The Role of Tennis in Generating Social Capital

Katie Schultz
December, 2007

Senior thesis submitted in partial fulfillment
of the requirements for a
Bachelor of Science degree in Economics
at the University of Puget Sound

Introduction

Robert Putnam brought social capital to the forefront of public attention with his article, "Bowling Alone." Putnam argues that social capital is crucial for any nation and that it may not be generated at its socially optimal level.

There are economic benefits from the provision of sports. Participation in sports is linked to increases in health and decreases in crime rates. Also, participation in sports can increase the marginal productivity of labor (Sandy et. al 2004, 290).

Economists, however, have not combined the fields of sports economics and social capital to study the role of sports in generating social capital. Sports can be an effective way of generating social capital. This paper will demonstrate that tennis creates more social capital per unit of activity than other team sports and that it is not provided at its socially optimal level due to market failure. Nonprofit organizations can be an effective way to correct this market failure.

Purpose

Robert Putnam explains why social capital should be produced. He asserts social capital leads to faster economic development, lower crime rates, and more effective governments (1995). Given that social capital is desirable and should be produced, this paper addresses how best to produce social capital and how much to produce.

This paper assumes that sports generate social capital, but investigates whether individual or team sports are best suited to producing social capital. Tennis is used as the individual sport and is analyzed at the recreational level. This paper argues tennis produces more social capital, compared to team sports. It asserts tennis is underprovided in the market and that nonprofit organizations should provide tennis services. These organizations would produce closer to the socially optimal level of output than the market left alone.

Social capital is defined at an aggregate level as the network of trust, norms, and social connectedness that result from repeated social interactions (Putnam, 1993). Social capital provides the interpersonal trust, norms, and connectedness that allow for the cooperation necessary to attain mutually beneficial outcomes. At an individual level, Glaesar defines social capital as the "set of social attributes possessed by an individual" (2000, 383). For this paper, the social capital created is "reputational." This means individuals know the correct behavior required for interactions and can create a trustworthy reputation by acting in this way. Axelrod states this reputation sends a signal that the individual is trustworthy. This signal, he states, reduces transaction costs (1986, 1107).

Structure

First, prior literature on social capital is reviewed. Next the social and private benefits of sports participation are analyzed.

The socially optimal level of sports provision is then determined. To evaluate the socially optimal level of sports provision, the positive externalities generated by social capital are examined. Sobel states that social capital "enhances factor productivity" and increases economic growth (2002, 146). Glaesar et. al explain that social capital can decrease free rider problems in society. As people learn to trust each other, they are less likely to take advantage of others (2002, 437). Putnam suggests that social capital generates positive externalities in the form of effective governments and economic prosperity (1993). Social capital can also decrease crime rates and potentially increase education levels in communities (Putnam, 1993). These externalities occur because society benefits, by more than the individual, from an individuals participation in sports. When these positive externalities occur, the market under provides opportunities for participation in sports and fails to capture the benefits to society.

Social capital is then defined at the individual level. Then, a production function for social capital is created and analyzed. Team sport and tennis's production of social capital can then be compared and contrasted to show that tennis creates more social capital per unit of activity. The socially optimal level of team sports versus tennis is also compared.

Private investment in social capital is then investigated. An investment function is created to model an individual's private decision to invest in social capital through tennis. The level of individual investment is determined and compared to the socially optimal level of tennis participation. This paper determines the incentives for private investment do not

achieve the socially optimal level of tennis participation. This occurs because individuals do not understand the social benefits of playing tennis or even the full benefits of private investment.

The paper then evaluates possible ways to achieve the socially optimal level of tennis participation, including government intervention and nonprofit provision. Due to government market failures, the nonprofit provision is recommended as an effective solution. The USTA is recommended as the nonprofit organization that should provide tennis because it can act like a monopoly in the market and has incentives to produce at the socially optimal level.

Literature Review

Robert Putnam defined social capital at an aggregate level and measured social capital through civic engagement, such as PTA membership, labor unions, religious affiliations, civic and fraternal organizations, and service and sports clubs (1995). With data from a study on governments in Italy's different regions, Putnam found that civic engagement and membership are essential in generating social capital. This led to more rapid economic development (1995). Furthermore, he found this social capital, or lack thereof, determined how prosperous and effective these regions and governments in Italy were (1995). The stock of social capital changes over time as inflows of investment occur and outflows occur through depreciation. Putnam called for policies and programs to

increase social capital because he asserted the overall stock of social capital was declining (1995).

Glaesar modeled individual social capital. He defined individual social capital as the "set of social attributes possessed by an individual" (2000, 383). Glaesar presented an investment function for social capital and studied the effects of different variables on investment in social capital (2000, 384). In a later article, Glaesar et. al considered specific investment factors, such as the rate of depreciation, mobility, age, and the discount rate (2002, 441). His investment function is a starting point for the investment function in this paper.

Seippel distinguished differences between team sports and individual sports, like tennis, in the creation of social capital (2006, 174). He investigated the possibility that some sports may produce negative social capital, through the promotion of violence, racism, and chauvinism (2006, 174). This paper will build on the idea that individual and team sports generate social capital with varying degrees of success, due to the generation of positive and negative externalities. Stempel also contrasted team and individual sports; he claimed that sports, like tennis, tend to "restrain physical domination" and promote less violence than many team sports (2005, 426).

Fukuyama also discussed the negative externalities produced by social capital. He asserted that social capital produces more negative externalities than other forms of capital (1999). Thus, Fukuyama suggested social capital must be analyzed as net social

capital by taking the negative externalities into account. Social liabilities, or negative externalities, occur, he stated, if the social capital created by a group decreases their ability to positively interact with others outside of the group (1999).

Social capital is dependent on the norms within society. Axelrod stated that norms are of economic concern because they explain individual behavior in economic models (1986, 1096). Norms are defined as expectations, values, and behaviors (1986, 1096). The importance of Axelrod's analysis for this paper is his analysis of the reputation method of enforcement of norms. Reputation is a way of signaling (1986, 1107). Violating a norm damages an individual's reputation and limits their ability to effectively interact with others. Those without the signal will have difficulty interacting at low transaction costs.

Private and Social Benefits of Sports Participation

Individual benefits from sports participation include utility from playing sports and health benefits. Participation in sports also generates social capital. These private benefits make up the market demand for sports, or the marginal private benefits. Sobel asserts social capital is valued for intrinsic reasons and for private benefits, beyond the external economic reasons and benefits (2002, 152).

Society benefits from individuals playing sports, by more than the individual benefits. Individuals create social capital by playing sports and this benefits society by decreasing the crime rate and promoting economic growth (Putnam, 1995). Society also benefits

because the creation of social capital leads to efficient and cooperative outcomes in society without legal costs of law enforcement. Society's benefits are the marginal social benefits or social demand.

Positive externalities exist because marginal social benefits are greater than the marginal private benefits. There are marginal external benefits from an individual's participation in sports.

Socially Optimal Level of Sports Provision

Socially optimal levels of output maximize the benefits to society when the marginal social costs equal the marginal social benefits. The socially optimal level of tennis participation must be determined, though it would be difficult to empirically measure in this case. However, since social capital generates positive externalities, like economic growth, the market fails and does not generate the socially optimal level of output (Putnam, 1993). Society then benefits, by more than the individual, from an individuals participation in sports.
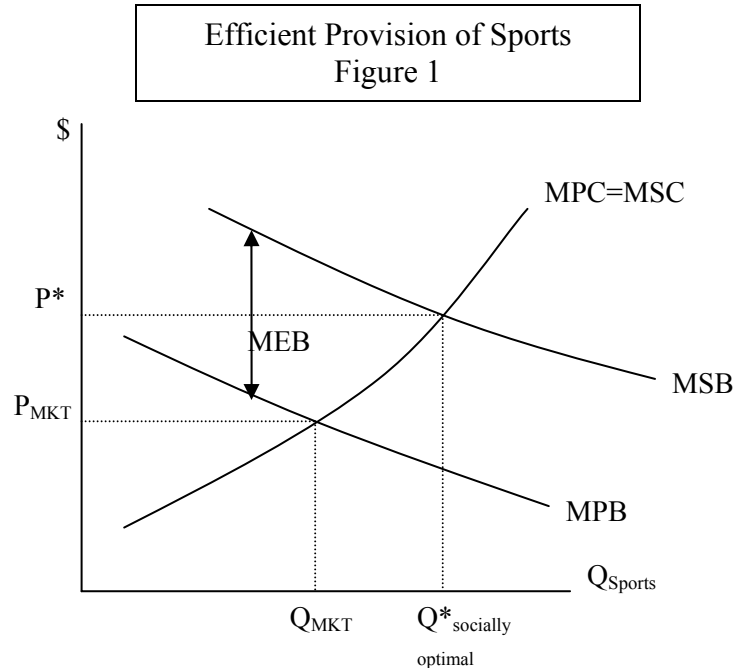
Efficient Provision of Sports
Figure 1

Figure one shows how the presence of positive externalities causes sports to be underprovided in the market, Q_{MKT} versus the socially optimal level, Q^*. This provision of sports is inefficient. Individuals do not privately invest as much in sports as is socially optimal. Therefore, social capital is under produced.

Social Capital at the Individual Level

There are difficulties in analyzing social capital at the aggregate level. Therefore, Glaesar analyzes social capital on the individual level. Glaesar defines individual social capital as the "set of social attributes possessed by an individual" that serve to increase the returns to the individual as they deal with others (2000, 383). Individual's ultimately make the decision to invest in social capital (2000, 382). Rahn and Brehm agree that individuals build trust and other social capital formations, not communities (1997, 2003). They argue that individuals make decisions to sustain social capital (1997, 1017). Additionally,

Astone, et al. state social capital is a "multidimensional attribute of an individual" (1999, 7). They discuss problems in describing social capital as a group attribute (1999, 8). First of all, groups don't only interact with members of the group, but with outsiders as well. Thus the measure of social capital created can not be measured as a direct result of group interactions. Secondly, group membership can not be used as a measure of social capital because not all group resources are available to each individual; not all group resources are public goods. Thus, Glaesar implies that focusing on individual investment is the key to understanding social capital generation; it allows for analysis of how individuals will respond to policy changes and changes in incentives (2002, 444).

This paper narrows the individual definition of social capital and focuses on how tennis generates social capital. Tennis teaches participants the importance of sportsmanlike conduct. Players are expected to be honest and fair when making line calls. Furthermore, tennis players are required to be responsible and to keep track of their scores. Participants must know the rules and conduct of the game before they are allowed to participate. Unlike team sports, tennis players must individually bear the burden, or enjoy the success, of the risks they take. This builds responsibility. While in team sports, players may be able to slack and let their teammates carry them, tennis players must carry their own weight. This teaches accountability. These requirements create a responsible, self-disciplined individual. This generates social capital in the form of acceptable behaviors. The social capital created is "reputational" because individuals know the correct behavior required for interactions. They can then reduce the transaction costs of future interactions by using their reputational signals (1986, 1107).

Production Function for Social Capital

Creating a production function for social capital explains how tennis creates more social capital, compared to team sports. The production function can explain why the socially optimal levels of team sports and tennis differ. It also explains how certain policies effect the production of social capital.

Fukuyama states that social capital is created by what he calls "iterated games" and is continually generated in a spontaneous manner (1999).

This function states that the production of social capital depends on the occurrence of iterated games, the existence of two or more individuals, structure or organization, and a set of existing norms.

Production of social capital= *f* (iterated games, at least two individuals, structure/organization, given existing norms).

Any activity that generates social capital must involve at least two individuals, given the prior definitions of social capital. The activity must provide an opportunity for the individuals to interact in some repeatable function; this is Fukuyama's idea of iterated games (1999). The structure/organization component means interactions will occur in some context, formal or informal. Lastly, the set of given or existing norms effect the

production of social capital. If no norms existed, it would be difficult to create social capital. There would be no standard behavior or acceptable benchmark that could lower transaction costs of future interactions.

Both team sports and tennis provide enough individual and repeated interaction opportunities to generate social capital. Repeated interactions generate the trust or reputation component of social capital. Creating quality reputations requires more than one positive outcome from interactions. Tennis may also be more easily "repeatable" than a team sport. Playing tennis requires only two people and team sports require more people to play the game.

Tennis and team sports provide different types of interactions and norms. Tennis promotes responsibility, honesty, and self-reliability. Team sports promote teamwork, but may not promote honesty to the same degree because officials and coaches are almost always present. Furthermore, team sports may not produce self-reliability, since team members can rely on others or slack and let their teammates carry them.

