Kentucky and the Thoroughbred Industries: Prospects and Challenges as Gambling Popularity Declines

Lambert, Thoomas

University of Louisville

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By
Thomas E. Lambert
Equine Industry and Economics Departments
College of Business, University of Louisville
Louisville, KY 40292 USA
Phone: 502-852-7838
Email: thomas.lambert@louisville.edu

Abstract

Over the last 15 to 20 years or so horse racing has seen declines in wagering and fan attendance throughout the US. Because of this, the number of races, horses per race, the number of thoroughbred farms, and new thoroughbreds bred and born each year for about the last 10 to 12 years have also declined. The decline in wagering has occurred despite simulcasting of races, online betting, and gambling machines which employ films of past races (historical horse racing machines). Those racetracks doing well are usually part of larger casino and entertainment complexes (racinos). Kentucky, which has one of the greatest number of horses and horse farms per capita in the United States, and which is also home to one of the world's premier racetracks and horse races, Churchill Downs and the Kentucky Derby, has seen declining inflation adjusted horse industry tax revenues since the 1990s. These losses only exacerbate a state budget which has already seen substantial declines in or an almost complete loss of tax revenues from two other major industries of the state, coal and tobacco. This research note explains why the thoroughbred industries are declining and how this is impacting some Kentucky state tax revenues.

JEL Codes: H71, L83

Keywords: gambling, horse racing, parimutuel wagering, tax revenues, thoroughbred industries,

Introduction and Background

In 1985, horse racing was ranked 8th as Americans' favorite sport but fell to 13th by 2016 according to a 2016 Harris Poll (Reuters 2016). The popular press has run occasional stories on the decline of horse racing over the last few years, but there are few if any accounts that try to systematically analyze the causes and consequences of the decline. The popular press blames a lot of the decline in the popularity of horse racing on various factors such as protests and negative promotions by the People for the Ethical Treatment of Animals; too much taxation by different states and local jurisdictions; and/or negative publicity emanating from the killing of horses injured while racing (Reuters 2016). This paper, however, argues that, although these factors may matter, the main reason for the decline in racing's popularity is due to the decline in the popularity of gambling in general in the United States. Since the turn of this century overall inflation adjusted and per capita gambling expenditures have been in decline when compared to their previous levels of the 1990s and first few years of the 2000s and at least several years before the Great Recession of 2008-2009. Figure 1 shows that per capita, inflation adjusted total gambling consumption expenditures peaked in 2006 and have not recovered since (US Bureau of Economic Analysis 1959 to 2019).

(Insert Figure 1 to 5 and Table 1 around here)

Figure 2 displays inflation adjusted per capita parimutuel wagering for horse racing in the US (online, off track, and on-track), and the pattern shows a peak in revenues around 1999 (US Jockey Club 1990-2019). Meanwhile, US inflation adjusted casino (US Census Bureau 1998 to 2018) and lottery revenues (US Census Bureau 1977 to 2018) per capita from 1998 to 2018 are exhibited in Figures 3 and 4 respectively.[1] These graphs also show that there have been peaks in

[1] For Casinos, only data from 2013 to 2019 for casino hotels can be found.

gambling activity in these industries either prior to or around the time of the Great Recession from which these industries have not yet recovered. Finally, Figure 5 indicates a possible source of the problem. When looking at the growth rate of US real, per capita disposable personal income (DPI), the average growth rate of real DPI per capita has not been as strong in the first two decades of the 21st Century as it was in the last two decades of the 20th Century, 1.6% versus 2.3% respectively (US Bureau of Economic Analysis 1930 to 2019). Real DPI growth was even stronger in the US in the 1960s. Since DPI is probably the most important factor in leisure spending, among which gambling is included, and has a high-income elasticity (Thalheimer and Ali 1992, 1995, and 2003), the lack of growth in DPI is probably one of the main reasons for the decline in the different sectors of the gambling industry.[2] Growth in income for leisure spending has been fairly stagnant from 2001 and onward. However, its growth is still positive as declines are exhibited in the thee major forms of gambling considered in this paper. Perhaps another part of the problem is a change in consumer preferences toward gambling.

