

Chapter 9

Relationship between Second Life and the U.S. Economy

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ABSTRACT

Second Life is a virtual world designed to be a free, laissez-faire market economy in which Linden Dollars are used to buy and sell goods and services. This study investigated the relationship between the economies of Second Life and the United States, using financial data collected from Linden Lab and the Federal Reserve. Partial correlation analyses were computed between two pairs of economic measures, and our results indicated that there was a significant relationship between the two economies.

INTRODUCTION

After the dot-com crash in the 1990s, the only Internet-related industry that did not suffer a recession was the computer gaming industry (Hsu & Lu, 2004). Currently, there are more than 100 multiplayer online games with over 10 million players worldwide (Abate, 2005). The market for online gaming in the U.S. reached \$1.9 billion in 2005 (Mintel, 2009), while global market reached \$ 5.2 billion by 2006 (Hsu & Lu, 2007).

Due to the large number of users and the size of the market, the gaming industry has a large economic

impact. However, it also has an enormous social impact, and online behavior may be as important as understanding behavior in the real world (Gillath, McCall, Shaver, & Blascovich, 2008). The focus of this study was to examine the relationship between player behavior in the virtual economy of *Second Life*, and the real world economy of the U.S.

BACKGROUND

Research indicates that some motivators for online game playing are flow experience (cognitive absorption), imaginative responses such as fantasy and escapism, and emotional responses such as enjoy-

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ment and emotional involvement (Ducheneaut & Moore, 2004; Holsapple & Wu, 2007; Hsu & Lu, 2004; Hsu & Lu, 2007; Koo, 2009; Yee, 2006). However, the social affiliation aspect of games appears to be one of the primary motivators; in fact, Kim, Oh, and Lee (2005) found that the social characteristics of online games were more crucial to online game success than technological ones.

One aspect of online gaming, virtual worlds, is aimed directly at this need for social affiliation. These computer-generated virtual worlds may represent fantasy worlds or simulate the real world, but in either case, the virtual world allows users to interact with each other through their avatars.

One of the more successful online games is *Second Life*, created by *Linden Lab* in 2003 as an international multiplayer online game. In the U.S. alone, *Second Life* has been played for over 14 million hours (Linden Lab, 2009), and Wagner (2008) suggests that Linden Labs makes between 40 and 50 million a year in profit.

Second Life includes many realistic aspects of real life, including some aspects of real-world physics that need not apply to virtual worlds (Claverling & Nicols, 2007; Mennecke, McNeill, Ganis, Roche, Bray, & Konsynski, 2008). The game centers on commerce, the sale and resale of goods, and the advancement of its virtual economy; there are no set objectives designed into the game (Miano, 2007; Pollitzer, 2007). Virtual characters known as *Residents* run businesses, own land, travel, and buy and sell goods and services with the *Linden Dollar*. Users retain all intellectual property rights for objects they create, and can control whether a buyer will be able to resell, edit, or create copies of objects they sell (Claverling & Nicols, 2007; Seto, 2008). This key inclusion has enabled *Second Life's* economy to exhibit traits similar to real countries' economies, for, as Ondrejka (2008) pointed out, "... property rights are a key enabler of innovation and therefore per capita economic growth" (p. 237).

According to Landay (2008), the concept of virtual goods and its values has been around since 1984, when William Gibson coined the term *consensual hallucination*. This term described the process of giving "virtual world objects meaning, any value beyond dreams or fantasy, ascribed meta-material value to what is actually only code, digital information" (Landay, 2008, p. 2). However, the boundary between virtual and real assets is not as clear as it once was. The currency of *Second Life*, the *Linden Dollar*, can be converted to and from the U.S. Dollar through *Linden Lab's* currency exchange market (Godfrey, 2008). Virtual items can be exchanged for real money on virtual item transaction websites such as *ItemBay* (Guo & Barnes, 2007), and some players have become successful enough at selling virtual goods that they have left their real-world jobs behind (Childers, 2009).

The permeable boundary between the virtual world and the real world is also evident in areas other than the economy. *Second Life* has been used in a variety of real-world applications, including telehealth, psychological research, engineering studies, virtual campuses, concerts, religion, therapy, art shows, and virtual presences for businesses such as IBM, Sun Microsystems, Vodaphone, Swisscom, Toyota, and Reuters (Antonijevic, 2008; Barry, 2008; Bessière, Ellis, & Kellogg, 2009; Cabiria, 2008; Childers, 2009; Chu & Joseph, 2008; Claverling & Nicols, 2007; De Lucia, Francese, Passero, & Tortora, 2009; Gaggioli & Riva, 2007; Gillen, 2009; Jeffers, 2008; Ritzema & Harris, 2008; Ryssdal, 2008). In fact, Childers (2009) noted that there is a new art form called *machinima*, which consists of movies made using nothing but *Second Life* avatars, tools and cameras.

Thus, while virtual worlds have an enormous economic impact, they have a powerful social impact as well, causing Gillath, et.al. (2008) to note that understanding behavior in these virtual environments may be as important as understand-

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