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An analysis of self-identified speculative investors

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Abstract

A major survey of gamblers in the province of Ontario was reanalyzed to determine the characteristics of those respondents who identified themselves as speculative investors. Logistic regression analysis indicates that, compared to other gamblers, members of this group are more likely to be male, have a high family income, be an active gambler, and have a higher level of education. Higher frequencies of gambling-related problems were found in this group, but it was not possible to determine to what extent this was due to the presence of speculative investing. The prevalence of problem gamblers in the general population who are also speculative investors is estimated to be low compared to other gamblers. [Keywords: speculative investing, speculative investors, gambling]

Introduction

Background

Until recently, mainstream economic thought has viewed investment activity in the financial markets as an economic activity subject primarily to the models and beliefs of classical and

neoclassical economics. Classical economics is generally thought to have had its principles laid out with the publication in 1776 of Adam Smith's well-known work, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Smith, 1991). Classical economists have tended to view people as individuals who pursue their own self-interests in a free marketplace. While pursuing their own self-interests, the forces within a free market — Adam Smith's invisible hand — were thought to result in the maximum good for all. Neoclassical economics was established towards the end of the 1800s. Although mathematics had been a part of classical economics, with neoclassical economics, mathematical modelling became an integral part of modern economic practice. The neoclassical economists retained many of the beliefs of the classical economists but tended to think in terms of market equilibria, i.e., that opposing forces within a market, such as supply and demand, naturally and over time, tend to a balancing point or equilibrium. The use of mathematical models required simplifying assumptions that led to a rather restrictive view of individuals engaged in economic activity. As Frey and Benz (2002) describe it:

> … modern economics has developed a behavioural model which disregards psychological factors almost completely. The "homo oeconomicus" takes decisions in a rational and emotionless manner. He or she compares the expected costs and utilities of the different alternatives at hand, and finally selects the one that benefits him or her the most. Decisions are assumed to have a high degree of rationality (cognitive limitations resulting in systematically suboptimal decisions are disregarded); they are based on unlimited willpower (self control problems and emotions do not play a role); and actions are solely guided by self-interest (the homo oeconomicus does not have pro-social preferences, i.e. the utility of other individuals does not enter into his decision calculus). (p. 3)

Although traditional economic thought has been questioned by economists such as Veblin, Galbraith, and Keynes since the 1980s, these views have faced more serious challenges. The challenges came from both economic and psychological perspectives and have led to the development of the new field of behavioural economics (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992; Shiller, 2002; Frey & Benz, 2002). Behavioural finance recognizes the role of psychological and sociological factors in determining investor behaviours.

One of the possible psychological explanations that has been put forth for some more speculative marketplace behaviour is that it may be gambling (Shiller, 1999). Although assumptions have been made by some that aggressive trading may be a form of gambling

for some traders and that speculative investing can be treated as another gambling activity, little research has been carried out on the relationship between gambling and investing.

Although the terms *general investors* and *speculative investors* are commonly used, it is important that they be clearly understood. General investors typically select reasonably conservative investment vehicles, i.e., ones with either moderate or low volatility, and hold their investments for the mid- to long term. Although general investors select their investments with the hope of doing better than the market, their investment performance generally tracks market performance. Speculative investors, on the other hand, seek to achieve significantly higher yields on their investments. To achieve these higher yields, speculative investors employ three broad tactics. First, they choose investment vehicles with high volatility. A classic example is penny mining stocks. The higher volatility reflects greater price swings and increases the potential for profit. The second approach is to trade more frequently. The time frame can vary from a few months to hours. For this reason, these investors typically refer to themselves as traders rather than investors. The reduced trading time frame produces greater opportunities to realize profits. The third approach is to borrow or leverage one's investments, a tactic that further increases the potential for profit. Such tactics are associated with much higher risk than general investing. On the one hand, they greatly increase the potential for profit, and, on the other, they greatly increase the potential for losses. It is important that the presence of risk not be automatically associated with gambling. Classical gambling activities such as lotteries and casino games have a negative expected outcome, i.e., the odds are against the player. In contrast, investing can be considered a positive-sum game overall, with the degree of risk and the potential for gains or losses left to the choice of the individual investor. The principal studies on gambling in the financial markets have been carried out by Marvin Steinberg of the Connecticut Council on Compulsive Gambling (Steinberg, 1998; Steinberg & Harris, 1994). Steinberg has undertaken two surveys to attempt to assess the extent of problem gambling in financial markets. In the first study (Steinberg & Harris, 1994), questionnaires were sent to 1000 stockbrokers in Connecticut. The following definition of problem gambling in the financial markets/stock market was provided to those surveyed:

1) Repeated speculative risk-taking, resulting in significant financial losses in relation to the person's level of assets.