Table 1 displays how real DPI per capita and how the three types of gambling are correlated statistically from 1998 to 2018 at the national level in the US. The statistically significant Pearson correlation coefficients in Table 1 show a strong positive relationship between lottery sales and horse racing gambling revenues (+0.82), a strong negative relationship between real DPI per capita and racing wagering per capita (-0.91), and a moderate and negative relationship between real DPI per capita and lottery sales per capita (-0.68). Casino revenues per capita, however, do not seem to correlate with the other variables, however. The very strong

[2] In using the natural log of real disposable personal income to predict the natural log of real gambling expenditures using data from 1959 to 2019 in a regression equation, a coefficient of 2.31 is found for the log of real DPI. That is, a 1% increase/decrease in real DPI is associated with a 2.31% increase/decrease in real gambling expenditures. A coefficient greater than one indicates that gambling is a luxury good, and its demand fluctuates greatly with economic times.

negative relationship between DPI and racing wagering indicates that horse racing is probably more vulnerable to fluctuations in DPI versus the other two types of gambling. As real income has risen, albeit slowly, over the last 20 years or so, betting on racing has declined. [3]

(Insert Table 2 around here)

Table 2 displays more correlation coefficients and illustrates how horse racing has become more vulnerable to the rise of lotteries and casinos over the last 30 years. When the number of US horse races is correlated with the number of states with lotteries and with casinos over the period 1989 to 2019, there is a very strong inverse relationship between the number of races and the growth in the number of states with lotteries or casinos.[4]

(Insert Table 3 around here)

Fallout from the Decline in Horse Racing Gambling

Dadayan (2016) writes that state tax revenues for gambling whether from casinos, lotteries, or sports have not provided long term fiscal aid or relief for most states and are only a small percentage of the total tax revenues for states (usually less than 3 or 5%). Meanwhile, Srinivasan and Lambert (2017) note that state tax revenues from casinos have stagnated and have stopped growing in most states since around 2004. They note that racinos (combinations of racetracks and casinos in one venue), however, are doing well despite the declines in casino revenues. Table 3 shows that for both the US and for Kentucky, inflation adjusted state tax revenues from parimutuel wagering have declined (Dadayan 2016, Kentucky Horse Racing

[3] At the micro level in individual regional markets, there is evidence that the different gambling forms compete against each other, and as one form of gambling gains revenues, its competitors usually lose business due to high degrees of substitution made by gamblers among the different types (Gulley and Scott 1989 and 2003, Thalheimer and Ali 1992, 1995, 2003, and 2008, Philander 2011, Marionneau and Nikkinen 2018). Parimutuel wagering is especially vulnerable to competition from casinos, lotteries, and professional sports gambling according to Thalheimer and Ali (2008).

[4] As of the time of the writing of this paper it is too soon to assess the impact of sports wagering on parimutuel wagering since the US Supreme Court has only allowed states the right to allow sports gaming since 2018. Before then, legal sports gaming in the states had been banned except in Nevada (Martin 2018).

Commission 2002 and 2018). The drop in Kentucky's revenues would be worse if not for tax revenues from historical horse racing machines (something similar to slot machines) which have recently been offered at different gambling outlets and generate revenues that up until recently were counted as parimutuel wagering revenues. A recent Kentucky Supreme Court decision is no longer allowing such revenues to be classified as parimutuel wagering, however, and state lawmakers will have to address this issue in 2021 (Sonka 2020), If the laws on historical horse racing are not changed by the legislature in order to comply with the court's decision, then a huge share of Kentucky's excise taxes on parimutuel wagering will be lost. The fact that inflation adjusted wagering or handle for parimutuel wagering has declined over the years in Kentucky is similar to how it has declined in the US explains the stagnant tax revenues for Kentucky (see Table 3).[5]

Throughout the US and Kentucky, Table 3 indicates that the number of Thoroughbred races declined dramatically from 2000 to 2019. In fact, in 1989, over 75,000 races took place in the US according to the Jockey Club, et al (1989-2019) whereas by 2019 less than half this number of races was held. The drop off in the number of races is correlated with declining betting as are the declines in sires/studs offered for breeding mares and the number of Thoroughbred foals born (Jockey Club, et al 1989 to 2019, Bloodhorse.com 2005 and 2019). With less money to be made racing horses, fewer people are interested in generating new Thoroughbreds. This is also illustrated by the decrease in the number of horse and pony farms in the US and in Kentucky as listed in Table 3 (USDA National Agricultural Statistics Service 2007 and 2017).

