

Quantifying the Value of Collecting: Implications for Financial Advisers

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Abstract This paper documents the extent to which collectors—specifically, those owning collectible classic US postage stamps—experience an opportunity cost associated with expenditures on their collection. Results show, based on stamp price, S&P 500, bond, and T-bill rate data over the period 1969 through 2013, that collectible stamps tend to underperform stocks and bonds on a risk-adjusted basis. Using estimates based on the Modigliani measure (M^2), it was determined that collectors incur an opportunity cost when selecting collectible stamps over more traditional investments. However, it is known that collecting as a hobby provides sociological and psychological benefits. This paper adds to the literature by illustrating how collecting also provides psychic return benefits that can be valued similarly to investment returns. In this study, the foregone return rate of stamp collecting for those who allocate a significant percent of available resources to their collection equates to between 3 and 13 % on an annual basis.

Keywords Collecting · Stamps · Life cycle hypothesis · Hobby

Introduction

Within Western economic tradition, there has long been an overlap between collectibles, art, and monetary interests. It is commonly assumed that many ultra-wealthy households allocate the preponderance of their non-real estate holdings to these assets. However, among less wealthy households, being a collector is often seen as an out of the ordinary avocation (Garfield 2008). Collecting objects, when conceptualized within portfolio investment theories, is generally viewed as suboptimal. This makes collectors an odd lot. In effect, collectors choose to hold at least some of their wealth in objects rather than investment assets. What makes this choice intriguing is that collectibles, art, and other similar assets have tended to generate returns that lag those of equities, bonds, and other investments (Frey and Eichenberger 1995). Fase (2001) pointed out that the difference in returns between collectibles and traditional investments means that owners of collectible objects “are prepared to make a financial sacrifice for their preference ... for this, they get the satisfaction of an aesthetic or social benefit. This is the psychic or subjective income acquired from forgoing a certain investment return” (p. 58). This paper extends Fase’s insight by exploring the notion of psychic income derived from collecting.

There are several approaches that can be used to evaluate the psychic value of collecting. One approach relies on a traditional life cycle perspective where it is assumed that an individual’s consumption and saving behavior is determined by allocating resources over the lifespan (Modigliani and Ando 1957). Three key factors are of importance: (a) life expectancy, (b) wealth, and (c) earnings until retirement. This framework is premised on the assumption that people make rational tradeoffs between current consumption and saving for future wealth. If

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followed to the end, the life cycle hypothesis suggests that at retirement, consumption becomes a function of wealth and life expectancy. An extension of the life cycle hypothesis considers situations where an individual distributes wealth among both financial and other assets, including collectibles. Using this perspective, the individual is assumed to obtain utility from consumption and collecting and allocate resources using some type of subjective evaluation.

While there have been many criticisms of the life cycle hypothesis, and proposed revisions to the model, the basic axioms of the framework do help explain the purpose of building wealth over life by postponing consumption. Interestingly, the distinction between consumption and saving has been less well defined. Prior to retirement, individuals are generally thought to allocate current consumption between needs and wants from current sources of income. What is not consumed can be classified as savings. Some savings is precautionary for use in times of financial shock or crisis. Other savings are earmarked for the specific funding of goals.

The exact tradeoff between wealth distributed towards financial assets and collectibles can be estimated using a number of procedures. One approach involves estimating the marginal utility gained from consumption and collecting and then determining the optimal point where the marginal utilities from consumption and collectibles are equal. A more practical approach involves using techniques from modern portfolio theory (MPT). Within the context of MPT, wealth is assumed to be invested in a manner that balances risks and returns according to each household's level of risk aversion, constrained by a household's saving/investment time horizon. Using this approach, return, standard deviation, and correlation data associated with a number of assets are needed in order to calculate the optimal weight of an asset within a portfolio.

