterprise funds is similar to accounting methods used in the private sector. However, while enterprise funds are generally constructed for complete cost recovery in the long term, they are not necessarily intended to make a profit. Owning and operating a golf course, however funded, should be treated as an investment. It follows that any investment made by the city or county should be held to the same standards as any other investment, as set out in that government’s investment policy. Miller (1998) states that the objectives in the investment policy should consider the legality, safety, liquidity and yield. He further defines the following:

- ◆ *Legality*: Conformance with federal, state, and other legal requirements.
- ◆ *Safety*: Preservation of capital and protection of investment principal.
- ◆ *Liquidity*: Maintenance of sufficient liquidity to meet operating requirements.
- ◆ *Yield*: Attainment of market rates of return.

Often government investment policies state these requirements as listed in priority order. For exam-

ple, legality is ranked higher in importance than safety, and so on. Within this framework, it is reasonable to ask:

1. Of the Florida county and municipal golf courses accounted for as enterprise funds, how many are achieving cost recovery (“breaking even”, as defined by generally accepted accounting principles)?
2. Have those golf courses proven to be sound investments, when considering the investment policy objectives of legality, safety, liquidity and yield?

To answer these questions, fifteen years of data was gathered from every Florida city and county for which the following were both true:

1. The city or county owns an operating golf course.
2. The course has been operated as an enterprise fund over any portion of the past 15 years.

Data was gathered from the Comprehensive Annual Financial Report (CAFR) or Annual Financial Report (AFR) for each of those cities or counties. Some respondents operated multiple golf courses; in those cases, some had combined them for financial reporting purposes, while others did not. For consistency, the decision was made to analyze each government entity as a single enterprise fund, combining those multiple course funds previously reported independently.

2. The evidence from operating income and return on assets

Operating income is a key indicator as to the profitability (cost recovery) of the operation of the golf course. Non-operating revenues and expenses were excluded, as they often reflect policy decisions and/or temporary conditions which are immaterial when considering true long term operations. For example, policies regarding actual cash held and how it is invested could vary dramatically among cities and counties. Similarly, if the course was recently purchased, or has invested significant capital for improvements using debt for full or partial funding, the policy on debt repayment should be removed from analysis – as it is both a policy decision and a temporary condition.

Another key indicator is the total assets, representing the historical cost of the capital investment. A third key indicator, return on assets (ROA), is calculated by dividing the operating income by total assets.

Operating income was examined for each city and county for fiscal years 1996 to 2010, with the fiscal year beginning on October 1st, and ending September 30th. The operating income for all city and county golf courses was averaged for each fiscal

year, along with the number and percent of courses having positive and negative operating income for those years. Of the respondents that operated multiple golf courses, some had combined them for financial reporting purposes, while others did not. For consistence, all courses operated by a single government have been combined for this analysis.

Table 1 presents the mean and the median operating income for every golf course in the data. The smallest

sample size is for the oldest year in the sample period; 32 courses in 1996. By 2010 there are data available for 42 courses. The largest growth in courses was in 2001 through 2005 when 7 courses were added. This period corresponds to a period of intensely active real estate development in Florida, along with rapidly growing municipal tax revenues. The best years for the owners would appear to be 1997 and 1999, when over 70 percent of the sample reported a positive operating income.

Table 1. Enterprise fund operating income

Year	N	Mean	Median	Number positive	Percent positive
1996	32	49,809	59,334	21	65.6%
1997	33	154,789	201,000	24	72.7%
1998	33	118,170	63,294	21	63.6%
1999	35	79,374	78,636	25	71.4%
2000	35	45,351	26,578	18	51.4%
2001	35	-17,763	-13,313	16	45.7%
2002	37	-130,836	-106,185	11	29.7%
2003	40	-146,358	-134,494	11	27.5%
2004	41	-134,972	-147,179	13	31.7%
2005	42	-153,432	-123,414	14	33.3%
2006	42	-113,906	-81,303	16	38.1%
2007	41	-169,967	-99,383	13	31.7%
2008	41	-199,915	-147,538	11	26.8%
2009	41	-295,268	-259,498	5	12.2%
2010	42	-370,478	-266,723	4	9.5%

Beginning in 2001, there is an average operating loss, mean and median, and this continues for every subsequent year. The median operating loss, per enterprise fund, for the period 2002 through 2009 is more than \$150,000 per year on average; the mean loss during that period averaged almost \$200,000.