[5] The greatest share of parimutuel wagering is for Thoroughbred racing. Standardbred racing, or harness racing as it is often called, makes up less than 10 percent of parimutuel wagering in Kentucky (Kentucky Horse Racing Commission 2002 to 2018 reports).

As the number of stallions offered for stud services shrinks, the concentration of breeding among top stallions/sires has gone up. Bloodhorse.com records indicate that the overall number of stallions offered for stud services dramatically declines from 3,098 in 2005 to 1,136 in 2019 (Bloodhorse.com 2005-2019). Because of the possibility of too much inbreeding, and in an effort to help smaller horse farms, the US Jockey Club has issued a rule for its members on breeding in which basically no sire born in 2020 or later can mate with more than 140 mares in a breeding season (Paulick Report 2020). Around 840 foals were born from stallions who mated with 140 or more mares in 2005 whereas in 2019 there were 1,397 foals sired by stallions who mated with 140 or more mares that year, so the Jockey Club rule has been created to change this trend.[6] More importantly, the number of foals produced by the top 20% of the stallions accounted for around 69% of the mares mated in 2005 whereas in 2019 the top 20% were matched with 75% of the mares bred. Breeding concentration among the top stallions increased, and most of the top studs have been located in Kentucky (Losey and Lambert 2020a).[7]

Using an index measuring common ancestry with a scale of 0 to 32 and going back five generations for each stallion/sire, Losey and Lambert (2020b) find a statistically significant increase from 2000 to 2020 in the amount of inbreeding among horses offered for stud services (Bloodhorse 2000 and 2020), and these are the scores displayed in Table 3. Their results parallel the findings of horse veterinarians and others who have noted higher levels of inbreeding, although no definitive source could be found that states whether higher levels of inbreeding are causing any congenital health problems in Thoroughbreds.

[6] Some of the top stallions bred with over 200 mares in a single breeding season.

[7] Unlike with Standardbred horses and other breeds of horses, artificial insemination is prohibited for Thoroughbreds in the US thanks to the efforts of the US Jockey Club which tries to promote the interests of breeders (Coelho and McClure 1987, Losey and Lambert 2020a). If artificial insemination was permitted, most breeders would fear a significant drop in the price of stud services.

On another front, horse racing has just recently decided to deal with the drugging of racing horses with Lasix on the day of a race. The Horseracing Integrity and Safety Act passed by the US Congress in December 2020 aims to reduce horse injuries and deaths possibly due to the drug and to clean up the negative perceptions associated with "equine athletes" having to be "doped" thanks to Lasix use (Ramsey 2020, Sullivan 2020). The bill was supported by most of Kentucky's US congressional delegation including the US Senate Majority Leader from the state, US Senator Mitch McConnell. For years political leaders from the state, including McConnell, opposed the banning of Lasix on the grounds that it would hurt the horse racing industry. Most of all, without Lasix, some horses are likely to bleed and show blood coming from their nostrils during and after a race. Such bleeding basically comes from the lungs of the horse beating against its rib cage while exerting itself during a race. Sometimes the bleeding is so bad that the snout and neck of the horse can be badly stained with its own blood.

Lasix, however, can cause harmful and sometimes fatal side effects for an animal. The drug also acts as a diuretic with horses usually dropping at least several pounds of water before a race, and this has been regarded as "performance enhancing", a claim that carries some stigma with it as most sports have tried to move away from any type of drug use by athletes for performance enhancement (Ross 2014a). In addition to the Lasix issue, the horse racing industry has also been beset by claims of too many different types of drugs being used too frequently on horses in order to try to reduce their pain from injuries as well as inconsistent drug policies among different state jurisdictions (Ross 2014b). The perception of too many drugged animals has been claimed to hurt the image of horse racing, and a future problem, if race day usage of Lasix is banned, could be one of fans seeing some horses emit blood as they run across a track.[8]

[8] The US is one of the few nations that has jurisdictions within it that permit race day usage of Lasix. Most other nations allow Lasix for horses for practice but not for race days.