Tennis is less structurally supervised than team sports. Tennis lessons are run by coaches, as are team sports practices. However, actual matches are not officiated unless a player calls for a line judge or official. Structural differences between tennis and team sports also exist in after the event socialization. Tennis matches, in adult leagues and tournaments, encourage socialization with opponents and players through club activities like luncheons.

Consequently, tennis produces social capital in a structurally different way that enforces a different set of norms from team sports. If social capital is assumed to be the reputation one creates due to certain observable behaviors, then tennis produces more social capital. It creates a strong reputational signal and enforces the norms of honesty and self-reliability that are crucial signals of reputation.

Tennis creates a more efficient level of social capital than team sports. It requires fewer inputs in terms of total players and thus tennis has lower average costs of creating social capital. It also produces more social capital per unit of activity than team sports. If social capital is defined at the individual level as the "set of social attributes possessed by an individual," then tennis produces more social capital (Glaesar 2000, 383). Tennis produces social capital using a different set of norms than team sports. These norms allow for tennis to create more individual social attributes per unit activity than team sports. Since more attributes are created, more social capital is created. Conversely, team sports are produced under a different set of norms, like reliance on others, which can detract from the creation of social capital. Less social capital is produced per unit activity of team sports.

Given this production function, some sports may produce more social capital because they better influence one or more of the factors of production. Tennis better influences norms that build reputation and proper behavior. Tennis also structurally better enforces creation of social capital based on these norms. Since there is less direct supervision in

tennis, the norms must be followed by individual choices and decisions. If participants do

not follow the norms, officials will enforce them. Still, in tennis, individuals' adherence

to norms has a chance to fairly govern play before outside forces are called upon.

Individuals are then responsible to cooperate with opponents in order to play the game.

Tennis answers the question of how to produce social capital through sports. It is then

worth analyzing the social costs of tennis and team sport provision. Costs are examined at

society's level, not the individual level, because society benefits from social capital. The

private costs and benefits of investment in social capital will be discussed later, in the

form of an investment function.

 The marginal social costs of providing team sports versus tennis may differ. Team sports

also generate social capital and positive externalities, but may create negative

externalities as well.

Fukuyama asserts that while social capital creates positive externalities, it can also create

negative externalities (1999). He explains this by pointing to groups that obtain social

capital internally by acting with hostility and suspicion to outsiders (1999).

To clarify positive and negative externalities created by sports, Stempel discusses tennis's

position relative to other sports. Stempel depicts tennis as "restraining physical violence,"

dominance, and contact (2005, 426). Violent and physical team sports could produce

negative attitudes towards others. People create negative social capital if they interact in

such a way as to achieve domination of outsiders. The Mafia and the Ku Klux Klan are examples of groups who create negative social capital (Fukuyama, 1999).

Since team sports produce negative externalities as well as positive externalities, the production of team sports has higher social costs than tennis. Thus the marginal social costs of team sports are greater than the marginal private costs due to these negative externalities. By contrast, participation in tennis produces mainly only positive externalities. Any external costs are trivial and so the marginal social costs of tennis provision are equal to the marginal private costs. This is shown in figure two A. Even assuming tennis and team sports produce exactly the same type of social capital, and the same benefits to society, team sports would still have higher social costs. Referring to figure two B, the presence of external costs generated by team sports means the socially optimal level of team sports, Q*, may be less than the quantity the market demands, Q_{MKT}. This depends on the magnitude of the marginal external costs and marginal external benefits. Tennis is better at creating net social capital because it produces more social capital. Its production of positive externalities is not offset by the generation of negative externalities. Therefore, the market will over provide team sports and under provide tennis. In figure two A, the socially optimal level of tennis, Q*, is greater than

the quantity the market demands, Q_{MKT}.

Figure 2 A
Market For Tennis

Figure 2 B
Market for Team Sports
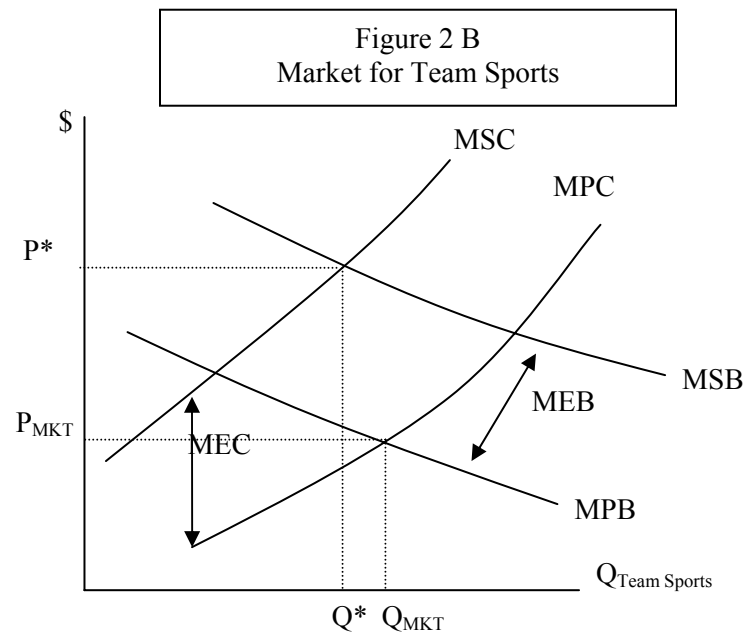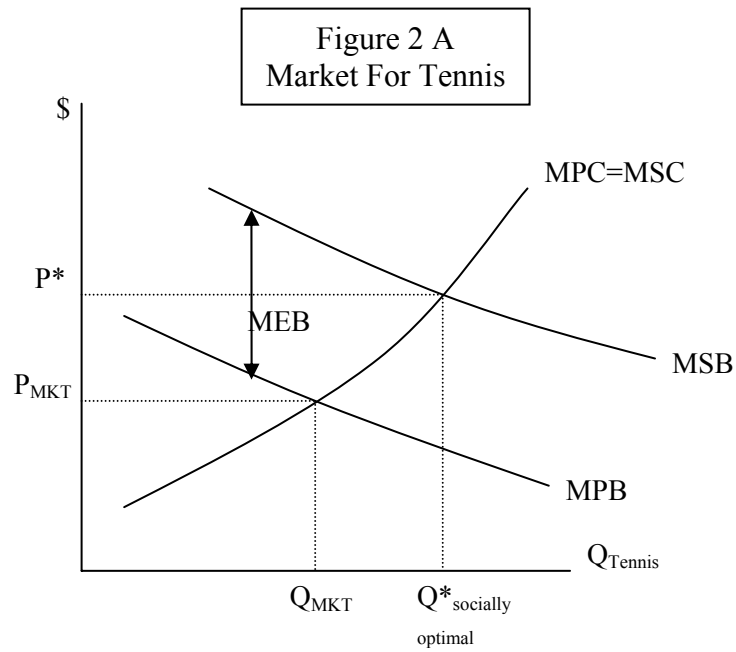
Trends of Private Investment

Putnam insists policies should be created to increase individual incentives to invest in

social capital; this can be achieved through increasing the benefits of individual

investment (1993). He suggests that there has been a notable decline in social capital due

to factors such as women working in the labor force, the increased mobility of the

population, demographic transformations, and the "technological transformation" or

privatization of leisure time (1995). He believes these trends have decreased membership

in organizations, which he asserts play an important role in creating social capital.

Therefore, the overall demand for social capital, or the private benefits of investment in

social capital, falls. In figure three, this is represented by MPB falling from MPB_0 to

MPB_1. The new output level, Q_1, is now farther from the socially optimal level of social

capital, Q^*, than the initial level of Q_1.
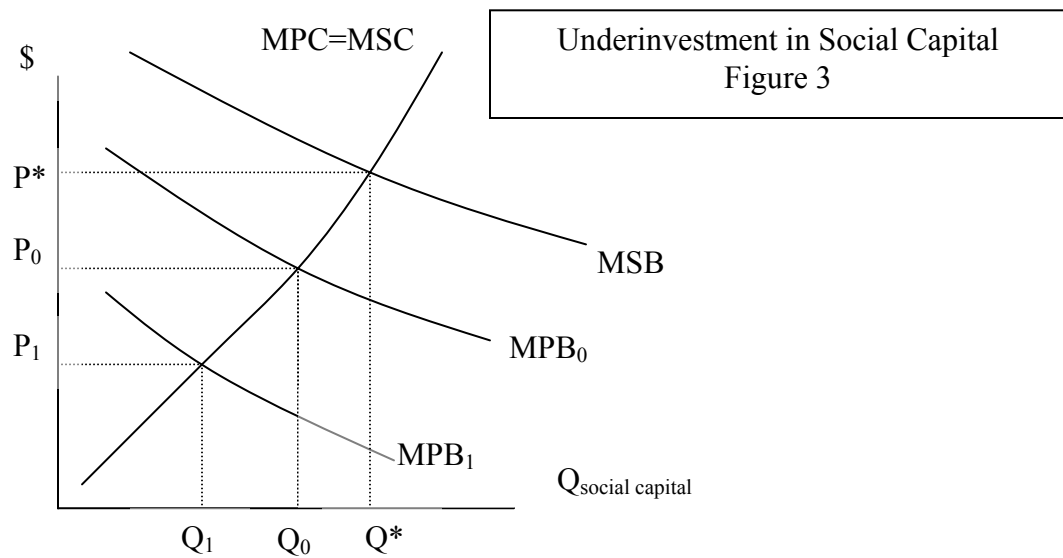
Social Capital Investment Function

Glaesar et. al present an investment function for individual level social capital

investment. The authors describe factors that impact social capital investment. Investment

in social capital rises with the discount factor, "occupational returns to social skills," age

before 50, and the initial stock of social capital in a community (2002, 441). Investment

17

is negatively related to mobility, the wage rate, or opportunity cost of time, the rate of depreciation, and age after 50. In a separate article, Glaesar states that social capital has a positive relationship with longer time horizons (Glaesar 2000, 392). Schuller accordingly insists that social capital must be viewed with a long term perspective, since its generation takes time (95).

Sobel states that social capital appreciates with use (2002, 145). This is because early investments of social capital are costly, but trust increases due to past experiences and social capital begins to appreciate (2002, 150). Furthermore, Glaesar et al. propose social capital has a lifecycle effect. They claim as age increases, social capital increases until it reaches a maximum around age of 50 (2002, 448). At this point, social capital decreases as age increases. Putnam also states that stocks of social capital are "self-reinforcing and cumulative" (1993). This suggests individuals or groups with more social capital to begin with will accumulate more than those who have less social capital initially. Robison et al. suggest social capital is durable and that its degrees of durability can vary (2002, 10).

Taking these factors into account, an investment function for the individual level of investment in social capital can be created. This function examines the investment in social capital through sports. The individual's goal is to maximize the net benefits of investment by investing until the marginal benefits equal the marginal costs of investment, or $MB_I = MC_I$.

Table 1
Investment Function in Social Capital
Through Tennis

Investment Factors	Relationship to investment in social capital
Discount rate	**-**
Expected Value of Expected duration of asset	**+**
Depreciation rate	**-**
Age ≤ 50	**+**
Age >50	**-**
Society's initial stock of social capital	**+**
Wage	**-**
Equipment Costs	**-**
Potential injury Costs (medical costs and foregone wages)	**-**
Expected use of asset (appreciation)	**+**
Private Utility from sports participation	**+**
Expected Value of Profit Potential (Professional Tennis)	**+**
Individual Health Benefits	**+**

This investment function considers such costs as the wage, or the opportunity cost of time, equipment costs, and the potential costs of injury. Injury costs include the cost of lost wages if an individual is unable to work after injury and the medical costs of treating the injury. As these costs increase, the investment by the individual will decrease, all else equal.

The discount rate is negatively related to investment in social capital because a higher discount rate implies a lower value of the future. Individuals with higher discount rates have higher time preferences. They discount the future more heavily and value the

present more highly. Social capital is a benefit received in the future. Those who value the future more, and thus have lower discount rates, will value the future benefits of acquiring social capital more highly. All else equal, individuals with lower discount rates will receive greater benefits from social capital investment. The discount rate differs for each individual and is a matter of tastes and preferences.

The private utility from sports participation is positively related to investment in social capital. The more an individual receives utility from playing tennis, the more they will play tennis and invest in social capital. Diminishing marginal utility will affect the level of an individual's investment in social capital. However, utility is still positively related to social capital investment and as utility increases, investment will also increase, but at a decreasing rate.