The trend of average operating income is clear in Figure 1, which shows a linear regression analysis with clear results. The dependent (Y) variable is average operating income per enterprise fund and the independent (X) variable is the fiscal year (setting the first year of the dataset equal to one). The t-statistics

for the intercept (5.88) and for the slope (-10.02) indicates a significant (negative) linear trend in the operating income. The model has the following linear regression equation: *Average Operating Income* = 170,969.9 + (-32,082.1) * *Year*. Assuming that the assets recorded in the CAFR or AFR will remain relatively consistent in future years (as evidenced in the historical data), and that the operating income has trended with over a \$32K declines each year, the returns can reasonably be expected to continue to decline and remain negative. A linear trend forecast of operating income versus time results in a highly significant R-squared of 88.55%.

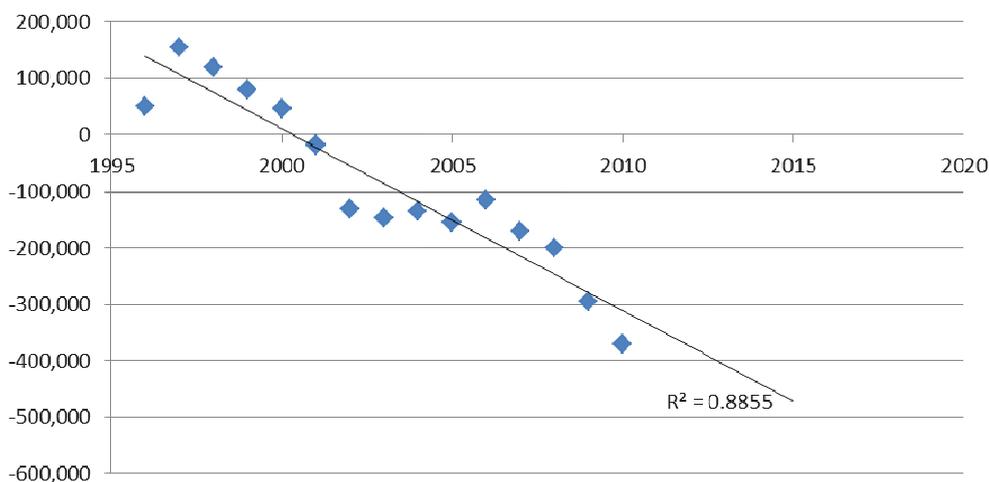


Fig. 1. Average operating income across time

Next, we compare the returns earned on investments in golf courses to returns available for safe and prudent investments. One example of a conservative investment that would be consistent with most city and county investment policies is short-term securities issued by the US Treasury. Table 2 provides the average return on assets (ROA) for all of the enterprise funds examined, and compares to the yield on a 13 week Treasury bill, one of the lowest returning investments common invested in by counties and municipalities. T-bill data was sorted by monthly average; Table 2 provides the highest and lowest yields for the 12 months of the same fiscal year period.

Table 2. Comparing returns

Year	Return on assets		Treasury bill returns	
	Mean	Median	Lowest	Highest
1996	3.85%	2.05%	4.88%	5.32%
1997	7.31%	4.61%	4.82%	5.17%
1998	3.92%	1.76%	4.25%	5.20%
1999	3.09%	2.18%	4.21%	4.85%
2000	1.05%	0.46%	4.96%	6.11%
2001	-1.42%	-0.49%	2.30%	6.15%
2002	-3.63%	-3.18%	1.53%	2.01%
2003	-6.18%	-5.12%	0.84%	1.42%
2004	-4.95%	-3.83%	0.90%	1.67%
2005	-5.12%	-3.18%	1.87%	3.47%
2006	-3.83%	-2.00%	3.81%	4.91%
2007	-5.90%	-3.54%	3.70%	4.99%
2008	-7.21%	-4.76%	0.90%	3.82%
2009	-9.86%	-7.58%	0.02%	0.44%
2010	-11.52%	-10.60%	0.05%	0.17%

Treasury bill returns exceed the operating returns on the average golf course in every year of the sample, as the median ROA was less than the lowest monthly observation in each year. Even as the returns on safe Treasury securities have declined to less than one percent per year in recent years, that is still a higher return than has been earned on a typical municipal investment in a golf course.