Conclusion: What does the Future Hold for Horse Racing?

Despite the current adverse conditions of the horse racing industry, it still receives direct and indirect financial assistance and help from the Commonwealth of Kentucky. For the 2017-2018 Kentucky Biennial Budget, and similar to other biennial budgets over the last decade or so, only about one-third of equine excise taxes[9] collected go to the state's General Fund (Kentucky Horse Racing Commission 2018). The other two-thirds or so go to support equine education or research programs at Kentucky universities, several incentive, improvement, or development funds (which are basically supplements to racing purses or prizes for horse shows and events), and funds from advanced deposit wagering and simulcasting in other states to pay out of state host/venue fees. Of these funds, most of the money goes for increasing the purses for Thoroughbred racing. Such supplements to purses through tax revenues were unheard of and unnecessary years ago but are now needed due to declines in wagering (Bernick 2020). At the same time, most taxes on wagering in Kentucky run anywhere from a fraction of 1% to around and usually 1.5% of overall betting or handle, so the amount collected is actually quite low when compared to recent handle revenues ranging in nominal terms from $1.4 to $1.5 billion (Kentucky Horse Racing Commission 2018). To try to raise more revenues, however, would decrease the payout to patrons and raise the ire of racetrack operators.

Traditionally excise taxes have often been used to discourage or limit certain types of behavior such as alcohol consumption, cigarette smoking, and gambling because of the negative externalities caused by certain behaviors. Most of the proceeds of such taxation have often been used to administer and implement programs that promote cessation or moderation of undesirable

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[9] Excise taxes and fees on horse sales, horse auctions, wagering (online and on-track), historical horse racing,, simulcasting etc. The nominal amount for 2018 was around $23 million and around $20 million for 2017, which are small amounts when compared to a total Kentucky tax revenues of over $10 billion for each year (Office of the State Budget Director 2018).

habits, yet in Kentucky most of the revenues are used to help an industry reliant upon gambling. No funding goes for programs to address problem gambling, although other states provide such funding (Kentucky Legislative Research Commission 2003).

There is also a contradiction in the taxation of and financial support for horse racing and breeding in Kentucky. As betting from historical horse racing, simulcasting, and advanced deposit wagering has not been enough to offset the decline in on track wagering in real dollars over time, the state finds itself trying to prop up sinking industries with less resources as time passes. As wagering in real terms continues to decline, state support at current levels is not sustainable. A key question is how much longer it will be before all excise tax revenues possibly are used to supplement purses in order to help attract more and better horses to a dwindling number of races each year so as to hopefully attract more fans. At least this is a reason for trying to support purses so that interest in the sport is somehow resuscitated. Trends in gambling indicate that there is a high likelihood that the fans probably are not coming back whether online or at the track. Unfortunately, unlike other professional sports, horse racing has been strongly linked to gambling since its beginning and for many years was one of the few legal and legitimate forms of gambling permitted in most parts of the US until lotteries and casinos started becoming popular in the 1980s and afterward. Until or unless horse racing can decouple itself from gambling and mold a new image for itself in the sports world, its future prospects do not look good except for those racetracks willing to merge with casinos and to become racinos. If the trends shown in this paper continue, then more mergers between casinos and racetracks are one possible consequence of gambling's stagnation over the last ten years or so and could be the key to survival for horse racing.