While not at the recreational level, investment in social capital through tennis is positively related to profit potential. At the professional level, a benefit of playing tennis is prize money received from winning tournaments and from sponsorships. At the college level, a benefit of playing tennis is reduced tuition through scholarships. This is like receiving income with the stipulation that it be used for tuition. As the expected value of these benefits increases, investment will also increase. For recreational players, the probability of winning a major tournament is zero. Therefore, the expected value of the potential profit will be zero and will not affect the investment function.

Health benefits are also positively related to investment in social capital through tennis. The Tennis Industry Association's research confirms that at least 55 percent of continuing players cite health as a significant reason they play tennis on a regular basis ("Tennis Participation"). Individuals may view health benefits as increasing life expectancy and their ability to participate in other physically demanding activities from which they derive utility. The benefits of increases in individual health also impact society by raising the productivity of labor; these health benefits create positive externalities. Yet the individual will not account for the way in which their own health improvements benefit society.

Unlike Glaesar's model, mobility is not included as a variable in this investment function. If social capital investment occurs at the individual level, mobility would have less of a detrimental effect on social capital. Glaesar defines individual social capital as the "set of social attributes possessed by an individual" that serves to increase the returns to the individual in future interactions (2000, 383). Therefore, mobility is no longer an issue. If social capital is an individual attribute, the individual can take this "reputational" social capital to a new location. People will see this reputation signal and lower transaction costs of interaction will still occur.

The United States Tennis Association (USTA) increases the mobility of social capital by facilitating the continued use of tennis to generate social capital. The organization encourages tennis participation through a variety of leagues, tournaments, lessons, and tennis social activities. The USTA operates seventeen different sections that encompass

the entire United States including Alaska and Hawaii ("USTA Sections"). Therefore, when an individual moves they can quickly join another league or activity offered by the USTA. Their reputational signal is still easily recognizable.

The depreciation rate is negatively related with investment in social capital. If the depreciation rate is high, there is less incentive to invest in social capital. This is because the expected return from investment is lower. Social capital depreciates over time because methods of interaction change and people move or leave networks. Furthermore, Axelrod states that norms can change quite rapidly (1986, 1096). If empirical analysis were possible, the depreciation rate for investment in social capital through tennis would likely be lower than for investment in team sports. Social capital generated through tennis may not depreciate as quickly as other social capital. This is because tennis allows for easier continued use which offsets the depreciation. Prerequisites for tennis participation involve adequate health; this health implies the continued use of tennis is possible. The USTA furthermore facilitates the continued use of tennis as a means of generating social capital. The Tennis Industry Association states that the availability of lessons and teams increases the likelihood of continued play. Forty percent of continuing tennis players have played on a tennis team. Moreover, forty-nine percent of these tennis players have also taken tennis lessons. Since the USTA provides lesson and league opportunities, it decreases the depreciation rate of social capital generated.

Secondly, the depreciation rate for investment in social capital through tennis is likely lower to begin with. The norms of respect and self-reliance and honesty generated by

tennis do not change quickly over time. Norms created by team sports, such as how to interact with team members, or how to rely on others, may change more rapidly over time. This may lead to a higher depreciation rate for social capital generated by team sports.

The expected value of the duration of the asset influences investment in social capital. If the asset won't last long to provide benefits, individuals won't be willing to invest much in the asset. Robison et al. suggest social capital is durable, but that its degrees of durability vary (2002, 10). Tennis has the potential to be a way of generating durable social capital. The durability of the asset depends on the individual's willingness to maintain it, through use, to offset depreciation. Therefore, the expected value of the duration of the asset measures the probability the individual will make use of the asset's duration. The duration of an asset is related to age. As an individual ages, the expected value of the assets duration falls. The expected value measures the probability the individual will live long enough to reap the benefits of the asset. Tennis should increase the duration of the asset and lead to more investment.

Glaesar et al. also assert age capital has an inverse u-shaped relationship with age. They argue investment in social capital increases with age until around age 50; at this point, investment in social capital begins to decline with age (2002, 448). They present this as the classic age function for investment in social capital.

The age function for social capital investment in tennis differs from the classic age function. Tennis can be played socially and recreationally much longer than team sports because it is not as physically strenuous. Individuals will invest more in social capital, at most ages, because they believe they will be able to play tennis for an extended period of time. In fact, league tournaments still exist for those 85 years and older. The USTA hosts championships each year for Super Senior teams, comprised of adults 60 years of age and older. In 2006, there were 61 men and women's teams from the seventeen USTA sections ("Super Senior"). There is then more time for investment in social capital, through tennis, to generate returns to individuals. An increase in age may not lead to as much of a decrease in social capital investment, after a certain age level, as Glaesar et. al's model predicts.

The age/investment function for tennis still has an inverse u-shape. Since the returns to social capital occur over time, a younger person has more time to reap the benefits from social capital. They will invest more in social capital because their returns are greater than someone with little time left. Individuals may decide not to invest more after a certain age due to health, the costs of investment, and the size of the benefits from investment.

This age function then depends on the costs of investment. These costs are wages, equipment, and potential injury costs, such as medical bills and foregone wages if injury prevents an individual from working. Social capital investment peaks at a certain age, and plateaus beyond this level. The costs of learning tennis may increase beyond this

maximum age. Potential injury costs may also increase as age increases. Aging individuals have longer recovery periods in the event of injury, leading to increased medical costs. Yet the probability of injury is much lower for tennis than physical team sports. Therefore, the costs of investment are lower for tennis as age increases. This may explain why the investment age function plateaus while the classic age function begins to decrease.

When an individual retires, the cost of investment may fall. The wage cost is no longer a valid measure of investment costs. The individual now has more leisure time, so the cost of leisure time previously measured by the wage, has fallen. Retired individuals also face lower costs of lost wages in the event of injury, since they are no longer employed. Overall, as age increases the cost of continued investment falls for tennis and investment basically plateaus for a range of ages.

Health also affects this age/investment relationship. The Tennis Industry Association reports that 55 percent of continuing tennis players participate in tennis due to the health benefits ("Tennis Participation"). Tennis players may then have higher levels of health to begin with. Consequently, increasing age may not decrease investment in social capital as rapidly for tennis players as it may for other sports. High levels of health imply investment can continue at a fairly stable rate for a longer period.

The peak in investment may be related to the opportunity cost of time at this maximum age, shown in figure four. The costs of injury, due to foregone wages, may be greatest at this peak in investment. This is when an individual is earning their highest potential wages. This may limit continued investment in social capital and cause investment to reach its maximum. These costs could pull down the investment in social capital as age increases. The investment function may also reach a maximum because new tennis players are not likely to start playing tennis past a certain age. However, if they have already invested in social capital through tennis at this age, they will continue to do so.

Investment does eventually decline as age increases. However, this decline is mitigated by factors such as health and the decreased cost of investment. In figure four, the sharp decline of investment likely occurs since investment in social capital takes place at a fairly steady rate until it becomes too costly to continue investment. These costs are due to health issues and the low value of investment associated with a lower life expectancy.

Age Investment Function (Classical versus Tennis)
Figure 4
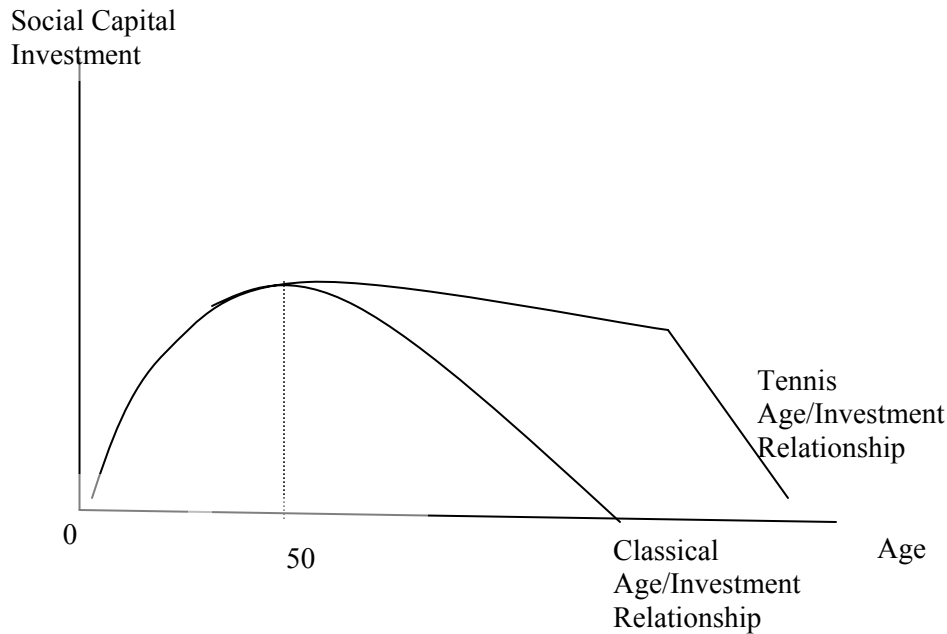
Unlike Glaesar et. al's model, this investment function excludes the returns to social

skills. This model looks at investment from all age groups. Children do not have an

occupation and some adults may be retired. Glaesar uses this variable to conclude jobs

with greater returns to social skills will induce more investment in social capital (2000,

384). However, there are non-occupational benefits from investing in social capital; these

benefits occur in leisure time and at retirement. Reducing transaction costs has benefits

outside of work. Making friends and meeting new people is facilitated through the use of

social capital. There is evidence social capital is valued for its non-occupational benefits.

At retirement, people see the benefit of social capital as they use their reputational signals

to meet new people and congregate together in a retirement community. Retirement

communities are often built entirely around social sporting activities, like tennis.

Society's initial stock of social capital is positively related to individual investment in social capital. The initial stock of social capital is the initial stock of social capital that society possesses (Glaesar et. al 2002, 455). Acquiring social capital is more valuable if others also possess social capital; this allows for the reduced transaction costs of interaction. Social capital is defined as a reputational signal that allows for easier interactions. Therefore, if no one possesses social capital, the signal will not be recognized and will have no value. The more people who possess social capital, the more an individual's social capital will be worth. Specifically, in tennis, learning the rules and codes of conduct has value only if there are others to play with.

The variable, "expected use" is positively related to investment in social capital through tennis. It measures whether the individual expects the investment to be a singular or repeated investment. The investment will be more worthwhile if the individual plans to continue interacting and playing tennis with others. The USTA facilitates continued participation in tennis and may increase the individuals expected use, therefore increasing investment.

Figure five shows an individual choice model. This model explains an individual's response to changes in the investment factors. Initially, the individual has a given income of I_1 and is making a choice between other goods and tennis.
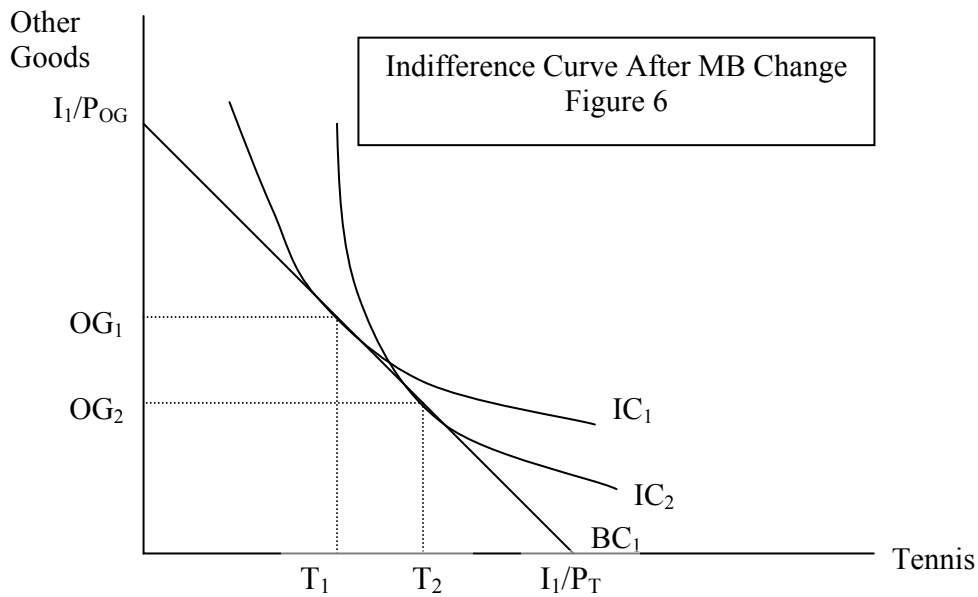
The price of tennis is the price of one unit of tennis activity. It includes the equipment

costs, potential injury costs, and the opportunity cost of tennis, the wage.