2.1. Analysis of risk and liquidity. It has been established that returns on golf course investments in the last 15 years have not yielded what even the safest government investment would, and the trend indicates that operating income may very well continue to decline. It would require an unprecedented improvement in operating income to return these investments to profitability. Statewide average operating income has been negative beginning in 2001 and continuing through 2010. Since safety of principal and liquidity take precedence over returns (as outlined in Miller's priorities above), the next factor to address is the safety and liquidity of the golf course investment.

Capital is an obvious requirement for entering into a golf course enterprise, and no capital asset tied to the operation of a golf course is as liquid as other common government investments in financial assets such as stocks or bonds. Liquidating municipal investments in financial assets is usually a simple matter. If the municipality holds the stocks or bonds directly (through a financial intermediary), all that is required is to issue a sell order and the financial asset is sold into the secondary market, where a fair market price is ensured by the large amount of self-interested buyers and sellers. This liquidity may be somewhat reduced when the government entity has entered into a contract for investment management services that may require that liquidations are preceded by notice of a few days or even months. In contrast, liquidating the golf course and related assets is complex, expensive and time-consuming. The potential buyers for a golf course or its assets are very limited, and extensive efforts must be made to make the purchase opportunity known and to solicit potential buyers. Liquidating the investment and exiting the business takes time, and involves a significant amount of uncertainty. Unlike financial assets, it is not possible to simply look up the current trading price for any given golf course. In sum, golf courses are not a liquid investment.

In addition to that, golf course returns are highly risky. All investments possess a risk-reward relationship. The paradigm of investment returns is that higher returns must be promised to attract investors to higher risk investments. One measure of risk, or dispersion, is standard deviation, which is the square root of the variance. These are computed from the annual data, over the 15 year sample, using the return on assets for the median enterprise fund, and comparing to the average yield on 5-year Treasury bonds and the total return on the S&P 500 stock index over the same period. Mean, standard deviation and variance for the three sets of returns are presented in Table 3 for 1995-2010. Returns on assets for the golf course had a negative average return, and a standard deviation far higher (3.9 times higher) and also significantly less than the standard deviation of the stock index (the stock index standard deviation was 3.5 times as great as the golf course ROAs). Using a normal approximation, a range of 1.5% to 7.1% percent represents a 95% confidence interval for 5-year Treasury yields based on this data, whereas the range of outcomes that would encompass the same relative probability for ROA on the golf courses is as low as -13.7%, with maximum of 8.3%.

Table 3. Risks and returns (1995-2010)

	Average	Standard deviation	Variance
Return on assets	2.693%	5.48%	0.30%
5-year treasury	4.284%	1.41%	0.02%
S&P 500 stocks	6.734%	19.01%	3.61%
95% confidence interval			
	Low estimate	High estimate	
Return on assets	-13.7%	8.3%	
5-year treasury	1.5%	7.1%	
Long-term benchmarks*			
	Average	Standard deviation	
Intermediate treasury	5.6%	5.7%	
Large-company stocks	11.7%	20.6%	

Source: * The long-term benchmarks from Ibbotson Associates Stocks, Bonds, Bills and Inflation: 2009 Yearbook.

A further comparison can be made to long-run historical benchmarks. Measured over the period 1926-2008, Ibbotson Associates (2009) reports that the long-run average return on intermediate term government bonds is 5.6% annually with a 5.7% standard deviation and the return on large company common stocks averaged 11.7% with a 20.6% standard deviation. The standard deviation for the Treasury bond returns is much greater in the Ibbotson data because they take into account the fluctuations in prices of the Treasury securities as well as the yield to maturity.