2) The behaviour may appear erratic and inconsistent and/or excessively frequent.

Only 57 replies were received. The respondents identified options

and futures contracts, penny stocks, and excessive use of margins as the principal areas in which market gambling occurred. The respondents estimated that 2% of investors had a gambling problem. It was calculated that market gambling represents 13.3% of all problem gamblers in Connecticut, and 9.8% of the respondent brokers indicated that they themselves had a gambling problem.

In the second study (Steinberg, 1998), a survey was sent to the 260 members of the Connecticut Public Investors Arbitration Bar Association. The definition of problem gambling in the financial markets/stock market provided to those surveyed was as follows:

1) Engages in speculative risk-taking resulting in significant losses in relation to level of assets.

2) Chases losses through increasing speculation — difficulty stopping when losing. Investments highly leveraged.

3) Borrows money in order to invest.

4) Behaviour appears erratic, inconsistent, irrational, and/or excessively frequent.

A total of 36 replies were received. The respondents estimated that gambling was most prevalent in excessive use of margins, penny stocks, futures contracts, and options. Only 20% thought that the risk in a casino was higher than in the more speculative areas of the market.

It is important to be cautious in interpreting these findings of problem gambling in the financial markets as indicating an addictive behaviour equivalent to pathological gambling. As Shaffer (1999) has noted, the concept of an addiction among laypersons, and even professionals, is often quite loose, and the observation of what appears to the outside observer to be irrational and possibly harmful behaviour does not tell us if the behaviour is uncontrollable, and thus an addiction. A key feature of an addiction is the inability to stop the behaviour despite attempts to quit; this criterion is missing in these two studies. Nevertheless, the studies are important in that they provide an insight into the extent of possible irrational behaviour among speculative investors and point to the fact that some of these investors may share at least some of the characteristics of problem gamblers. Thus, as the view of the investor in financial markets has changed from the traditional rational economic one, to one that incorporates psychological and sociological factors, the activities of some of the more speculative investors have been viewed as less than rational. Parallels to gambling behaviours have been proposed and some preliminary

investigations undertaken. The studies that have been carried out suggest that some speculative investors may share some of the characteristics of problem gamblers. However, existing research in this area is sparse.

Research questions

In this study, we examine the prevalence of speculative investing, and its relationship to gambling and problem gambling, in a representative survey of Ontario adults. The survey contained questions on speculative investing along with the usual gambling activities. The following questions are addressed with this research:

1) What are the variables that discriminate between self-identified speculative investors and other gamblers?

2) What are the rates of speculative investing and of problems related to speculative investing in the population?

Method

Data from the Measuring Gambling and Problem Gambling in Ontario survey (Canadian Centre on Substance Abuse, 2001) are analyzed in this study. This survey was carried out by the Canadian Centre on Substance Abuse and the Responsible Gambling Council (Ontario) during the period March to May, 2001 (Wiebe, Single, & Falkowski-Ham, 2001). Stratified random sampling was used to obtain a sample of 5000 Ontario residents, aged 18 years or older. The sample was stratified by age, gender, and region to ensure adequate representation. Random-digit dialling was used and within each household the individual with the closest birthday was selected for the survey. The response rate was 37% (62% refused and 1% of the surveys were incomplete).

Survey

Gambling behaviour was assessed with the Canadian Problem Gambling Index (CPGI) (Ferris, Wynne, & Single, 1999). This instrument, designed for the general population, captures information in four broad domains: gambling involvement, problem gambling behaviours, consequences of problem gambling, and correlates of problem gambling. Problem gambling is measured by a nine-item problem gambling severity index (PGSI) addressing gambling behaviour and the negative consequences of gambling. These items are shown in Table 1. The PGSI has been extensively validated and has good psychometric properties (Ferris et al., 1999).