The individual starts with indifference curve IC_1. Their marginal rate of substitution is

positively impacted by the utility received from playing tennis, the duration of social

capital created through tennis, society's initial stock of social capital, expected use of the

asset, age before 50, and the health benefits of tennis. The MRS is negatively impacted

by the discount rate, which decreases the present value of the marginal benefits of tennis,
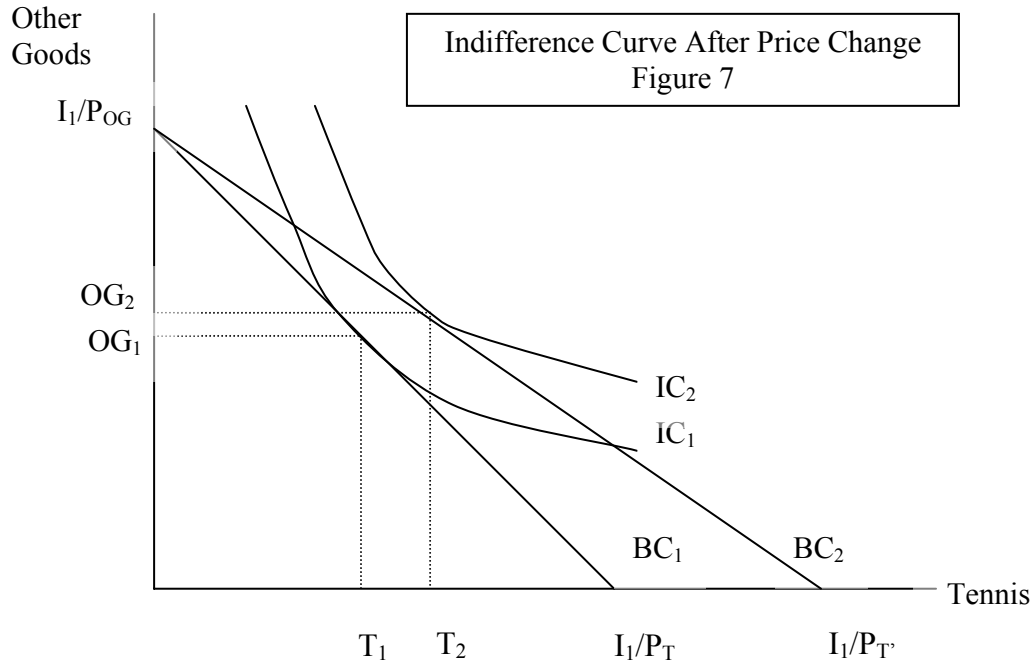
the depreciation rate, and age after 50.

Other
Goods

| Initial Indifference Curve |
| Figure 5 |

I_1/P_{OG}

OG_1

IC_1

BC_1

T_1 I_1/P_T Tennis
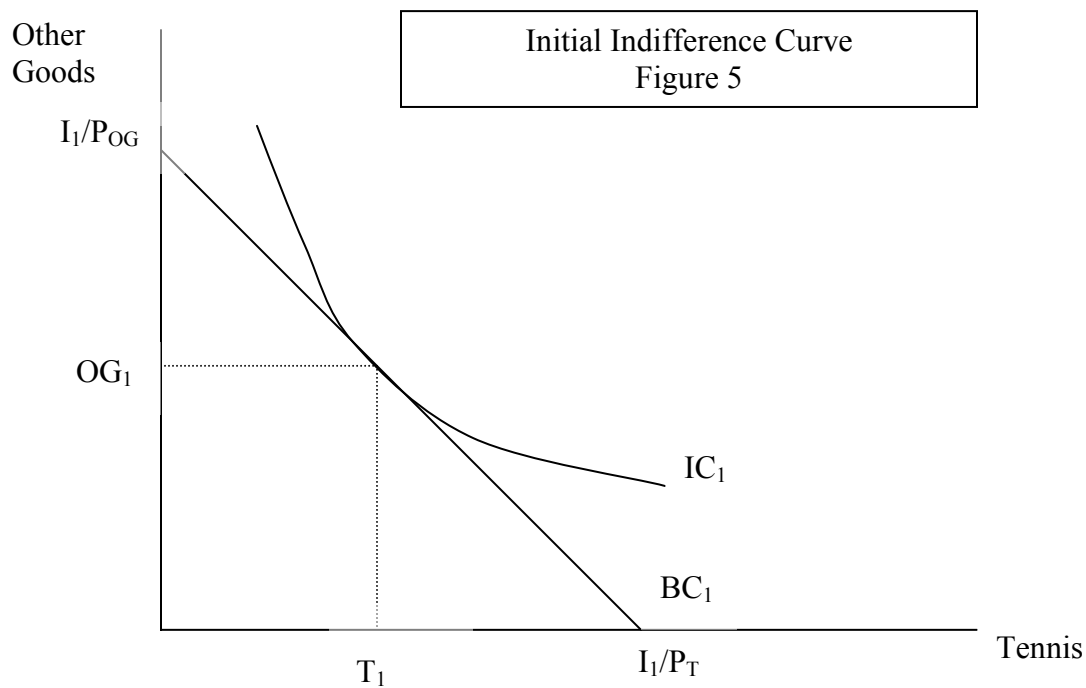
Therefore, IC_1, in figure five, incorporates the factors described above that change the

marginal benefits of tennis. However, if the above factors change, the MRS and the shape

of the indifference curve will change. If the depreciation rate increases, for example, the

marginal benefits of tennis will decrease and the indifference curve will flatten out. If the

health benefits from tennis increase, the slope of the indifference curve will change. IC_2 is then steeper than IC_1. This is illustrated in figure six. The individual will, all else constant, be willing to give up more other goods to get an additional unit of tennis. When the shape of the indifference curve changes and the quantity of tennis increases, there is more investment in social capital.

Other
Goods

I_1/P_{OG}

Indifference Curve After MB Change
Figure 6

OG_1

OG_2

IC_1

IC_2

BC_1

Tennis

T_1 T_2 I_1/P_T

If the price of tennis changes, due to a change in equipment, injury, or wage costs, the budget line will rotate around the point (I_1/P_{OG}). In figure seven, when the price of tennis decreases, the budget constraint rotates from BC_1 to BC_2. With an increase in real income, the individual now purchases more of both goods; the quantity of tennis increases from T_1 to T_2 and the quantity of other goods increases from OG_1 to OG_2. Depending on taste and preferences, when the price of tennis decreases, the quantity of other goods could increase, decrease, or remain the same. However, the quantity of tennis

will still increase. Therefore, when the relative price of tennis decreases, the quantity of

tennis increases and more social capital is created.

Other
Goods

I_1/P_{OG}

Indifference Curve After Price Change
Figure 7

OG_2
OG_1

IC_2
IC_1

BC_1 BC_2

Tennis

T_1 T_2 I_1/P_T $I_1/P_{T'}$

This analysis explains how the investment function affects individual choice. In table

two, this investment function also shows that tennis positively impacts almost all of the

investment factors. When the factor is positively related to investment, tennis amplifies

the positive effect. Conversely, when the factor is negatively related to investment, tennis

mitigates this negative effect. These results are summarized in table two. Therefore,

tennis lowers the marginal costs and increases the marginal benefits of investment in

social capital. Incentives to invest in social capital through tennis should be greater than

the incentives to invest in social capital through team sports.

Table 2
The Impact of Tennis on Investment in Social Capital Compared to Team Sports

Investment Factors	Relationship to Social Capital Investment	Effect of Investment Through Tennis Compared to Team Sports	How Tennis Impacts the Investment Factors Compared to Team Sports
Discount rate	-	Varies by individual; not uniform for all sports players.	Can't determine.
Expected Value of Expected duration of asset	+	Increases the expected duration and increases investment.	+
Depreciation rate	-	Decreases depreciation rate and increases investment.	+
Age ≤ 50 Age > 50	+ -	Decreases the negative age effect of social capital. This effect then reduces investment by less.	+
Society's initial stock of social capital	+	No effect.	No effect.
Wage	-	No effect.	No effect.
Equipment Costs	-	Lower equipment costs increase investment.	+
Potential injury Costs (medical costs and foregone wages)	-	Tennis lowers the potential of injury, lowering injury costs and increasing investment.	+
Expected use of asset (appreciation)	+	Increases the expected use of asset through groups like the USTA. Increases investment.	+
Private Utility from sports participation	+	Can not make interpersonal comparisons of utility.	Can't compare.
Expected Value of Profit Potential (Professional Tennis)	+	Profit potential likely higher for higher profile team sports.	-
Individual Health Benefits	+	If played regularly, tennis may increase health benefits more and increase investment.	+

Table two, allows for the analysis of an individual choice model between team sports and

tennis. Based on the fourth column in table two, tennis positively impacts the marginal

benefits of acquiring social capital through participation in tennis, compared to team

sports. This should change the marginal rate of substitution and the shape of IC_1 in figure

eight. IC_2 will then be steeper than IC_1. Individuals should now be willing to give up

more team sports to get an additional unit of tennis if the benefits of tennis, in terms of

social capital generation, are greater. The quantity of team sports should fall from TS_1 to

TS_2 and the quantity of tennis should increase from T_1 to T_2. This shift should increase

investment in social capital through tennis.

Choosing Between Tennis and Team Sports
Figure 8
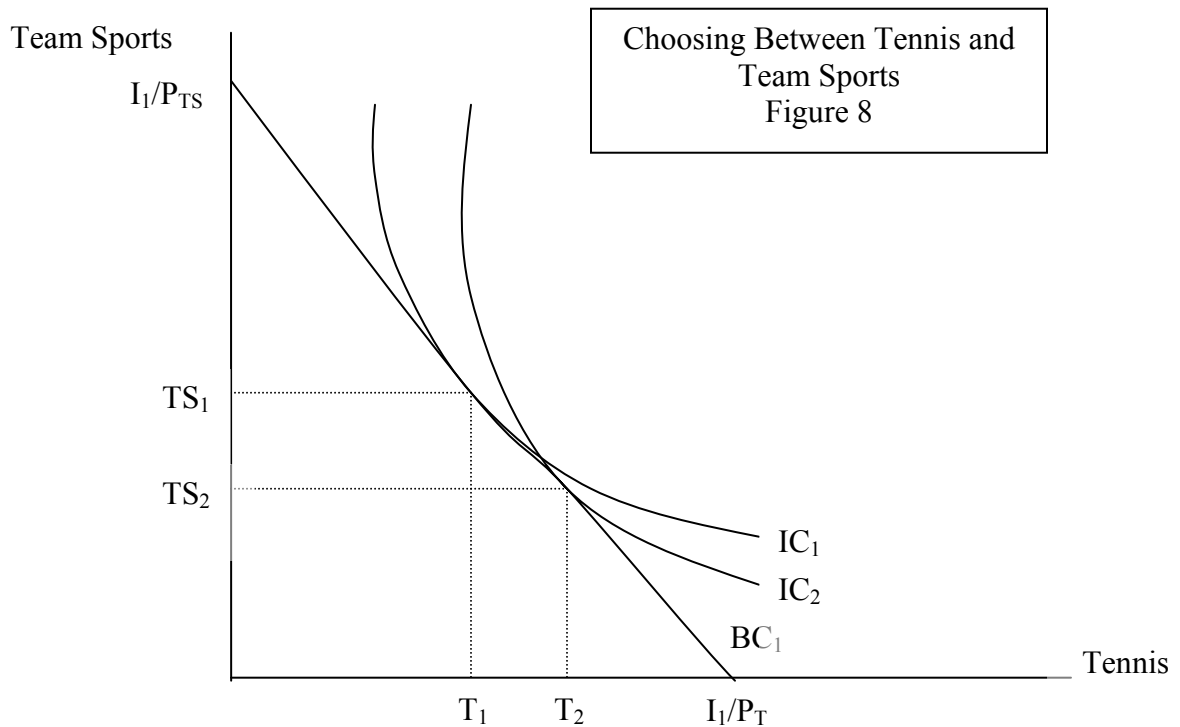
If the incentives to invest in tennis are greater, it may seem the provision of tennis does

not need to be encouraged. Perhaps, nonprofits should not receive special tax benefits to

provide tennis. People will invest anyway. However, people probably don't analyze their

investment functions or their individual generation of social capital. Even if they did,

they would only analyze the individual benefits of obtaining social capital, not society's

benefits. Individuals likely do not fully understand the private benefits of investment, let alone the social benefits.