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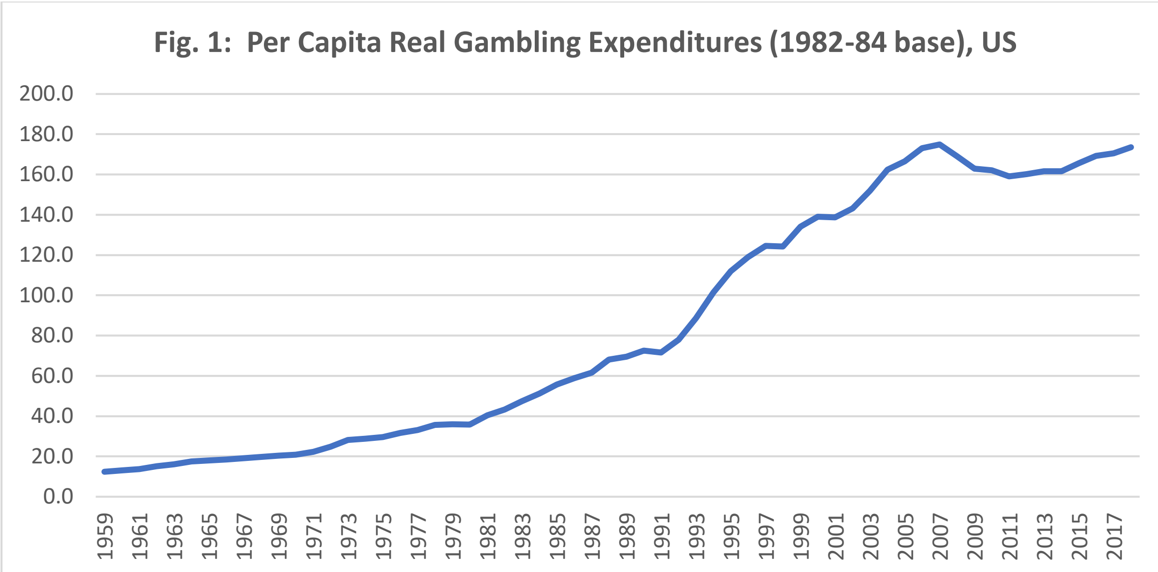

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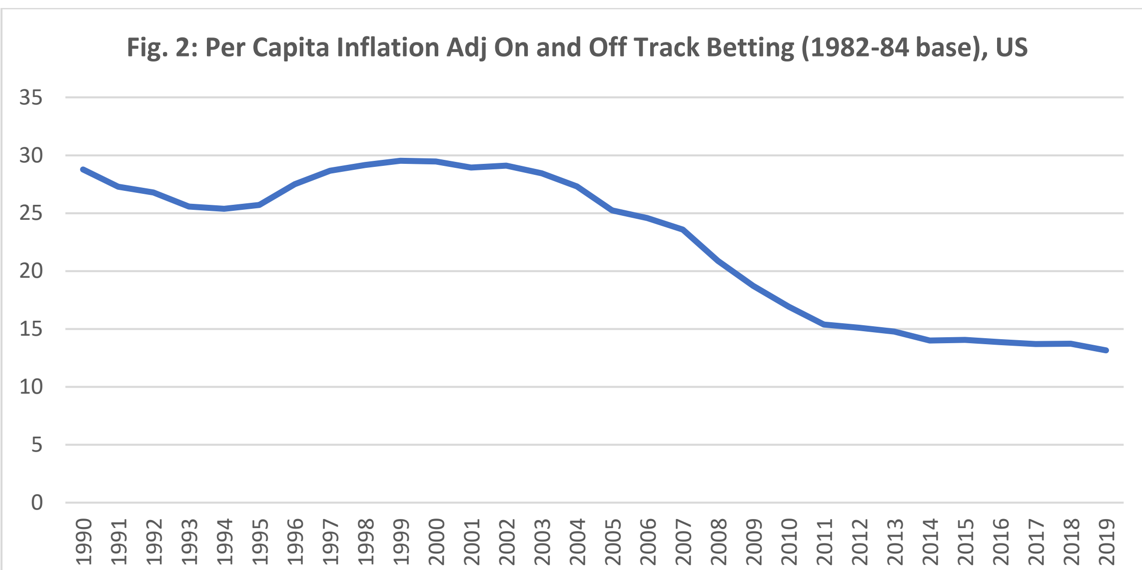