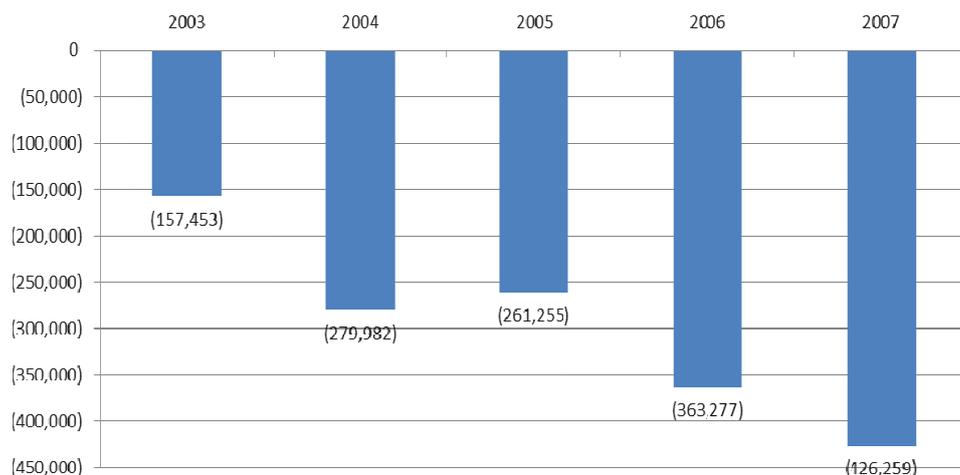
2.2. Empirical findings. The results of our analysis of the operating data is conclusive. Returns earned on municipal investments in golf courses are subpar to any traditional investment. All golf courses that are accounted for as Enterprise Funds, on average, have not been even break-even business ventures in the last 10 years; the average break-even

was in 2000. Operating returns on these investments have continued in a strongly negative trend, so that in the most recent year for which data is available, 90% of courses reported operating losses, and the average operating loss in that year was an economically significant \$370,000.

The implication of these results is that any government that is faced with an opportunity to purchase, develop, own or operate a golf course should view with extreme skepticism the oft-stated goals of such enterprises, either (1) the golf course is a good investment; or (2) the golf course can be operated as self-supporting service to the community. Analysis of the experience for Florida governments in this business reveals that this business does not possess the characteristics that would make it a suitable investment for a municipal government, and the potential for large economic losses that must be sustained by other stakeholders is significant and likely.

3. Economic forces shaping the municipal golf course industry

The economic weakness and poor financial results of Florida municipal golf courses are not unique. Across the United States there are stories of losses and municipalities facing difficult closure and divestiture decisions. For example, Minnesota had 100 municipal golf courses in 2007 using Enterprise Fund reporting. The combined loss for Minnesota’s enterprise fund golf courses was 2 million dollars. In Figure 2, the city of Moorehead, with more than \$425,000 in operating losses in 2007, shows a pattern very similar to the one found in the Florida data.



Source: Freedom Foundation of Minnesota (2008).

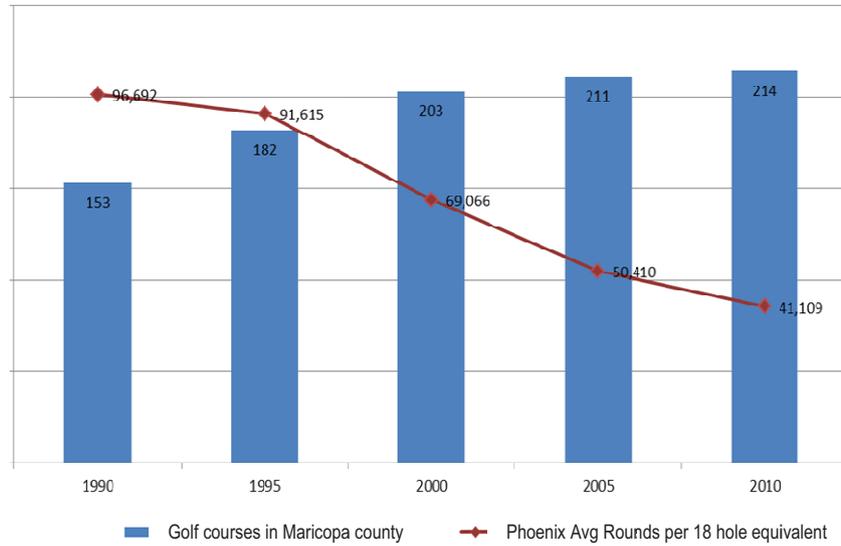
Fig. 2. City of Moorehead, MN – golf operations operating income (2003-2007)

Phoenix provides another example of a troubled municipal golf course market. Five municipal golf course accumulated losses of \$2.4 million in the 2011-2012 fiscal year. The cause of the problem for

Phoenix is particularly acute because of the large amount of supply, with 9.7 golf course holes per 10,000 people, one of the highest concentrations in the US (Source: City of Phoenix, 2012). The Phoe-

nix metropolitan area is a very good comparison for the Florida courses in our sample. Phoenix and Florida both have warm climate year-round, a robust winter tourism market with many golf-centered resorts, and a large number of retirement communi-

ties. Figure 3 shows the deteriorating supply and demand situation in Phoenix and Maricopa County. The problem has grown as the supply of courses has increased and the average number of rounds played has decreased.