In the figure nine, as table two suggests, tennis increases the marginal benefits of social capital investment, shifting the MPB curve from $MPB_{Initial}$ to MPB_{Tennis}. Participation in tennis is at $Q_{Tennis,}$ still below the socially optimal level of Q^*, due to the presence of positive externalities.

Underinvestment in Tennis
Figure 9
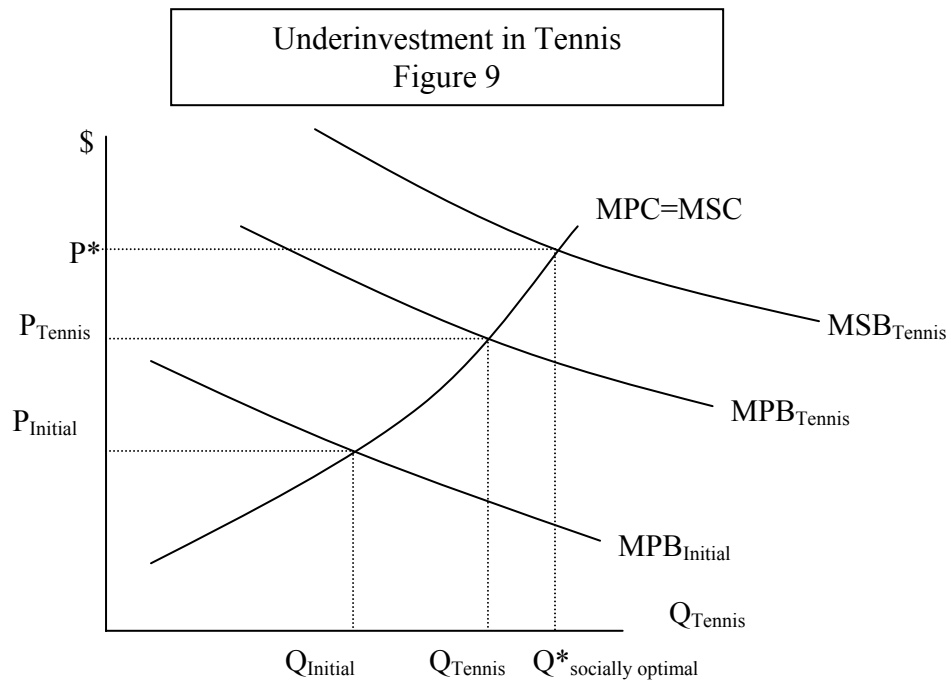
Incentives for private investment still do not encourage enough participation in tennis. Intervention must occur to reach the socially optimal level.

The Nonprofit Role

Illustrating that tennis generates a great deal of social capital does not suggest how to best provide tennis activities in the United States. Public, private, or nonprofit sectors could all provide tennis as a sports activity.

There are inherent problems with providing tennis through the for-profit sector due to positive externalities. A for-profit firm will under provide tennis, resulting in market failure.

This market failure could be corrected through government subsidies. Rodney Fort suggests all subsidies have opportunity costs (2003, 302). Therefore, a subsidy may not be the most efficient solution to solve the problem of market failure. Furthermore, for-profit firms must be trusted to use subsidies properly. It is unclear whether the subsidies would ensure equitable outcomes.

In addition, a for-profit firm does not use the full amount of a subsidy to produce more output. Through subsidies, the socially optimal level may not be met in the market. In figure ten, the subsidy to for-profit firms lowers the cost of tennis provision to producers. Since the subsidy to the firm acts as a price reduction, the firm will supply more at every price level. Supply shifts from S_0 to S_1. S_0 represents the total marginal costs to the firm; S_1 is the marginal cost the firm receives from the market. The difference is provided by the government, through the subsidy. The firm receives $(P^{'}-P_1)$ times Q^* from the government as the subsidy, and P_1 times Q^* from consumers. The consumer also benefits

from the subsidy because they pay a lower price; the price decreases from P_0 to P_1. To achieve the socially optimal level, the government would have to provide a subsidy of amount S* per unit to firms. The total amount of the subsidy is S* multiplied by the quantity of output, Q*.

Optimal Subsidy to For-Profit Firms
Figure 10
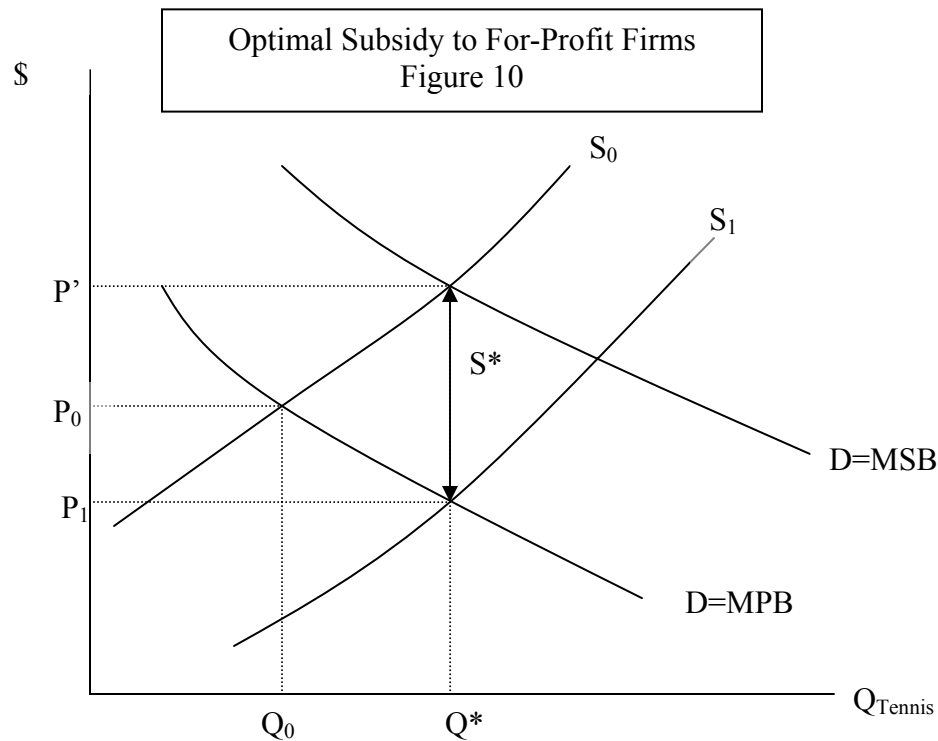
Amounts less than S* per unit will not increase output to the socially optimal level, Q*. Investigating the impacts of subsidies on individual firms will explain why it is difficult for the government to achieve this socially optimal level of output, Q*, through subsidies.
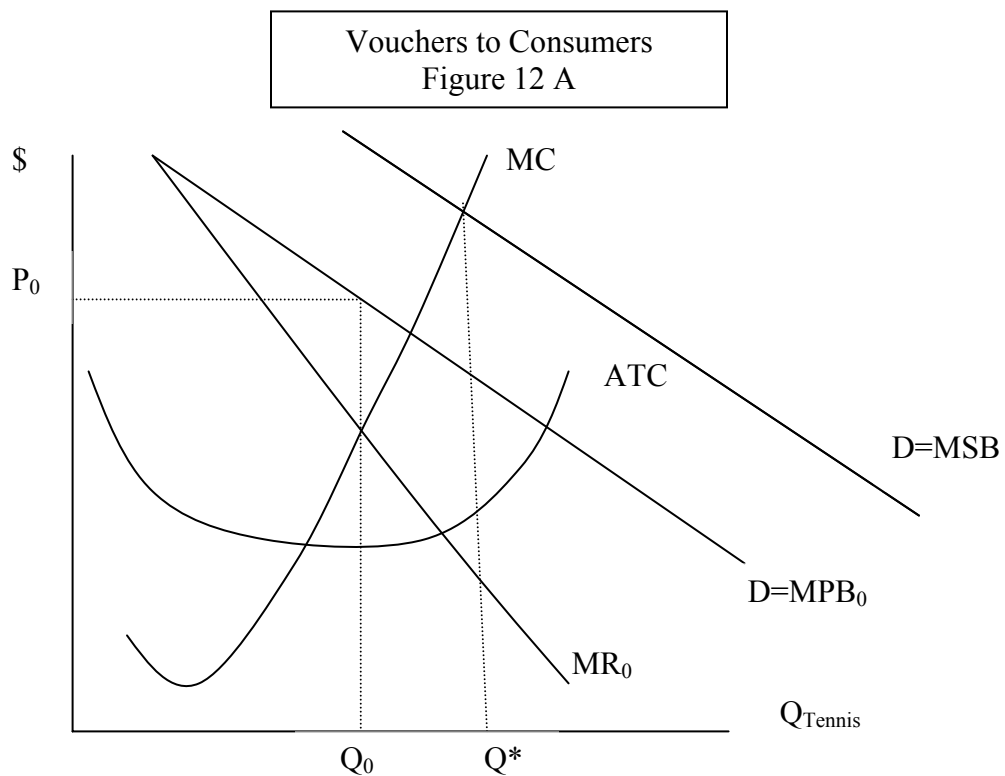
This paper later establishes the need for a single nationwide provider of tennis; therefore, to fully examine the effectiveness of a subsidy, the impact is analyzed on a single major provider of tennis, or a monopoly. Smaller providers of tennis seem to have little impact on the market, especially in the presence of the USTA, a huge provider of tennis.
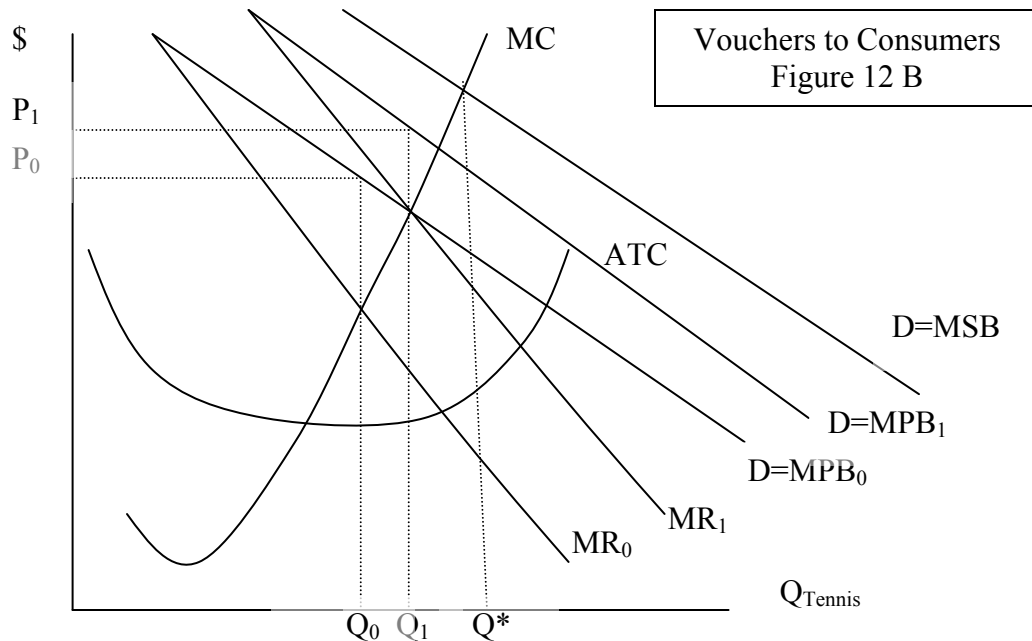
There are inherent problems with subsidies given to a monopolist. A fixed subsidy would

not induce the monopoly to increase output. This type of subsidy acts like a reduction of

fixed costs. Therefore, average total costs would decrease from ATC_0 to ATC_1, but the

marginal costs would remain unchanged, as shown in figure eleven. Even with the

subsidy, the firm would keep output constant at Q_0 and increase profit, due to lower

average costs.