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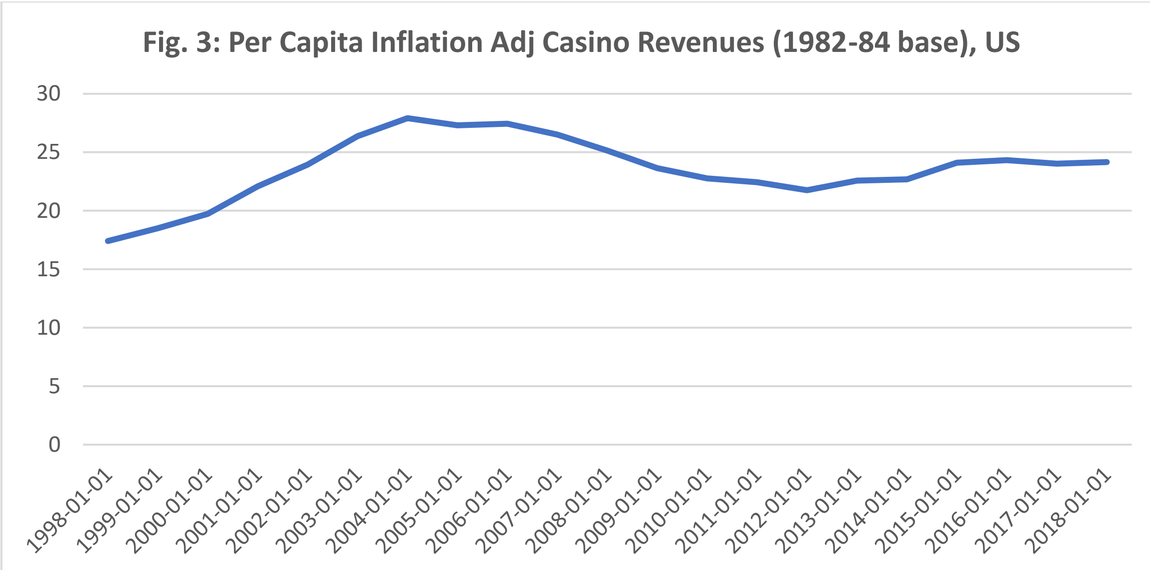

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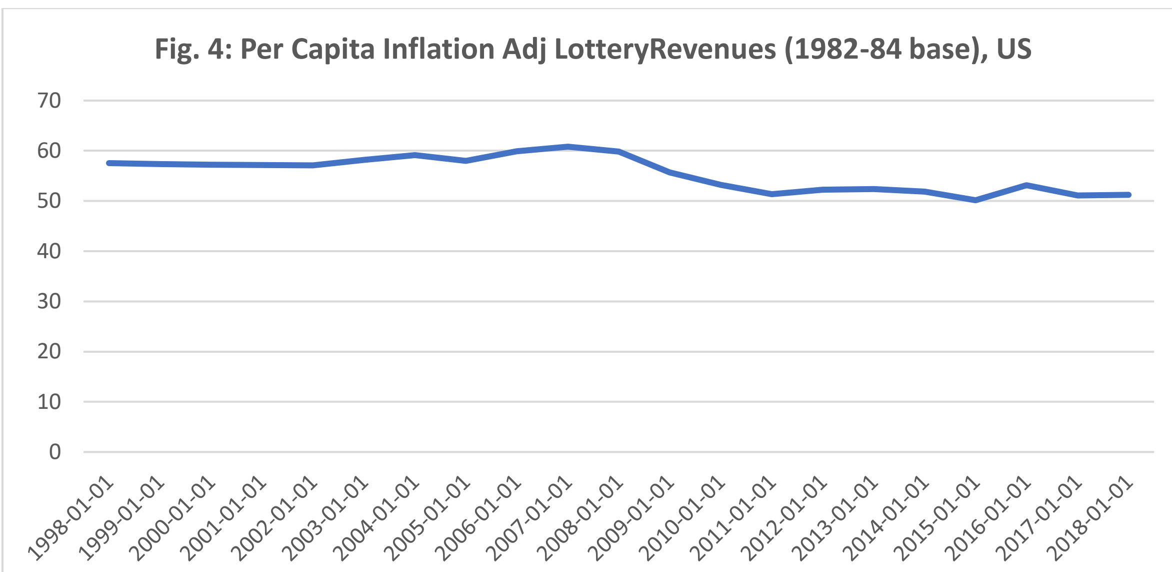