Expenditures on hobbies and collectibles illustrate a household wealth accumulation paradox. Consider a typical stamp or art collector. The average collector is budget constrained, which means that they must set aside a portion of their budget for consumption, collecting, and saving. Traditionally, what is not consumed is, by definition, saved. However, in the case of a collector, expenditures on his/her hobby often lead to a dual form of consumption and saving. A collector receives utility from both acts. The collector is, after all, in a position to enjoy the expenditure immediately. The collector has the privilege of viewing, showing, and researching the stamp or art work. In some cases, the collectible may generate emotional well-being that acts as a form of psychic income or wealth (Gelber 1991; McIntosh and Schmeichel 2004). If maintained, the stamp or art work can be sold later, possibly for an inflated price. However, the literature is relatively explicit in showing that collectibles

rarely provide diversification gains when viewed from a Markowitz MPT mean–variance efficient portfolio viewpoint (Worthington and Higgs 2004). In general, risks associated with collectibles are high, whereas returns tend to be much lower than traditional financial assets.

If an allocation of wealth to collectibles is inefficient why do many individuals engage in collecting behavior? Literature from the study of leisure economics pinpoints at least six interrelated reasons people engage in hobbies and other leisure activities, including: (a) pleasure, (b) stress relief, (c) to alleviate boredom, (d) to improve quality of life, (e) to increase psychic income, and (f) profit speculation. Generally, expenditures on hobbies and collectibles fall into the category of wants rather than needs. More generally, these types of expenditures are classified as leisure outlays. On a balance sheet, collectibles generally are classified as use assets, not investments. The question remains, however, what value collectors receive from their consumption behavior. Unlike consumption on most types of products, household goods, and services that have a limited use and generate a single outcome, such as meeting a need or want, some hobby and collectible expenditures result in two outcomes, namely, the fulfillment of a current desire and the potential for long-term asset appreciation. From a normative perspective, the allocation of resources to collectibles and other non-real estate tangible assets should be a very low percent of household wealth. This is rarely the case (Levine 2012). When viewed with a traditional life cycle hypothesis lens, the amount of actual savings, as a budget and balance sheet item, is likely to be lower for a collector than for a non-collector. The non-collector's balance sheet will clearly have a larger saving and investment asset balance. The collector, on the other hand, may have a similar net worth position, but the allocation of wealth will be skewed towards use and collectible assets. This is not, in and of itself, a problem either within the life cycle hypothesis or from a financial planning perspective. The dilemma facing hobbyists and collectors is one of lost opportunities. From the example above, the stamp collector loses an opportunity to invest in equities (or other investment assets) when she allocates a portion of her budget to the purchase of stamps or art. If it turns out that the expenditure results in a higher risk adjusted gain, compared to equities, then the collector comes out far ahead of a non-collector. Specifically, the collector receives immediate emotional satisfaction associated with owning and enjoying the asset, as well as the future financial gain associated with ownership. On the other hand, if the expenditure results in the acquisition of an asset that fails to match the return on equities, the collector's later potential life income will be diminished.

The purpose of this study was twofold. The first was to test the extent to which stamp collectors experience an

opportunity cost associated with expenditures on their collections. The second purpose was to estimate the value of collecting as a hobby activity. As will be shown in this paper, hobbyists and collectors must give something up when allocating a portion of their constrained budget to their collecting passion. Choices must be made between collectible expenditures and consumption of goods and services. Saving, which results when consumption is less than income, generates a return. Knowing this, it may be possible to quantify the value of collecting as a foregone rate of return. This paper explores this possibility.

Review of Literature

The US stamp market is small compared to traditional investment markets; however, the scope of the collectible stamp marketplace is quite diverse. According to CNBC (2010), stamp collectors spend close to \$200 million per year pursuing their hobby. The size of the marketplace, which includes auction markets, local bourses, and the internet exceeds \$1 billion in value. Stamp collecting is an even larger leisurely pursuit outside the United States, particularly in China and other Asian countries. Worldwide, stamp collectors spend over \$10 billion on their collections annually (Dimson and Spaenjers 2011). There are many types of collectors and many reasons why people collect. Saari (1997) and McIntosh and Schmeichel (2004) placed collectors in four types of groups: hobbyists, passionate collectors, inquisitive collectors, and expressive collectors. For the hobbyist, the reason for collecting is associated mainly with the pleasure gained from the act. Passionate collectors have very strong desires for the items they collect and will pay any price to obtain a desired collectible. Inquisitive collectors seek items for investment purposes, while expressive collectors find collecting to be a method of self-expression. Nearly everyone collects something, either intentionally or otherwise. There are numerous reasons associated with collecting that are often related to a person's sociological, psychological, and economic well-being needs (Gelber 1991).