Table 1

Problem Gambling Severity Index items

Dimension	Variable measured	Item
Problem gambling behaviour	Loss of control	How often have you bet more than you could really afford to lose?
	Motivation	How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?
	Chasing	How often have you gone back another day to try to win back the money you have lost?
	Borrowing	How often have you borrowed money or sold anything to get money to gamble?
	Problem recognition	How often have you felt that you might have a problem with gambling?
Adverse consequences	Personal consequences	How often have people criticized your betting or told you that you had a gambling problem?
		How often have you felt guilty about the way you gamble or what happens when you gamble?
		How often has your gambling caused you any health problems?
	Social consequences	How often has your gambling caused any financial problems for you or your household?

Definition of gamblers and speculative investors

Nongamblers were defined as individuals who did not endorse any form of gambling or who twice indicated that they did not gamble. Out of the 5000 respondents, 369 were incorrectly classified. For the purposes of this study, only correctly classified gamblers with complete gambling-related data were used.

Stock-market participants were selected with the following question.

> In the past 12 months, how often have you made short-term speculative stock or commodity purchases such as day trading, not including mutual funds or RRSPs?

It should be noted that this question is distinctly different from all the other gambling activity questions. First, all the other gambling questions seek to identify all who participate in an activity such as

lotteries or bingo, whereas the stock-market question seeks to identify only a subgroup. Second, there is a significant subjective component, i.e., the respondent must feel that he or she is a speculative investor. The second point is particularly significant because the question is asked in the context of a gambling survey.

For the purposes of this reanalysis of the Ontario survey, we have defined speculative investors as respondents who indicated that they engaged in speculative investing and who invested at least an average of $100 on each occasion. Brokers we have consulted have indicated that, due to the fees charged to place a stock transaction, a minimum realistic stock purchase would be $500. We have chosen to be more conservative and have set the minimum stock transaction at $100. It is most likely that respondents below this level had misinterpreted the question. This cutoff of $100 resulted in the elimination of 25 of the 294 self-identified speculative investors.

Weighting of results

The Ontario survey results were weighted according to age distribution in each of the seven Ontario Health Regions (Wiebe et al., 2001). This weighting function was also applied in the present study.

Problem Gambling Severity Index labels

In the original CPGI study, the nine items of the PGSI were scored into four categories: nonproblem gambling, low-risk gambling, moderate-risk gambling, and problem gambling (Ferris et al., 1999). The authors of the Ontario survey felt that the labels implied a progression of problem gambling and that, since little was known about the progression of problem gambling, the labels should be modified (Wiebe et al., 2001). They suggested and used the following labels: nonproblem gamblers, at risk, moderate problems, and severe problems. These labels have been used in the present study.

Results

Logistic regression analysis

To determine which factors significantly increase the odds of being in the group of gamblers who are self-identified speculative investors versus all other gamblers, a logistic regression model was developed. A logistic regression model was used because the dependent variable is dichotomous.

All of the variables were entered in one block to simultaneously

account for the interaction between the variables. The results of this analysis are summarized in Table 2; the table omits nonsignificant terms in the interests of clarity and brevity.

Speculative investors who were gamblers differed from other gamblers on several sociodemographic variables. The speculative investors were more likely to be male, to have higher income levels, and to have higher levels of education. Several differences were observed on gambling measures as well. The speculative investors reported significantly more gambling activities than other gamblers. The average number of gambling activities for this group was 4.65 (SD = 2.18) and for other gamblers was 3.14 (SD = 1.79). As well, significantly more speculative investors fell into the at-risk and moderate-risk gambler groups than other gamblers, although the groups did not differ in the proportions that would be classified as severe problem gamblers.