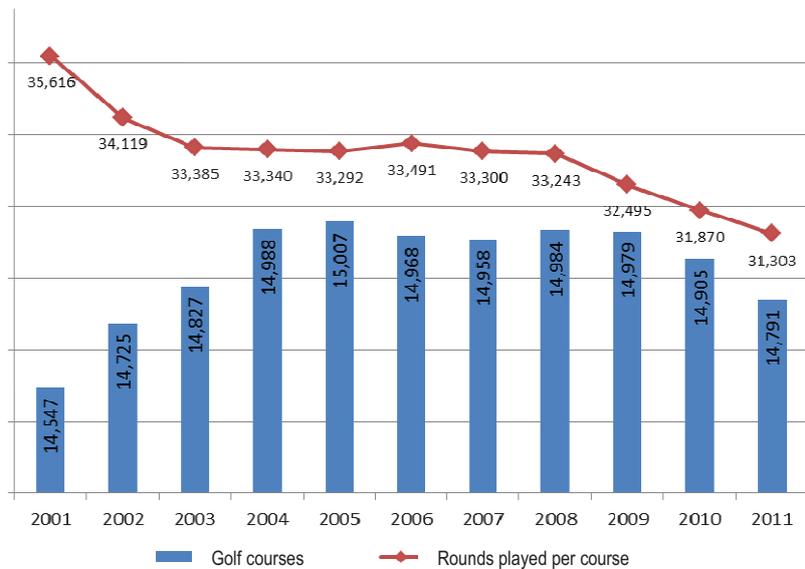
Source: City of Phoenix (2012).

Fig. 3. Phoenix and Maricopa county golf average rounds and total golf courses

Because of the unique cost structure of golf courses, as the rounds played falls profitability declines because golf course operators do not have the luxury of maintaining only a portion of the golf course. That is because golf course maintenance costs are mostly unrelated to the number of rounds played. As a result profitability of golf courses are significantly and directly related to rounds played as vividly demonstrated from the

result of declining revenue on Phoenix area municipal golf courses.

Given the theoretical and empirical relationship between rounds played and golf course profitability we conclude that the large operational losses documented in enterprise funds in Florida are related to the decline in rounds played during the period of the study. Nationwide this decline is well documented by the National Golf Association.



Source: National Golf Foundation.

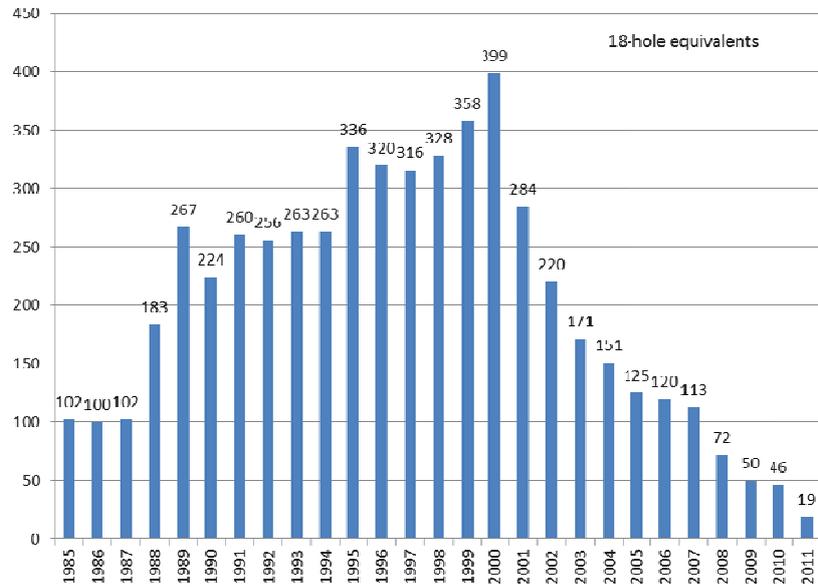
Fig. 4. US rounds played and golf course supply

These industry statistics demonstrate that threats from the external environment have been significant with substantial negative financial implications and out-

comes for municipal golf. If the analysis were to stop here the policy implications for any municipality would be obvious. Any alternative use would seem to

be better than continuing to bleed public funds to support a continuous stream of losses supported by the taxpayers. Donating the golf course to a private or charitable organization or turning it into a park, biking trails or any other loss-free alternative would seem to be a better economic choice for the local government. In addition, any proposal to build a municipal golf course or for the municipality to take over a failing course from a private owner should be evaluated carefully and in light of these results. However, it would be a mistake to generalize from these recent results and conclude that the municipal golf course concept is doomed and that no municipality should ever consider investing in a golf course. There is a potential for recovery in the industry.