The category of collectibles research flows from the larger field of leisure studies. The study of leisure as a quality of life issue is very large. Researchers have examined differences in leisure time based on country similarities (Fuess 2012; Yin 2005), regional differences (Garcia et al. 2007), and motivation (McIntosh and Schmeichel 2004), as well as a multitude of other facets. A key takeaway from the leisure literature is the notion that collecting promotes a sense of camaraderie, which is a social experience that most people desire. The ability to engage in social activities creates an avenue for people to express themselves, enjoy the company of others, and learn through

these social interactions (Belk 1995). Collectors often experience a high degree of camaraderie with other collectors due to the individuals' shared enjoyment surrounding their common interests. Trade shows, conferences, and weekly meet-ups allow collectors with similar interests to learn more about the items they collect while also increasing their social network (Case 2009). The social capital that is gained through these experiences often leads to lifetime friendships or sometimes romantic relationships (Belk et al. 1991). These collectors find a sense of positive personal well-being by being able to work, share, and communicate with those who are like-minded. This may be especially important for those who do not find support for their passions from family members and work colleagues. With the creation of social media, these collectors have been able to expand their social networks significantly by being able to engage with other enthusiasts around the world.

The psychological benefits of collecting can also serve as a mediator for stress in a collector's life (Pearce 1992). In a 2012 study conducted by the American Psychological Association (APA), 52 % of the participants surveyed reported using hobbies as a coping mechanism (El-Ghoroury et al. 2012). Consider another study of medical professionals who worked in mental hospitals. These professionals reported that a common way of coping with stress was to engage in hobbies or other leisure activities (Graham et al. 2001). Physicians and mental health professionals are typically under high levels of stress, which makes coping mechanisms, like collecting, an essential psychological and physiological health tool. In its simplest mode, maintaining a collection can be a relaxing activity that helps people cope with the stresses of everyday life (Iwasaki and Schneider 2003), and as such, collecting can be very beneficial as a way to offset the negative physical and mental consequences of stress.

Obtaining investment returns from a collection is related to the both the life cycle hypothesis and MPT. A common reason given for collecting involves the possibility of creating investment profits. By definition, a collector who makes purchases for investment purposes is engaging in both current consumption and saving behavior. Whether or not this approach to collecting is efficient within a mean-variance efficient framework, or with the context of the life cycle hypothesis, is dependent on a number of factors, including the collector's time horizon, risk tolerance, and budget constraint. Within collecting circles, however, those that collect for profit purposes are often viewed suspiciously even though they engage in the act of hunting for desired items like most collectors (Lafferty et al. 2013). Collectors, or investors, who focus on rare artifacts often do so for the economic or personal gain of collecting pieces that are limited or not in circulation. Items that are no

longer produced are considered to be highly desirable based on the item's intrinsic qualities such as rarity and aesthetics (Dittmar 1992). Art, stamps, books, cars, and memorabilia from celebrities or famous moments in history are often highly treasured and sought after. Although these collectibles can sometimes be highly profitable, many collectors seek out these items to experience a level of emotional satisfaction that is not solely attributed to the financial satisfaction gained from the items. The consumption of collectibles can create positive self-esteem for the owner due to feelings of increased levels of affluence (Hirschman 1990). Often, collectors seek items that few or no others possess, which can lead to feelings of uniqueness and fame. Collectibles can also be used as a signal of wealth in social circles. It is this possession of a remarkable item(s) that makes the collector notable by association.

Nostalgia is another common reason why collectors seek to own items. For these collectors, past memories are kept alive with the ownership of objects that elicit fond memories of cherished activities, events, or items. Often these collectors feel that they are doing their part in preserving significant items from the past (Formanek 1991). Collections may include fad items (e.g., Beanie Babies, Cabbage Patch dolls, Pet Rocks) or more mainstream collectibles (e.g., political paraphernalia, rocks, coins, comics, and machinery). By collecting these items, collectors become self-proclaimed stewards of history. They often consider themselves to be preservers of works (Formanek 1991). These "stewards" feel that it is their obligation to protect objects to ensure that future generations will be able to see and enjoy articles from the past.