Direct Fixed Subsidy to a Monopoly
Figure 11
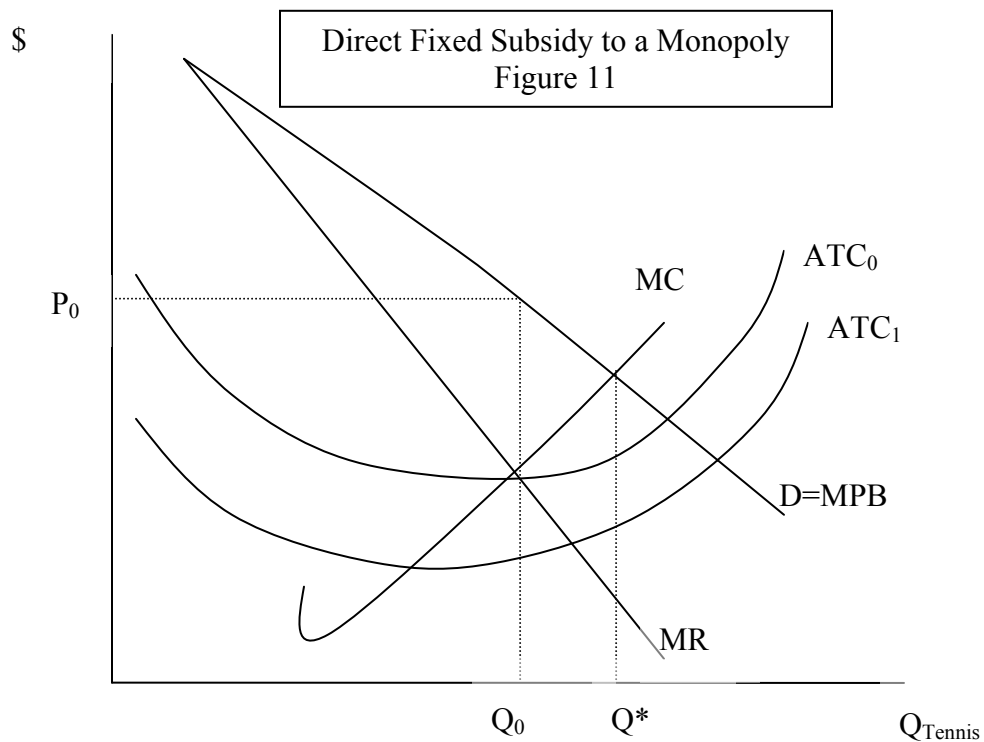
Demand side subsidies may also prove problematic, as shown in figures twelve A

and B. Figure twelve A shows the initial demand for tennis and the quantity

produced, Q_0. As shown in figure twelve B, if the government subsidized

consumers directly, output would increase from Q_0 to Q_1 and price would

decrease from P_1 to P_0. This direct subsidy would be in the form of a voucher for

tennis, not a cash subsidy. As demand and the marginal benefits increase through

subsidies, demand shifts out to MPB_1. Marginal revenue also shifts from MR_0 to

MR_1. Thus the price decreases while quantity increases. The socially optimal

level of output could be reached, but as a result, the MPB would be increased

beyond the MSB. Then marginal revenue would equal marginal costs at the

socially optimal level of output, Q*. It is unlikely the government would provide

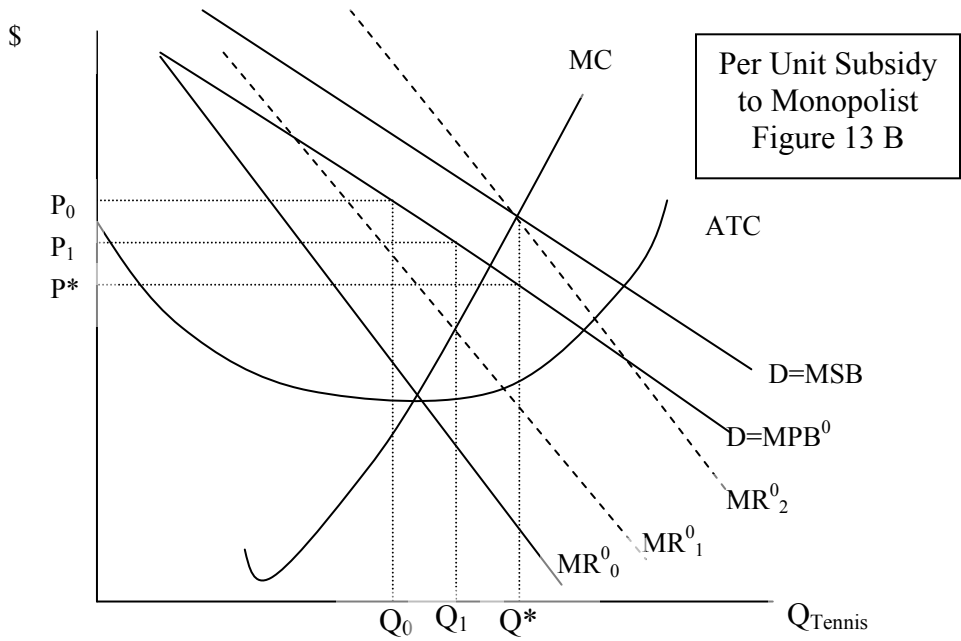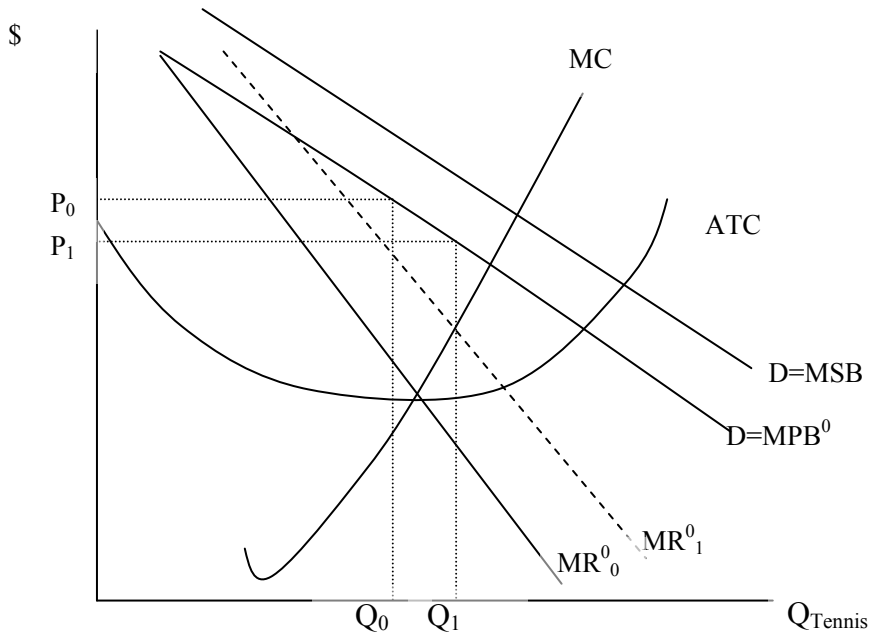subsidies such that the MPB exceeded the MSB because this is inefficient.

Vouchers to Consumers
Figure 12 A

$ | MC | Vouchers to Consumers
Figure 12 B

P_1
P_0

ATC

D=MSB

D=MPB$_1$

D=MPB$_0$

MR$_1$

MR$_0$

Q_{Tennis}

Q_0 Q_1 Q^*

In figure thirteen A, D=MPB^0 is the private demand for tennis. The social demand is

represented by D=MSB; the social demand exceeds the private demand again due to the

positive externalities generated by social capital.

Subsidies are given to the firm as extra revenue per unit and would shift out the marginal

revenue curve. Initially, the marginal revenue curve associated with D=MPB^0 is MR$^0_0$.

With the subsidy, marginal revenue increases from MR$_0^0$ to MR$_1^0$. The subsidy is given

to the firm and would not alter the market demand, D=MPB^0. This would increase output

from Q_0 to Q_1 and decrease the price from P_0 to P_1.

In figure thirteen B, the subsidy could be increased until the marginal revenue curve

equaled marginal cost at the socially optimal level of output, Q^*. Initially, the amount of

the subsidy, per unit, was equal to the distance between MR$^0_0$ and MR$^0_1$ at a level of

output, Q_1. The optimal subsidy, which would allow for the socially optimal level of

output, Q^*, would equal the distance between MR$^0_0$ and MR$^0_2$ at Q^*.

Per Unit Subsidy to Monopolist
Figure 13 A

Per Unit Subsidy to Monopolist
Figure 13 A

Graph with vertical axis labeled $ and horizontal axis labeled Q_{Tennis}. Curves labeled MC, ATC, D=MSB, $D=MPB^0$, MR^0_1, MR^0_0. Price levels P_0, P_1 and quantities Q_0, Q_1 marked.

Per Unit Subsidy
to Monopolist
Figure 13 B

Graph with vertical axis labeled $ and horizontal axis labeled Q_{Tennis}. Curves labeled MC, ATC, D=MSB, $D=MPB^0$, MR^0_2, MR^0_1, MR^0_0. Price levels P_0, P_1, $P*$ and quantities Q_0, Q_1, $Q*$ marked.

This type of subsidy may encourage the socially optimal level of output and decrease the

price to consumers. Some subsidies may solve market failures. However, they may also

prove to be more problematic because their success depends on the type of subsidy and

its correct implementation. Government would have to thoroughly understand the impacts of each subsidy. In many cases, these subsidies may not increase output at all.

An alternative to market provision of tennis is government provision. School PE programs could provide tennis and the government could provide the socially optimal amount of participation, and cover the costs through taxation. There are still problems with government provision. The main problem is the concept of the majoritarian principle. This principle suggests the government, pressured by re-election constraints, makes decisions based on the majority's preference. It is unlikely the majority would prefer tennis above popular team sports. This assumes limited sports activities are provided by the government. Consequently, this result is a form of government failure.

Due to market failure and government failure, the nonprofit sector could solve these problems and provide tennis. They can potentially produce the socially optimal level of output of participation in tennis. Nonprofit organizations can also respond to minority preferences.

The USTA is a donative nonprofit organization that provides tennis activities across the nation. It chooses its equilibrium output level differently from a nonprofit that receives only earned income. Donative nonprofits can offer lower prices than non-donative nonprofits because they can cover part of their costs through donations. If a donative and non-donative nonprofit have the same cost structure, the donative nonprofit could operate at a lower price. Since the USTA is a donative nonprofit it can offer lower prices to

encourage greater investment in social capital through tennis. This moves investment

towards the socially optimal level.

Donative vs. Non-Donative Nonprofits
Figure 14
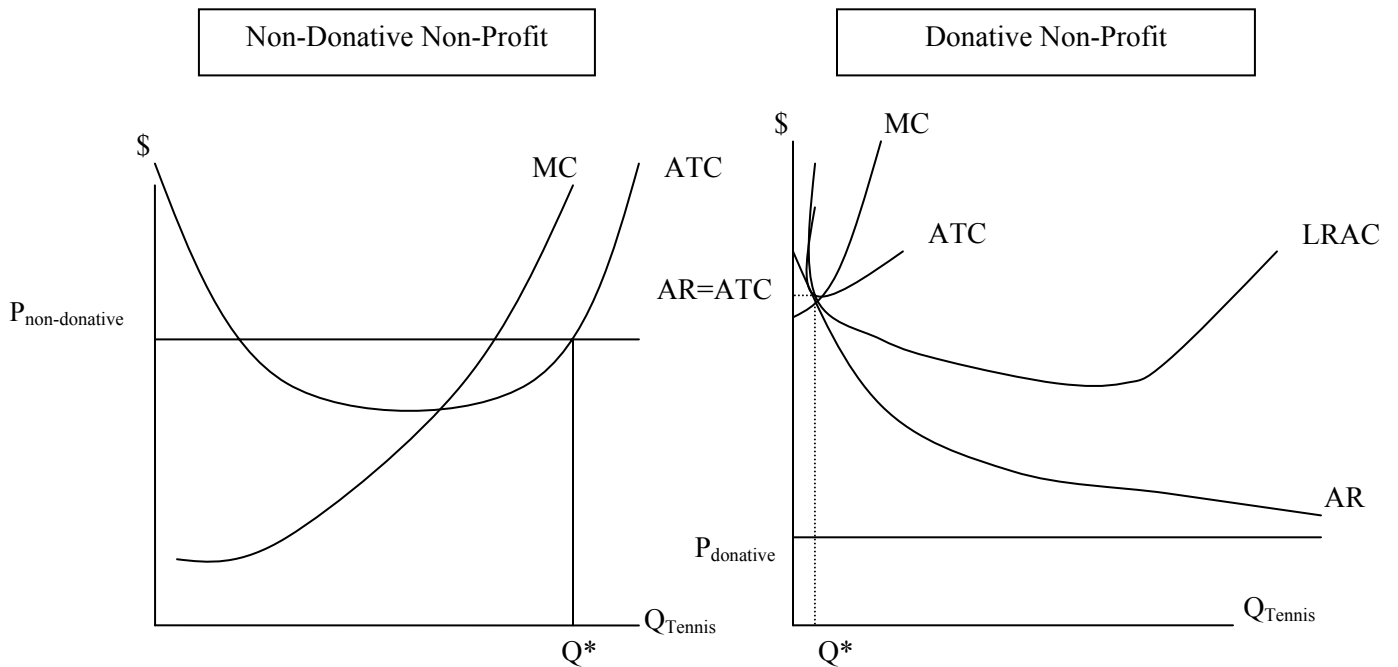
As shown in figure fourteen, donative non-profit organizations will produce, at Q*. They

will just cover their costs and charge a price, $P_{donative,}$ in the market. This price is less than

$P_{non-donative}$. Since there are both nonprofits and for-profit firms in the market for

providing tennis, the market should be analyzed as a mixed market.