3.1. Golf industry adjustments. Clearly the industry is moving toward a new equilibrium. Consistent with the textbook analysis of a monopolistically competition the industry is responding to economic losses by a contraction of the industry and a decline in the number of competitors. Theory predicts that over time the demand for remaining courses will increase and the prices will rise until the price equals the average revenue. One source of evidence that supports this view is demonstrated in Figures 5, 6 and 7. Figure 5 shows the number of golf courses opening is declining since 2001, when 399 new golf courses opened (SRI International, 2012). In the most recent reported year, 2011, new golf courses declined to 19, a decrease of over 95%.

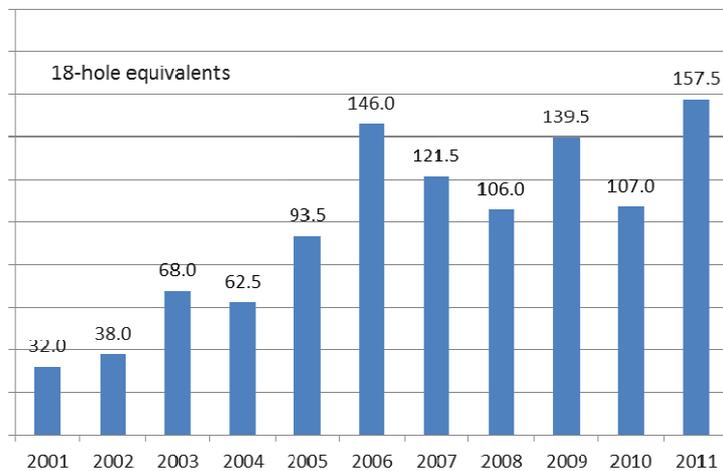


Source: National Golf Foundation.

Fig. 5. New golf course openings

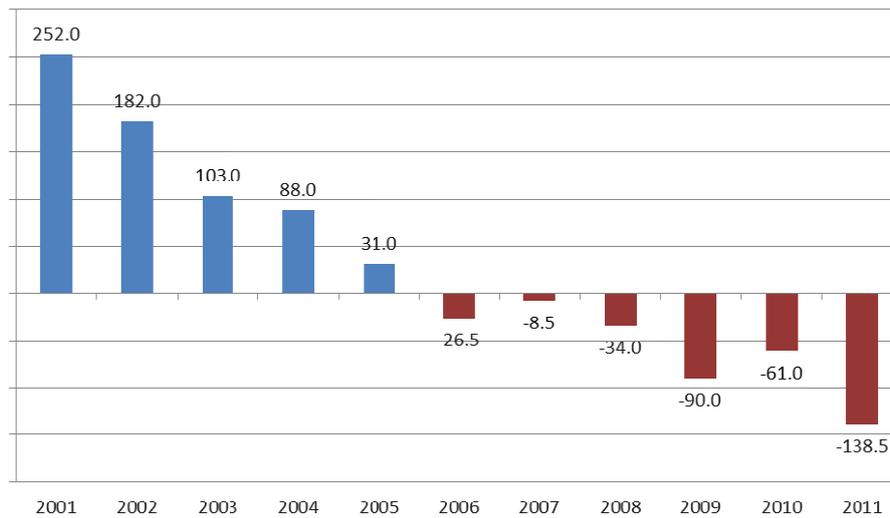
At the same time the number of courses closing is increasing (Figure 6). It is especially notable and relevant for our study that 83% of the courses closed in 2011 are open to the public, which includes municipal courses and their competitors. As a conse-

quence of reduced openings and increased closings the number of courses in operation is declining. The change in net supply of golf courses, computed as new course openings minus course closures, is shown in Figure 7.



Source: National Golf Foundation/SRI International (2012).