Another reason for collecting is that it can serve as a self-perceived mechanism to help the collector achieve immortality. Collectors oftentimes bequeath their collections to museums, libraries, and other public venues in an effort to ensure that future generations will enjoy one or more objects after the collector's death (Belk 1995). As an immortality tool, collecting ensures that a person's life work will bring joy to others while remaining relevant after death. It is not uncommon to visit a museum or city and find that an institution is named after a collector who left behind his or her collection(s) for others to enjoy. Consider the Chester Beatty Library. This facility is one of the most popular attractions in Dublin, Ireland. Beatty's collection of ancient books, calligraphies, illustrations, and poems are housed in a library bearing Mr. Beatty's name and admission is free to the public (Chester Beatty Library 2014). Although Beatty has been deceased for nearly 50 years, he has gained immortality through his many collections that are on display. Collectors send their items to the National Archives, The Library of Congress, or to places the collector believes will continue to care for their items when they are no longer able to manage their

collections (McIntosh and Schmeichel 2004). The Library of Congress receives 15,000 items every day, of which 12,000 of these items are added to the Library's collection. (The Library of Congress 2015). Many of these additions are gifts from collectors. It is reasonable to assume that many objects are donated in the hope that the collector will receive some recognition for their life work (as well as a tax deduction).

Finally, collecting behavior can result in what Fisher (1906) termed subjective income or return or what is today more commonly known as psychic income, wealth, or return. When first introduced, the notion of psychic income was linked to the non-monetary benefits associated with workforce employment (Thurow 1978). Today, the concept is generally conceptualized more broadly. Essentially, psychic income can be derived from the possession of collectibles and other objects (Fase 2001). Fisher argued that without subjective value individuals would be reluctant to allocate their resources to these items given other alternatives. The literature dealing with psychic income and wealth is quite large and broad in scope. For example, the concept has been applied to estimates of community value obtained from hosting the Super Bowl™ to determining the benefits associated with policy implementation (Kim and Walker 2012). Psychic income can be created in at least two ways. Some activities create satisfaction and well-being because the individual engaging in the behavior receives value from the activity. Psychic income can also be generated purposely. Some behaviors are encouraged through the deliberate introduction of behavioral satisfaction. For example, volunteering has no explicit monetary value; however, organizations that rely on volunteers often structure events so that participants gain value through games, prizes, and companionship.

Summary

As a human behavior, collecting has a long and varied history. Nearly every collector allocates a portion of his/her constrained budget for the purchase of objects and items as a way to fulfill one or more objectives. For most collectors, the primary outcome associated with their hobby involves the receipt of pleasure through the enhancement of well-being (e.g., reduction of stress, alleviation of boredom, or prestige). Most collectors also acknowledge the hope that their expenditures will result in later life wealth. Even so, from a purely economic life cycle viewpoint, engaging in a collecting hobby is somewhat illogical. While it is true that collecting provides sociological and psychological value, individuals could likely do better financially, controlling for transaction and holding costs, investing in diversified portfolios of more traditional investment assets. If this is true, then collectors must obtain some quantifiable value

through the behavior beyond financial gains. The discussion that follows describes the methodology used to estimate the extent to which collectors obtain value from their behavior.

Methods

Data

The intent of this study was to document the extent to which stamp collectors experience an opportunity cost associated with expenditures on their collections. In addition, the paper provides a quantitative estimate of the value of collecting as a hobby based on the opportunity cost associated with collectible expenditures. Collectible US postage stamps were used as a collectible proxy. Stamp price data were obtained from retail prices listed in the *Scott's Specialized Catalogue of United States Stamps and Covers* for the period 1969 through 2013. Prices were tracked for what are known in the philatelic literature as classic United States stamps—defined in this study as those issued prior to 1900. Table 1 shows the Scott number (i.e., the standard reference identification number associated with the stamp), required condition for inclusion in the index, and date of issue for the stamps included in the unweighted index. It is important to note that among US stamp collectors, the index of stamps in Table 1 represents a standard fixed index of collectible postage, as developed by the editors at *Linn's Stamp News*. That is, the index was not developed for this study, but rather, the index was used as a benchmark of stamp values for the purposes of this study.