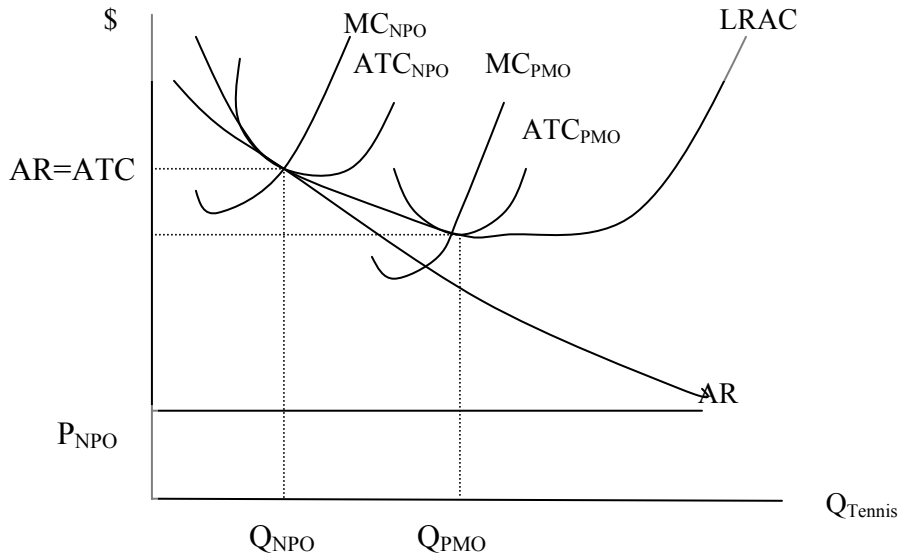## The Mixed Market for Tennis
Figure 15

Figure fifteen assumes nonprofit and for-profit organizations operate under identical cost structures. This assumption implies that at the nonprofit price, P_{NPO}, for-profit firms would be unable to survive; nonprofit organizations would drive for-profit organizations out of the market. However, both types of organizations exist in the market to provide tennis. Some theory alternatively suggests nonprofits have higher cost structures than for-profit organizations. Therefore, both organizations could operate in the market at the same price. The USTA may have higher costs due to mission drift and owner preferences.

Mission drift occurs when a nonprofit undertakes activities unrelated to its mission. This can increase costs by taking workers away from activities where they were more productive. The reverse of specialization and division of labor could occur. The USTA's

activities are all related to providing and promoting tennis, either directly or indirectly. However, the USTA operates the "USTA Tennis and Education Foundation" to give economically disadvantaged youth the opportunity to attend higher education institutions. The USTA provides these youth with athletic scholarships, thus promoting the growth of tennis ("USTA Tennis and Education Foundation"). This may increase the cost of the USTA's provision of tennis.

Owner preferences in nonprofits may also cause these organizations to operate at higher costs than for-profit organizations. Since the nonprofit organization receives donations, the owners can choose to operate at any cost as long as costs are covered through donations and earned income. For-profits are constrained by the market to operate at the lowest possible costs. This explains why nonprofits and for-profits both exist in the market for tennis provision.

In the United States, for-profit organizations that provide tennis are more successful at local levels. These organizations may be country clubs or health clubs in local areas. Conversely, it is easier for one organization to provide tennis at a national level. This organization would realize substantial economies of scale. The USTA is the nonprofit organization that provides tennis nationwide. A national provider allows individuals to meet a greater number of people nationwide, if leagues or teams advance in competition. Leagues are organized so that teams follow the same guidelines and are encouraged to compete in tournaments. A nationwide provider generates more social capital and facilitates the mobility of social capital.

Nonprofits are an effective way to correct market failure in tennis provision for three main reasons, beyond the problems associated with subsidies and government failure. First, nonprofits provide information that allows individuals to better understand the benefits of private investment. This increases their private level of investment, which shifts participation in tennis closer to the socially optimal amount. Secondly, nonprofits lower the cost of tennis provision in a mixed market. Thirdly, when tennis is provided nationally, the mobility of the social capital created is high. This is valuable since Putnam discusses how social capital is falling because people are now more mobile (1995). If the single provider were a for-profit, the market outcome would be undesirable. This analysis ignores the presence of smaller firms providing tennis because their effect seems relatively inconsequential.

Nonprofits provide trustworthy information to individuals. If a nonprofit firm provides more information about the benefits of participation in tennis, then the MPB curve could shift out. The individual choice would then be closer to the socially optimal level, Q*, as shown in figure sixteen. This information must discuss the time issue of the benefits of investment in tennis; benefits may provide returns farther in the future than individuals anticipate.

For-profit organizations also have incentives to provide information about the benefits of tennis. However, nonprofit organizations have an advantage in providing information; they are trusted more because they have no incentive to make profits. Information from

for-profit organizations may be less trustworthy because for-profit firms have incentives

to maximize profit. The USTA can also provide information about the education and

health benefits of tennis at a lower cost, since it is part of their mission. The USTA

informs individuals that investing in social capital, through tennis, can help them attend

universities, through sports scholarships. In figure sixteen, this information shifts the

MPB curve right from MPB$_{\text{without information}}$ to MPB$_{\text{with information}}$ and the new quantity

approaches the socially optimal level, Q*.

Effect of the Information Advantage of Nonprofits
Figure 16
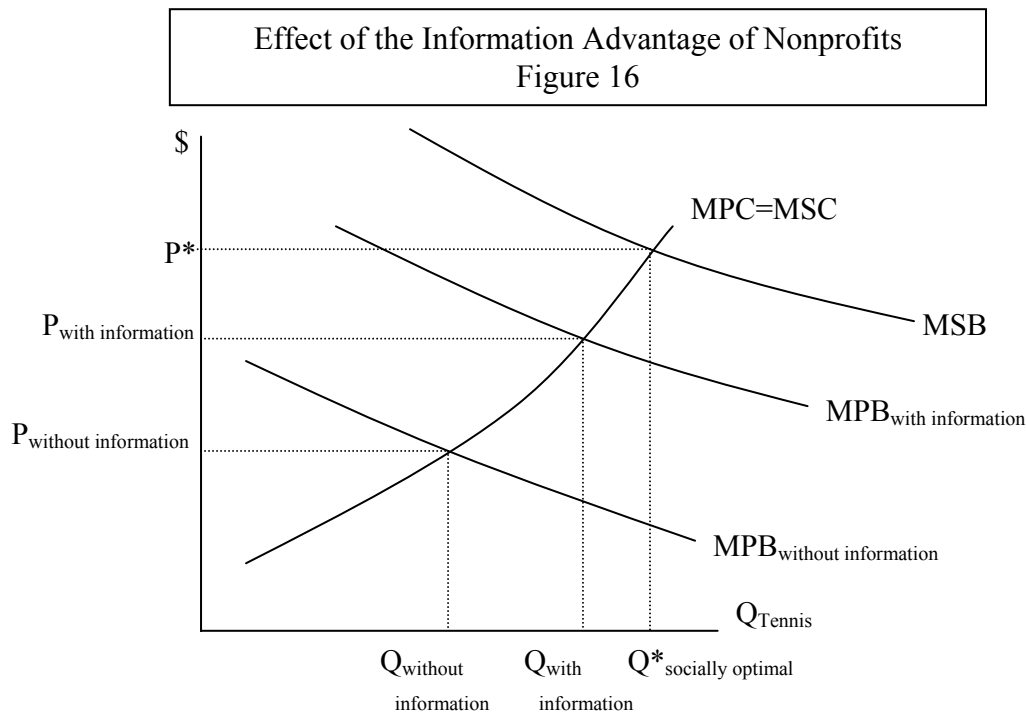
Secondly, nonprofit organizations lower the price of tennis activities when providing

tennis in a mixed market. This increases the level of output, since the largest provider

acts like a monopoly. If this firm lowers the prices, it impacts how smaller firms price

tennis participation.

Effect of Price Advantage of Nonprofits
Figure 17
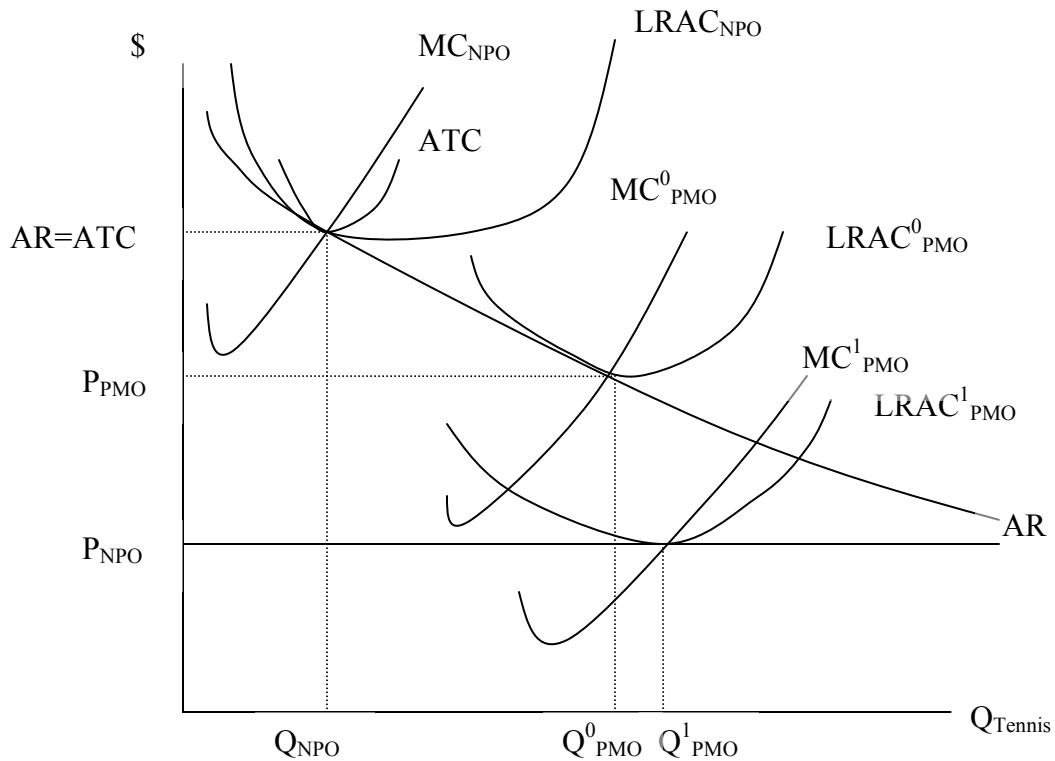
As shown in figure seventeen, the presence of nonprofit organizations in a mixed market reduces the price from P_{PMO} to P_{NPO} and increases total output. The nonprofit has a long run average cost curve of $LRAC_{NPO}$, which corresponds with price P_{NPO}. If there are for-profit firms in the market, they will be pressured by market constraints to operate at their lowest costs. This corresponds with a certain amount of output, Q^0_{PMO}. If a nonprofit enters, they can operate at higher costs, $LRAC_{NPO}$, and still survive if their donations and earned revenue at least cover costs. They could offer a lower price, P_{NPO}, in the market than the for-profit organization. To survive in the market, the for-profit firm must lower its costs so that the minimum of the average total cost curve, $LRAC^1_{PMO}$, is equal to the nonprofit price, P_{NPO}. Without nonprofits in the market, for-profits would not have the same incentives to lower their costs.