Fig. 6. Golf course closures



Source: National Golf Foundation/SRI International (2012).

Fig. 7. Net change in golf course supply

As this process of supply adjustment takes place profitability for existing courses is theoretically predicted to improve. Therefore, closing a municipal golf course based on past financial performance may not be in the best interest of the municipality. We cannot be sure that what has happened in the past will continue to happen and we have theoretical reasons to believe that past losses for the industry set in place a market response which says that profits are likely to rise after a period of poor economic performance.

3.2. The trend of declining rounds may not continue. Given the high degree of operating leverage (fixed costs) typical of golf course operations, the large declines in profitability as rounds played declines is not surprising or unexpected. Similarly we could expect a rapid and dramatic return to profitability if the industry were to experience growth in rounds played. No one can predict with certainty that golf participation and frequency of play will increase but there are certainly reasons to be optimistic. The US economy is slowly but persistently recovering from the great recession, and signs of the recovery are evident in 2013 in the auto and real estate industry. The first members of the Baby Boom generation have reached full retirement age and the frequency rates (rounds played per year) for older golfers and those who are retired are higher than average. In addition to these economic and demographic trends the NGF (2012) estimates that “over 25 million people indicate they are quite interested in playing golf. This figure includes over 17 million who have never played golf and nine million who have had some past exposure.”

If declining demand turns into increasing demand we would expect symmetry in the results. That is all of the economic and financial circumstances which have devastated the industry would turn into a rapid

return to prosperity. Revenues would increase dramatically as demand shifted right on a relatively inelastic supply curve, while the course maintenance costs would be largely unchanged with an increase in rounds played. Given the economics of the business, hundreds of thousands of dollars in losses could turn into profits as the external environment changes.

4. Economic externalities – why do municipalities own golf courses?

During September 4, 2007 meeting, the Palm Coast (Florida) City Council voted unanimously in favor of accepting a land donation for the purpose of establishing a public golf course. The land had been previously used for this purpose, and then the course had been demolished by a construction management company with the intention of reconstructing the golf course and developing the surrounding property. The decision posed to the Council seemed to be a relative easy one. The City Manager had outlined the development of a public golf course as one of his goals, and the land was donated with no cost to the City. “When I came here in February one of the goals of City Council and this community was to establish a public golf course.” In fact, the City Manager went on to say, “City Council gave me some very clear direction and it was also the same type of direction the community was talking about very loudly and that was first of all: we needed to bring Palm Harbor golf course back to life. Secondly, we needed a public course so we could have a recreational opportunity that was affordable golf and thirdly, we needed to work towards the development of the resort hotel that was part of the original development plan on the water front side or the harbor side.” He later went on to add, “We went into this knowing that there was some financial issues. We needed to make sure that we did some due diligence and we proceeded with that by hiring the National Golf

Foundation to provide us with a cost estimate for renovation, their estimate for what a round of golf would need to cost in order to make it a self-sustaining, self-paid golf course.”

As we have seen, it has been very difficult as of late to achieve the goal of a self-sustaining municipal golf course. The evidence in this study clearly demonstrates that municipal investments in golf courses have been bad financial investments for local communities in Florida. Not only have local governments forgone positive rates of return in risk free investments but returns have been negative and increasing since 2005. These results are consistent with golf enterprise funds in other states.

However, many municipal officials would suggest that there are significant positive economic externalities from owning and operating golf courses in their communities, for example, increased property values and tax revenues.

4.1. Direct and indirect benefits of golf. So far we have focused on the internal net operating costs and revenue of the municipal golf course. The pecuniary benefits of golf to the local community are significant. An SRI International (2009) study estimated that in 2007, the \$7.5 billion Florida golf industry supported, “A total economic impact of \$13.8 billion for the state of Florida including the indirect and induced economic impacts stimulated by golf sector activity; a total impact of nearly 167,377 jobs; and total wage income of \$4.7 billion.” This includes the direct economic effects on “core industries” due to expenditures on golf course maintenance, irrigation, renovation and construction projects, golf cart manufacturers, golf equipment retailers, etc., and the economic effects on supporting industries, especially residential real estate and hospitality/tourism. Since there are about 1,200 golf courses in the state of Florida, on a per golf course basis each course would contribute 139 jobs and at an average of \$28,080 per job.