Data for stock and bond returns were obtained from public sources at the Stern School of Business at New York University (<http://people.stern.nyu.edu/adamodar/>). These data were used for comparison purposes. In this study, the S&P 500 was used to represent stocks (i.e., equities). Bonds were proxied by 10 year constant maturity US Treasury bonds. The 3-month Treasury bill, or T-bill, rate was obtained from the Federal Reserve database in St. Louis (FRED) and used as the risk-free rate of return. T-bills are short-term debt obligations that are issued by the US Government that mature in a year (Investopedia 2015). All of the data were used to estimate mean and standard deviation figures for the classic stamp index, the S&P 500, bonds, and T-bills over three time periods: (a) 1969 through 2013, (b) 1990 through 2013, and (c) 2000 through 2013. These three periods were chosen as representative of different market and economic environments, ranging from a full market cycle to periods of relative expansion and retraction. Data were then used to calculate MPT outputs, including the Sharpe ratio, beta, CAPM, alpha, and the

Modigliani ratio. Dollar values reported and evaluated are in US dollars.

Modigliani Measure

Modigliani and Modigliani (1997) developed a portfolio analysis tool called M^2 . The M^2 measure was used in this study to approximate the value hobbyists and collectors attribute to their collecting behavior. The M^2 measure is an extension of Sharpe's (1966) seminal risk-adjusted performance ratio, which is defined as:

$$S = \frac{E[R_a - R_b]}{\sigma_a}$$

where, S is the Sharpe ratio, R_a is the asset return, R_b is the risk-free rate, $E[R_a - R_b]$ is the expected value of the excess return over the risk-free rate, and σ_a is the standard deviation of the excess return. The Sharpe ratio allows investors to compare and rank two or more securities, assets, or portfolios on a risk-adjusted basis. Modigliani and Modigliani (1997) refined the Sharpe ratio so that the excess return reflects an asset's risk compared to a benchmark. For example, assume an asset's volatility is twice that of a reasonable benchmark. The M^2 measure allows a direct comparison of risk-adjusted returns by showing the magnitude of an asset's performance compared to a benchmark. The M^2 is unique in that it allows investors to compare assets on a risk neutral basis. The investment with the higher M^2 can then be defined as offering superior performance. The formula for the M^2 measure is:

$$M^2 = R_i + \left(\sigma'_{BP} \left[\frac{(R_p - R_f)}{\sigma'_p} \right] \right)$$

where, M^2 is the Modigliani measure, R_p is the return of the portfolio (investment), R_f is the risk-free rate, σ_p is the standard deviation of the portfolio (investment), and σ_{BP} is the benchmark standard deviation. In this study, the S&P 500 served as the benchmark, whereas T-bills served as the risk-free rate of return.

Data Analysis

Data associated with the S&P 500, bonds, and T-bills were matched to the classic stamp index. Correlations between and among these assets were assessed. Using mean, standard deviation, and correlation estimates, the Sharpe ratio, beta, CAPM, alpha, and M^2 were calculated for classic stamps. Comparisons of these metrics were used to determine the extent to which stamp collectors incur an opportunity cost when making expenditures and whether the value of collecting can be quantified.

Table 1 Classic US stamp index components

Classic stamps								
Scott #	Condition	Series issue	Scott #	Condition	Series issue	Scott #	Condition	Series issue
1	U	1847	119	U	1869	239	UN	1893
11	U	1851	179	U	1875	280	UN	1897
68	U	1861	207	UN	1881	285	M	1897
73	U	1861	224	UN	1890	288	UN	1897
77	U	1861	230	M	1893	292	UN	1897
113	U	1869	233	UN	1893			

Source Linn's US Stamp Market Index as Published in *Linn's Stamp News*, October 2012

U used, UN unused, M mint (never hinged)

Results

Results shown in Table 2 provide an answer to the first question of interest in this study, namely, stamp collectors do experience an opportunity cost associated with expenditures made to support their collecting agenda. Over the three periods (i.e., 1969–2013, 1990–2013, and 2000–2013), classic stamps returned 5.50, 2.26, and 0.60 %, respectively. At the same time, stocks returned 10.32, 10.19, and 4.91 %, respectively. Similarly, bonds generated returns of 7.10, 6.37, and 5.66 %, respectively. In other words, stamps underperformed both stocks and bonds over the three periods. Stamps did, however, match T-bill returns in two of the three periods. This implies that while stamp collectors were able to keep pace with

inflation over longer periods (1969 through 2013 and 1990 through 2013), stamps, as investment asset, were not able to keep pace with either stocks or bonds.