The USTA was established in 1881. Its presence in the market has forced any for-profit organizations to lower their costs to the nonprofit price, P_{NPO} ("USTA Mission"). This analysis assumes there is no qualitative difference between the services of the nonprofit and for-profit organizations. In this industry, ownership status does not seem to affect quality in any significant way.

Thirdly, the concept of highly mobile social capital dictates that there should be one national provider. This provider should be a nonprofit institution. If a nonprofit organization was the sole national provider, it would choose an average total cost curve that allowed it to produce as much tennis as possible. Owner preferences, in nonprofit organizations, allow the firm to choose any cost curve as long as they cover the total cost at that level of output.

The USTA is the largest tennis organization worldwide with over 700,000 members ("USTA Mission"). Their mission is to produce as much output as possible and to "promote and develop the growth of tennis" ("USTA Mission").

If a for-profit organization provided these services, there would be efficiency and equity concerns. If all profit maximizing organizations provided tennis in a perfectly competitive market, the quantity produced would be $Q_{Competitive}$ in figure eighteen A. If there was a for-profit monopoly, that firm would produce at $Q_{Monopoly}$.

Competitive vs. Monopoly Provision of Tennis
Figure 18 A
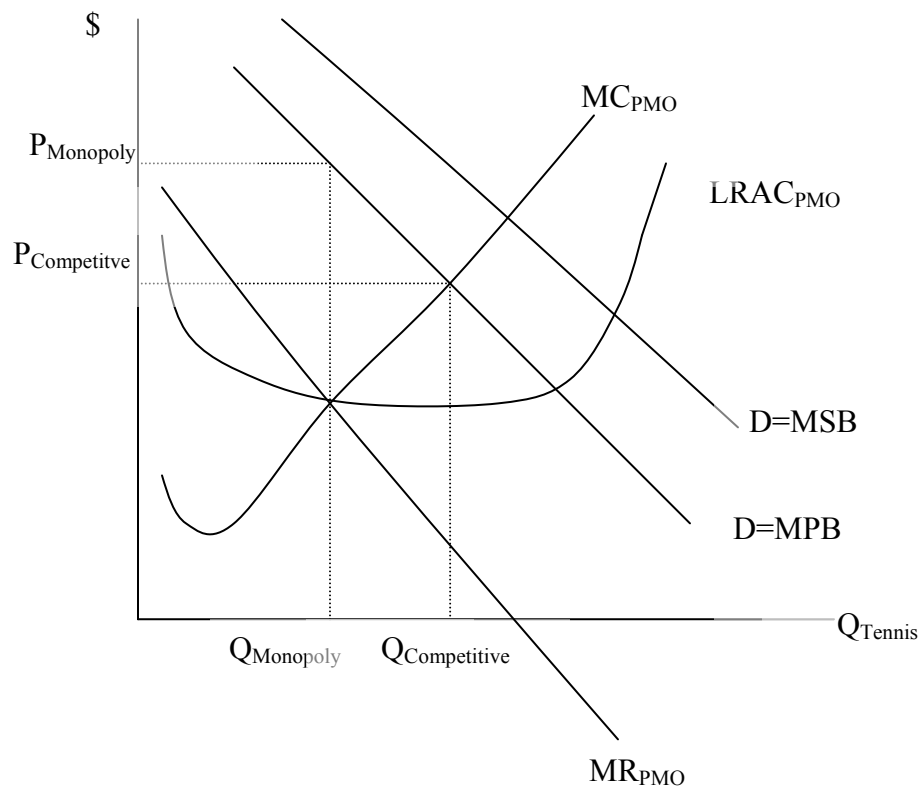
The equilibrium level of output for the for-profit firms would then be farther from the socially optimal level, Q*, shown in figure eighteen B. That is, $Q_{Monopoly}$ is less than $Q_{Competitive}$. The profit maximizing firm has the incentive to restrict output, raise prices, and maximize profits.

Nonprofit vs. Competitive vs. Monopoly Provision of Tennis
Figure 18 B
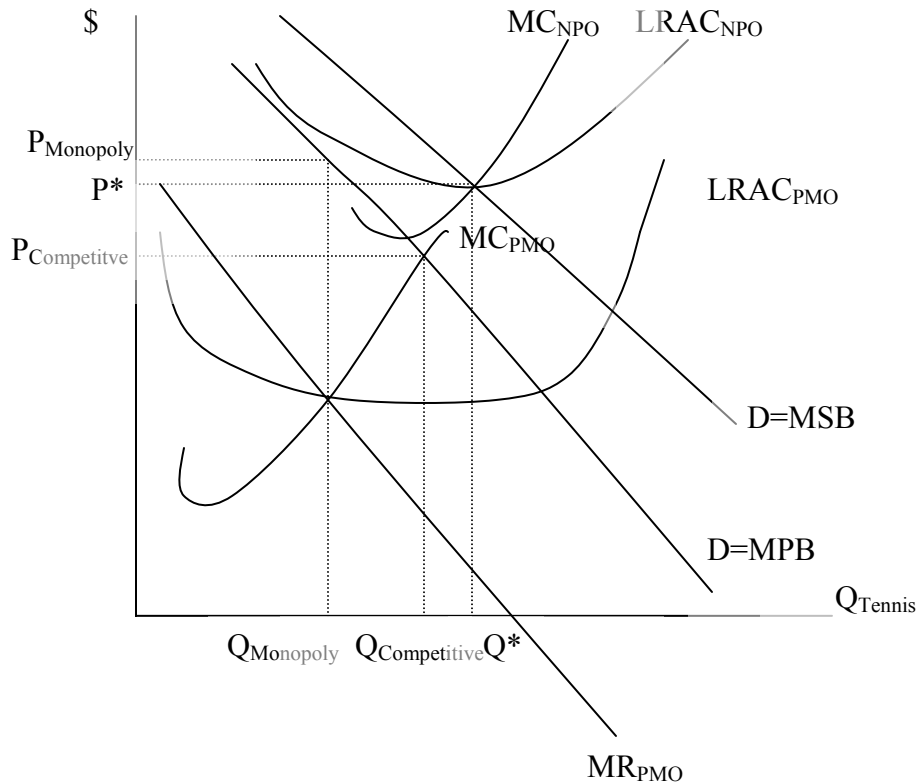
Therefore, as shown in figure eighteen B, the nonprofit should provide tennis at the

national level. Following its own motives and goals, it will pick a cost curve, $LRAC_{NPO}$,

to produce closer to, or at, the socially optimal level, Q^*.

Conclusion

This paper discussed social capital in great detail, defining it in terms of the reputational

signal it creates. A production function clarified how more social capital is produced per

unit activity through tennis, compared to team sports. It showed that tennis produces

more social capital using a structure that creates a strong reputational signal. This

structure enforces the norms of honesty and self-reliability that are crucial signals of

reputation. The socially optimal level of tennis participation is not achieved due to the

presence of positive externalities. An investment function explained why individuals undervalue the benefits of social capital. It also explained how tennis increases the marginal benefits and lowers the marginal costs of investment. A nonprofit organization was recommended as an effective solution to the problems of market and government failure. It could solve these failures by addressing information problems, lowering the price and increasing the output of tennis in a mixed market, and being the sole national provider of tennis. The USTA is the best mechanism to increase the level of tennis participation to the socially optimal level. This then generates the optimal amount of social capital through participation in tennis.

This paper has implications for society. It suggests that emphasis be taken away from team sports and implies more resources should be invested in tennis. In this way, a more efficient level of social capital can be created, leading to economic growth. This paper also argues that nonprofit organizations should provide tennis. Government may then consider funding nonprofit organizations to achieve socially optimal levels of tennis participation.

This paper was theoretical and would benefit from future research. It would benefit from empirical studies that use data to support and further examine the claims made in this paper. Empirical research could determine the actual levels of participation in team sports versus tennis in the United States.

This paper describes tennis as the individual sport that creates more social capital compared to team sports. Further research should explore whether individual sports, in general, create more social capital than team sports. Individual sports, like golf, swimming, horseback riding, and running may or may not create social capital in the same way tennis does. More research would assist policy makers on deciding which sports programs to advocate to produce more social capital.

 Investigating the nonprofit role in provision of other sports would also extend the conclusions of this paper. Perhaps other individual sports or team sports would benefit from a sole nonprofit provider. Since sports are an effective way of generating social capital, additional research will have strong implications for the future role and relationship of sports and social capital.

Bibliography

Astone, Nan Marie, Constance A. Nathanson, Robert Scheon, and Young J. Kim.
        "Family Demography, Social Theory, and Investment in Social Capital."
        <u>Population and Development Review</u>. 25.1 (1999): 1-31.

Axelrod, Robert. "An Evolutionary Approach to Norms." The American Political Science
        Review. 80.4 1986: 1095-1111.

Bach, Luder. "Sports Without Facilities: The Use of Urban Spaces by Informal Sports."
        <u>International Review for the Sociology of Sport</u>. 28 (1993): 281-296.

Brehm, John and Wendy Rahn. "Individual Level Evidence for the Causes and
        Consequences of Social Capital." <u>American Journal of Political Science</u>. 41.3
        (1997): 999-1023.

Chantelat, Pascal. "An Overview of Some Recent Perspectives on the Socio-Economics
        of Sport." <u>International Review for the Sociology of Sport</u>. 34 (1999): 59-68.

Fort, Rodney D. <u>Sports Economics</u>. 2003: Pearson Education Inc, New Jersey.

Fukuyama, Francis. "Social Capital and Civil Society." <u>The Institute of Public Policy</u>.
        (1999).

Glaesar, Edward L. "The Formation of Social Capital." Presented at the International
        Symposium on the Contribution of Human and Social Capital to Sustained
        Economic Growth and Well-being, Quebec City, Canada, 19-21 March.

Glaesar, Edward L., David Laibson, and Bruce Sacerdote. "An Economic Approach to
        Social Capital." <u>The Economic Journal</u>. 112 (2002): 437-458.

Johnson, Bruce K., Peter A. Groothuis, and John C. Whitehead. "The Value of Public
        Goods Generated by a Major League Sports Team: The CVM Approach." <u>Journal
        of Sports Economics</u>. 2.1 (2001): 6-21.

Knack, Stephen and Philip Keefer. "Does Social Capital Have an Economic Payoff? A
        Cross Country Investigation." <u>The Quarterly Journal of Economics</u>. 112.4 (1997):
        1251-1288.

Manski, Charles F. "Economic Analysis of Social Interactions." <u>The Journal of Economic
        Perspectives</u>. 14.3 (2000).

Putnam, Robert D. "Bowling Alone: America's Declining Social Capital." <u>Journal of
        Democracy</u>. 6.1 (1995): 65-78.

Putnam, Robert D. "The Prosperous Community." <u>The American Prospect</u>. 4.13 (1993).

Putnam, Robert D. "Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America." PS: Political Science and Politics. 28.4 (1995): 664-683.

Rader, Benjamin G. "The Quest for Subcommunities and the Rise of American Sport" 1977.

Robison, Lindon J. and A. Allan Schmid, and Marcelo E. Siles. "Is Social Capital Really Capital?" Review of Social Economy. (2002): 1-21.

Sandy, Roger and Peter J. Sloane, and Mark S. Rosentraub. The Economics of Sport. 2004: Palgrave MacMillan, New York.

Schuller, Tom. "The Complementary Roles of Human and Social Capital."

Seippel, Ornulf. "Sport and Social Capital." Acta Sociologica. 49 (2006): 169-183.

Sobel, Joel. "Can We Trust Social Capital?" Journal of Economic Literature. 40.1 (2002): 139- 154.

Stempel, Carl. "Adult Participation Sports as Cultural Capital: A Test of Bourdieu's Theory of the Field of Sports." International Review for the Sociology of Sport.

"Super Senior National USTA Championships." USTA. 28 Oct. 2007. <http://www.usta.com/leagues/custom.sps?iType=931&icustompageid=20862>.

"Tennis Participation- Good News for Tennis Industry." Tennis Industry Association. 28 Oct. 2007. < http://tennisindustry.org/PDFs/2006TennisParticipation.pdf>.

"The USTA." USTA. 15 Sept. 2007. <http://www.usta.com/about_us/organization/default.sps.>

"USTA Tennis and Education Foundation." USTA. 15 Sept. 2007. <http://www.usta.com/news/fullstory.sps?iType=12371&inewsid=312386>.

"USTA Sections." USTA. 20 Sept. 2007. <http://www.usta.com/site_services/custom.sps?iType=961&icustompageid=610 7>.