On a national basis, another study by SRI International (2012) estimated golf impact to be:

- ◆ A total direct and indirect impact on the economy of \$176.8 billion.
- ◆ 1.98 million jobs.
- ◆ 3.9 million in charitable donations related to golf activities (\$23,000 per function).

4.2. Real estate values and real estate taxes. It is difficult to estimate how much residential real estate values are affected by being located on or near a golf course. One study conducted at the University of Florida (2002) stated:

“Overall weighted average differences in all property value measures across the 18 counties evaluated, by land use type, are indicated in Table 27. Commercial, agricultural, industrial, institutional, and government land use types all showed an increase in total value associated with golf courses averaging \$10,942 per parcel, and ranging from nearly \$20,000 for residential properties, \$70,000 for commercial properties, \$114,000 for industrial, to nearly \$121,000 for agricultural land. Government and utility lands had a negative difference in total value. Differences in land values were positive but smaller, averaging \$464 across all property types, and \$2,871 for residential properties, but again were negative for utility properties. Assessed values showed a positive value averaging \$12,461 per parcel associated with golf courses, and tax values (net of exemptions) averaged \$17,981 greater. Sale prices had an average difference of about \$9,000 per parcel.”

Another study commissioned by GOLF 20/20 for the Florida Golf Impact Task Force, prepared by SRI International (2012) reached the following conclusions:

“Realized golf premium. The “golf” premium is the extra value a homeowner can expect to receive on the sale of a housing unit located in a golf community that is above and beyond the premium associated with a home’s other features or amenities (e.g., square footage, fixtures, landscaping, etc.). Through industry interviews, SRI arrived at a conservative estimate of this premium of \$25,000 per unit. Multiplying the approximately 605 existing Florida golf communities by 1,122, the average number of housing units per golf course, we arrive at a total of 678,690 golf community homes. In 2007, the home turnover rate (percentage of homes sold relative to the total housing stock) was 3.4 percent in Florida. Therefore, the realized golf premium was calculated by multiplying the home turnover rate by the total number of golf community homes by the average golf premium per unit. SRI estimates Florida’s golf real estate premium was \$576.9 million in 2007.”

The above study was based entirely on the results from golf course communities. Whether municipal courses cause similar increases in housing values in the community is empirical question. No studies calculating these estimates have been found. However, clearly developers believe golf courses enhance real estate values on the margin by at least the amount it costs developers to build and maintain the golf course through build out.

If we use real estate values in golf course communities as a proxy for real estate impacts on municipal golf courses and also assume the number of home affected to be 1,122 homes then real estate values in homes near a golf course would be higher by about \$28 million as a consequence of the golf course being

in the community. For example, if the local millage rate is 20 mills (dollars of taxes per thousand dollars of property value), then the local government would collect \$560,000 in additional real estate taxes.

The Golf Course Superintendents Association of America (2013) maintains that golf courses provide a wide range of environmental benefits to the community. Properly maintained golf courses provide community “green spaces” and enhance wildlife habitats. The turf grass planted in golf courses can serve as a filter to trap pollutants preventing them from entering the community storm water and waste water treatment system. Golf courses can provide “catch basins” that store and slowly release storm waters preventing or mitigating flooding. Constructing a golf course is an effective way to reclaim and restore environmentally damaged sites, e.g., closed landfills.

Conclusions

We have presented compelling evidence on the deterioration of the economic situation for municipalities owning and operating golf courses. Our results demonstrate that the ongoing financial costs, in terms of operating losses, have been large and negative for

over 10 years. Using a unique data set consisting of all municipal golf courses in Florida during the period 1996 to 2010 that were accounted for as enterprise funds, we have demonstrated that municipal golf courses have had a negative financial impact on the communities that own and operate them, and the negative financial results have consistently deteriorated during the sample period, reaching an average of negative \$370,478 per enterprise fund in 2010.

We have also presented evidence that these findings are widespread in the municipal golf course industry in the United States. We have also examined the significant positive externalities associated with having a golf course in the community including increased green space, enhanced water filtration, increased home values, increased employment and overall quality of life issues. Many in the industry have argued that these positive externalities are sufficient to justify ownership and operation of municipal golf courses even when the operating income suggests a significant drain on the municipality’s resources. Our conclusion is that the direct negative economic impacts of operating municipal golf courses suggest great caution for any municipality considering the purchase or construction of a golf course.

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