Of course, raw mean data can sometimes be misleading. It is important to account for the volatility associated with the generation of returns. Of the four assets (i.e., stamps, stocks, bonds, and T-bills), stocks were the most volatile. Bonds exhibited slightly more volatility compared to stamps in two of the three periods. As expected, T-bills were the least volatile.

The Sharpe ratio was used to evaluate the relative risk-adjusted performance of the four assets. Stocks provided the highest risk-adjusted returns in the periods 1969 through 2013 and 1990 through 2013. Bonds were the best performing asset in the period 2000 through 2013. Stamps

Table 2 Class Stamp returns compared to stocks, bonds, and T-bills

	Asset statistics							Correlations			
	Return (%)	SD (%)	Sharpe ratio	Beta	CAPM (%)	Alpha (%)	M ²	Classic stamps (%)	Stocks (%)	T-bills (%)	Bonds (%)
1969–2013 period											
Classic stamps	5.50	11.93	0.03	−0.09	4.76	0.74	6.50	100			
Stocks	10.32	17.20	0.30	1.00	10.32	0.00	10.32	−12	100		
T-bills	5.20	3.24	n.a.	0.01	5.26	n.a.	13.63	44	6	100	
Bonds	7.10	9.92	0.19	0.02	5.29	1.81	9.94	−35	3	20	100
1990–2013 period											
Classic stamps	2.26	7.35	−0.13	0.06	3.65	−1.40	2.04	100			
Stocks	10.19	17.96	0.39	1.00	10.19	0.00	10.19	14	100		
T-bills	3.25	2.40	n.a.	0.02	3.39	n.a.	8.70	38	15	100	
Bonds	6.37	9.50	0.33	−0.13	2.31	4.06	9.90	−23	−25	27	100
2000–2013 period											
Classic stamps	0.60	4.93	−0.28	0.00	1.96	−1.36	−3.47	100			
Stocks	4.91	19.22	0.15	1.00	4.91	0.00	4.91	1	100		
T-bills	1.96	2.01	n.a.	−0.02	1.89	n.a.	1.57	83	−22	100	
Bonds	5.66	9.24	0.40	−0.37	0.87	4.79	9.61	−6	−77	32	100

trailed, from a risk-adjusted perspective, in all three periods.

As an investment, collectible stamps did not do particularly well over the three periods. The CAPM estimate, which is based on the systematic risk (i.e., beta) of each asset, shows the expected rate of return for the assets (excluding T-bills). In effect, this is a risk-adjusted measure that allows for relative return over- or under-performance to be estimated. Alpha was calculated by subtracting each asset’s mean return from the asset’s CAPM. Unfortunately for stamp collectors, the alpha estimates were negative over the periods starting in 1990. This means that stamp collectors did worse than expected, on a risk-adjusted basis, compared to stock investors. Only during the much longer holding period was the alpha positive.

The opportunity cost incurred by stamp investors was relatively large over the three periods. These opportunity costs provide a direct measure of the foregone rate of return collectors obtain from their collections. Table 3 shows the estimates of value earned through stamp collecting behavior. These figures represent the classic stamp M^2 subtracted from the stock M^2 and bond M^2 over the three periods. For example, during the period 1969 through 2013, stamp collectors underperformed stock investors by 3.82 % on a risk-adjusted annualized basis. Compared to bonds, during the same time period, stamp collectors incurred a 3.44 % opportunity cost in relative returns. This indicates that regardless of the risk profile of the average stamp collector, an opportunity cost was associated with their collecting behavior.