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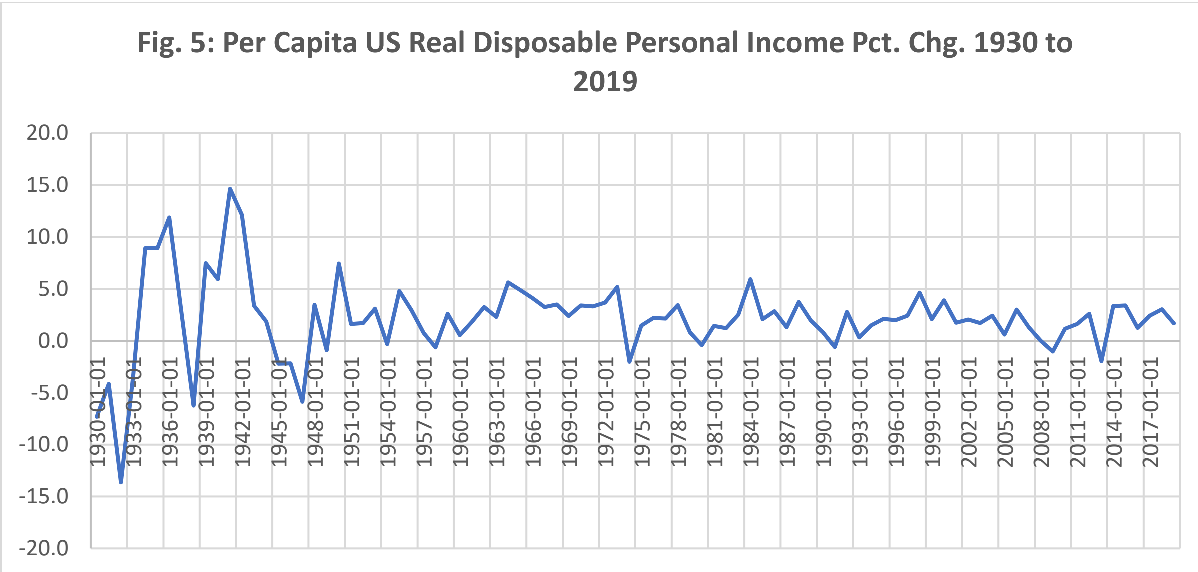

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Table 1—Pearson Correlation Coefficients for DPI, Revenues, and Wagering, 1998-2018

	Real DPI per Capita	Inf Adj Lottery Rev per Capita	Inf Adj Casino Rev per Capita	Inf Adj per Capita Parimutuel Wagering
Real DPI per Capita	1			
Inf Adj Lottery Rev per Capita	-0.68*	1		
Inf Adj Casino Rev per Capita	0.38	0.27	1	
Inf Adj per Capita Parimutuel Wagering	-0.91*	0.82*	-0.09	1

*p<0.05

Table 2—Pearson Correlation Coefficients for Race, Lottery, and Casino Numbers, 1989-2019

	US Races	Lottery States	Casino States
US Races	1		
Lottery States	-0.918*	1	
Casino States	-0.973*	0.867*	1

*p<0.05

Table 3—Comparisons

	Period 1	Period 2
All States Inf Adj Parimutuel Tax Revenues, 2008 to 2015	$243.2 million	$135 million*
Ky Inf Adj Parimutuel Tax Revenues, 1998 vs. 2018	$10.4 million	$9.4 million
Ky Parimutuel Wagering Handle, 2002 vs. 2018	$927.6 million	$633.5 million
Total US Races, 2000 vs. 2019	55,486	36,207
Total Ky Races, 2000 vs. 2019	2,312	1,766
Number of Studs Offered, 2005 vs. 2019	3,098	1,136
Number of Thoroughbred foals born, 2000 vs. 2019	34,728	19,225
US Number of Horse and Pony Farms, 2007 vs. 2017	575,942	459,526
US Number of Horse and Pony Farms, 2007 vs. 2017	22,242	16,290
Inbreeding Score Avg., 2000 vs. 2020	5.4	6.7

*2015 dollars; all others use 1982-84 base year.