Table 2

Differentiating speculative investors from other gamblers: Logistic regression analysis

Independent variable	Odds ratio	Wald statistic	Significance
Gender (Male = 1)	1.54	7.95	.005
Education (High school or less = 1)			
Postsecondary education	1.81	8.97	.003
Graduate school education	2.77	22.62	.000
Employment status (Unemployed = 1)			
Student	4.58	4.07	.044
Household income (Under $50,000 = 1)			
$50,000–$80,000	1.76	6.54	.011
$80,000 & up	3.10	25.49	.000
Number of gambling activities	1.37	68.82	.000
Gambling risk (Nonproblem gambler = 1)			
Low-risk gambler	1.72	7.64	.006
Moderate-risk gambler	1.85	4.09	.043

Prevalence rates

The 264 self-identified speculative investors represent 5.7% of the general population sample. The rates of problem gambling for the self-identified speculative investors and for all other investors are shown in Table 3. About 30% of speculative investors who are gamblers have some elevation of problem gambling risk. While the proportion of those who would categorize as severe problem gamblers, at 2.1%, is small, the proportion in the at-risk and

moderate problem categories is sizeable and higher than observed in other gamblers. If we assume that the adult Ontario population is about 8,000,000 people, then there would be about 456,000 people who are self-identified speculative investors and gamblers. Of these, about 9,576 would be considered to be severe problem gamblers. A larger proportion, 37,848, would fall in the moderate problem gambling group.

However, the contribution of speculative investing to gambling problems in this group cannot be determined from the available data. It may be possible that, for example, the gambling problems experienced by this group are derived from other gambling activities and not from speculative investing. Clearly, more research is needed to clarify this issue.

Table 3

Percentages of speculative investors and of other gamblers falling in PGSI categories

Category	Speculative investors	Other gamblers	Significance [1]
Nonproblem	68.8%	85.0%	(Reference category)
At-risk gambler	20.7%	10.9%	.006
Moderate problem gambler	08.3%	03.4%	.043
Severe problem gambler	02.1%	00.8%	n.s.

1 Based on logistic regression analysis

Discussion

Several limitations must be taken into consideration when evaluating the results. First, the response rate is less than ideal, and it is possible that the sample may be biased. Because of this, the estimates of prevalence levels should be treated with caution. Second, the question regarding speculative investing was asked in the context of a gambling survey. Some speculative investors may not have considered their speculative investments to be gambling and may have responded negatively to the question. This would introduce a conservative bias and reduce the proportion of the population that would be considered as speculative investors. Although the speculative investing category is new and little research data are available, no data were collected on speculative investors only. Since most of the self-identified speculative investors seen here engage in a number of gambling activities, it is impossible to determine what proportion of the population may be

speculative investors who do not report other gambling behaviours. Because of this, we can only speak about a group of gamblers who are also speculative investors.

Nevertheless, the results presented here provide a new and important picture of this group of gamblers who are also speculative investors. Compared to other gamblers, members of this group are more likely to be male, have a high family income, be an active gambler, and have significantly higher levels of education than gamblers who are not speculative investors. Thus, gamblers who are also speculative investors are clearly from more advantaged socioeconomic groups. This observation may not be surprising in that investing in equity markets and similar activities require at least a modest amount of available capital, certainly more than would be required for most gambling activities. However, it does suggest that gamblers who are also speculative investors are more likely to be from the higher socioeconomic groups in society and differ importantly from the general population of gamblers. Thus, it may not be possible to generalize knowledge from other groups of gamblers to this group.

Some very interesting differences were observed on gambling-related measures as well. The group of speculative investors reported a larger number of other gambling activities than the other gamblers. There was a trend for speculative investors to have elevated problem gambling scores. There were significantly more of them in the at-risk and moderate-risk groups, although not in the severe problem category. The higher levels of at-risk and moderate-risk gambling-related problems are consistent with the higher levels of gambling activities in this group. However, it may be possible that these observations of increased levels of gambling activities and gambling problems are related to the method of sample selection, and a group of speculative investors who were not selected by virtue of being gamblers as well may not show similar elevations. One way to address this problem in future surveys may be to collect data on speculative investing, and problems resulting from speculative investing, separately from other gambling items.

While it is premature to assume that all speculative investors are gamblers, speculative investors who also self-identify as gamblers appear to be a very interesting and important group. They appear to differ on important sociodemographic variables from other groups of gamblers, and the level of gambling activities and of gambling problems seen in this group appears to be higher on average than those seen in other gamblers. Clearly, more research on speculative investors is needed. Such research could focus on the nature of speculative investing itself and include work to determine more precisely the proportion of speculative investors whose investing behaviour could be considered gambling. It may

well have to be targeted directly to the subgroup of speculative investors.

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