Quantified Examples

The decision to allocate a portion of a constrained budget to the purchase of collectibles implies that a collector receives benefits associated with the expenditure that are greater than the costs (e.g., monetary outlay, time, etc.). Benefits have both immediate and longer term consequences. As discussed earlier, an immediate benefit associated with collecting is the emotional satisfaction generated from ownership. The utility gained from a collection can certainly extend into future periods. Some collectors also anticipate that their collections will increase in value. As shown in this study, classic stamp collectors can reasonably expect their collections to keep pace with

inflation, but beyond that, it would be imprudent to anticipate large capital gains. This is the essence of the primary long-term cost associated with collecting behavior (other long-term expenses include storage and insurance).

This cost is primarily related to the forgone growth in investment value (i.e., wealth) that is given up by a collector. Assume, for example, a collector were to invest \$10,000 into stamps comprising the classic stamp index. If stamps increase at value by 5.50 % (the return over the period 1969–2013) and the collector holds the collection for 30 years, the stamps will increase in value to nearly \$50,000. After dealer, sales, and transaction costs of approximately 30 %, the collector would receive about \$35,000. On the other hand, had the collector been a saver/investor, the same \$10,000 would have grown to about \$190,000, assuming the 1969 through 2013 equity return of 10.32 %.

A similar result occurs when a collector allocates a specific dollar amount of their annual budget for the purchase of stamps. Assume a collector spends \$2500 per year building a classic stamp collection that can earn 5.50 % on an annualized basis. Over 30 years, the collection will be worth slightly more than \$181,000 before transaction costs. A comparable investment into stocks earning 10.32 % would generate almost \$437,000 in wealth. The difference (\$256,000) is the total future value opportunity cost. In terms of retirement wealth, assuming the collector lives 25 years beyond the stamp collection’s distribution, the collector will lose more than \$10,000 per year in income.

From a pure dollar cost and benefit analysis perspective, collecting stamps is not a wise decision; however, millions of individuals are engaged in this hobby. One must presume that the value obtained through collecting behavior outweighs both the short- and long-term costs associated with the hobby, if not monetarily at least psychically. In the short run, collectors must tradeoff other consumption options in favor of their collecting interest. Additionally, they are making either an explicit or implicit choice to reduce saving for wealth. This forgone wealth decision will have an impact later in life. Even so, few collectors, when given this information, will change their behavior. This indicates that the intangible benefits are related to non-monetary returns (e.g., psychic income and/or wealth) and that the returns associated with collecting must outweigh related costs.

Table 3 Opportunity cost estimates

	1969 through 2013	1990 through 2013	2000 through 2013
Stocks (%)	3.82	8.16	8.37
Bonds (%)	3.44	7.87	13.07

Discussion

Hobbyists and collectors obtain a great deal of satisfaction from their leisurely pursuits (McIntosh and Schmeichel 2004). One immediate effect associated with a collectible expenditure is the pleasure gained from ownership; this often leads to greater happiness and well-being (Robinson and Martin 2008). For many collectors, the ability to admire their possessions is worth a great deal of value. Traditionally, this value has been defined as either psychic income or psychic wealth—returns that do not entail monetary considerations. While it is important to recognize that hobbies and collecting interests provide non-monetary leisure activity returns, it is equally valuable to acknowledge that directing expenditures from current income and resources towards a collection entails opportunity costs. Within the traditional life cycle hypothesis, wealth is achieved primarily through saving. If someone allocates a greater percent of his/her current lifetime income budget to the purchase of collectibles then, by definition, he or she will save less and accumulate less investment wealth, holding all other factors constant.

This study illustrates the value of this opportunity cost on an annual basis. Stamp collectors who allocate 100 % of their available budget to collectible stamps forgo nearly 3.50 % in lost investment returns through their collecting activities. During some periods, the opportunity cost, on a risk-adjusted basis, is much larger for these collectors. It is important to acknowledge, however, collectors probably distribute their savings to both collectibles and other financial assets. The low returns of collectibles can be partially compensated by the higher returns obtained from other assets. As such, the opportunity costs shown in Table 3 are likely overestimated for some collectors. Hobbyists and collectors, however, may not see these costs as a hindrance to their life's financial goals. What is termed an opportunity cost in economics can also be interpreted as the value stamp collectors gain from their hobby.

The impact of this analysis depends on the perspective of the reader. For those who focus on normative outcomes as directed by the life cycle hypothesis, the lost return due to expenditures on classic stamp assets may be foolish. While it is true that stamps maintained purchasing equivalency with inflation, the forgone growth in wealth was substantial over the periods examined. Theoretically, stamp collectors are jeopardizing their future income through expenditures on their collections. Alternatively, stamp collectors can rightly say that while they may be giving up future wealth, and potential earnings, they are gaining, in effect, an increase in current well-being equivalent to approximately 3 % annually. Stated another way, the pleasure, joy, and emotional satisfaction associated with the current purchase and

ownership of the stamps must be greater than the potential gains associated with future wealth.

Implications and Limitations

It is common for financial advisers (e.g., educators, counselors, planners, extension agents, accountants) to encounter individuals who are passionate about a collecting hobby. Seldom, however, are collectors boastful or totally forthcoming about their collecting behavior. As Garfield (2008) noted, collectors oftentimes consider their passion to be a bit odd and out of the mainstream, so they are less apt to discuss their interest with non-collectors. In order to gain a full understanding of the value of a person's hobby (both financial and otherwise), a financial adviser must often delve deeply into the collector's holdings looking for patterns of expenditures.

For many individuals, collecting is more than a leisurely activity. In some cases, expenditures on collections can be quite large in comparison to the income or wealth situation of the person's household. Objectively, within the context of this paper, it may seem somewhat strange for a person to spend thousands of dollars on what is essentially used postage. For individuals who are experiencing the effects of death, divorce, or debt (i.e., the Big "Ds"), coming to grips with the value of their collection, the amount being spent on the collection, and the possible distribution of the collection can create painful emotions. Financial advisers need to be cautious about making hasty recommendations regarding a person's collecting behavior. Instead of viewing a collection as strictly a net worth item or as a form of consumption expenditure, this paper hints at an alternative point of view. It does appear that stamp collectors experience an opportunity cost when making a choice to purchase stamps compared to investing in stocks or bonds. However, this risk-adjusted opportunity cost is likely equivalent to the value (i.e., rate of return) received by the collector from their hobby. Among advisers who are providing advice to collectors experiencing financial stress, it is important to acknowledge the quantifiable value of a collection. This means going beyond market values by accounting for the "rate of return" received by the collector on an annual basis. The foregone return rate of stamp collecting is likely equal to about 3 % on an annualized basis. It seems, therefore, essential that any recommended financial solution designed to help a collector deal with a financial hardship account for the lost psychic income associated with their collecting activity.

Advisers can play a significant role in helping their clients protect and evaluate their collections. After an adviser has learned that a client has a collection, it would be beneficial to

have a conversation about how to treat the collection for insurance and estate planning purposes. The client's family could potentially inherit valuable items unknowingly that may end up being sold or given away for less than fair market value. Advisers can work with their clients to evaluate the collections' value. After evaluating the collection, the adviser can help the client determine the proper level of insurance and other precautionary methods that would be needed to protect the collection from monetary loss. Advisers can also help their clients save money by suggesting various methods to purchase collectibles. Estate sales, auctions, and even yard sales can be less costly sources to procure collectibles. Of course, an item's authenticity would need to be established, but these cost savings may be especially helpful for those who are spending a significant portion of their income on their collections.

While the results from this study are unique and noteworthy, it is important to acknowledge certain limitations associated with the methodology. First, while classic collectible stamps were used a proxy for collectibles, it is possible that other objects may generate different implied rates of return as well as actual capital gain returns. As such, the findings apply most specifically to the special case of collectible stamps. Second, it is also possible that had other stamps been included in the index the results from the study might have changed. Third, only one source was used to obtain the retail value of the stamps included in the index. Multiple sources of information may be available to obtain the retail value of these stamps or other collectibles used for valuation. It is important to investigate several sources for value, especially for those items that may fluctuate frequently over time due to shifts in consumers' tastes and preferences. Finally, the length of analysis is a potential constraint. Had more data been available, the actual return and risk figures certainly would have been different. Regardless of these limitations, this paper does add to the literature by showing that collecting may provide collectors and hobbyists a value that is not purely monetary in nature or scope. More research is needed to verify this possibility in relation to collectible stamps and other objects.

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