

The impact of virtual world economy in real world economy

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Abstract: Internet technology is transforming the way we define nation-states. It has created "virtual states" in which parallel communities are formed and political agendas are executed. Due to the emergence of Internet technology, visions of "techno-imperialism" and "electronic warfare" are causing nation-states to enact regulatory measures to preserve political, economic and cultural integrity. While the information infrastructure is the heart of the economic stability for most nations, the possibility of "viruses" or "electronic bombs" bringing ruin to an economy is real indeed. This means that architects of the "nation-state" will have the gargantuan task of re-examining existing politico-economic paradigms and fully integrate technological initiatives in its apparatus to prevent imminent marginalization.

Key words: virtual economy, virtual economies, MMOG, virtual markets

The economist Edward Castronova realized that in online virtual-world games, people were creating new economies that were as good as real to millions of participants. His studies eventually drove him to write an entire book about the subject, *Synthetic Worlds: The Business and Culture of Online Games*, published in 2005.

The growth of online games, from the No. 1 *World of Warcraft* to Linden Lab's open-ended virtual world, *Second Life*, has hap-

pened even faster than he predicted in his book.

In 2005, Castronova found that, on average, a typical person spending a typical hour in *Everquest* produces goods and services roughly equivalent to the value of goods and services produced by a typical Bulgarian spending a typical hour in Bulgaria.

Now a follow-up analysis has shown that online gaming in virtual worlds also has a total economic impact just as big as some

real countries, although smaller ones than Bulgaria

Many economists thought that virtual economy it was a fake economy. But later they realised that it really didn't feel fake at all when they saw how it connected to the real economy. As you can see clearly in *Second Life* with its translation of Linden dollars into real dollars, and then you imagine how big this phenomenon could get, it started to have real-world macroeconomic implications. In economy, there is no difference between reality and fantasy.

For people born after 1985, there isn't any such thing as virtual reality. There's just another way that you talk to people. This business of having characters and buying and selling stuff for gold pieces it's very natural.

These products like *Second Life*, and the way that *World of Warcraft* broke out, have just shocked the hell out of me. I thought the big impact might take until maybe 2010.

The philosophy of Virtual World Economy is that ownership and the ability to liquidate the value of your virtual holdings, would in theory spark economic development. If you let people capture the value of what they create, they're going to create a lot more.

The economy is everywhere. Its laws are applicable even in societies that don't exist, which are inhabited by people that are not real. It is what has happened in several online games like *World of Warcraft*, *Hattrick* or *Second Life* that have suffered diverse economic problems with monetary losses that impact the real world sometimes.

World of Warcraft is an online role-playing game where the player participates in a fantastic universe similar to *The Lord of the Rings*. It has more than 10 million registered users, according to the programming

company (Blizzard). About half of them are in Asia. In fact, the problem came from Asia: in this game, the most valuable currency is the gold, very difficult of getting, and for that reason, some people and companies decided to make business, mainly in China. They got "gold" during 24 hours a day, then they sold it to the other users who didn't want to get it by themselves. The transaction was carried out to exchange "gold" for real money in auctions websites like Ebay (for example, if you want to buy 5000 gold coins, then you need about 150 Euros). This way, a scarce thing began to be plentiful, the gold was devaluated and the inflation was caused by this. In this game, the cost of "living" was radically increased. For this reason, the company closed the accounts of 114000 people who were making money by this method.

Something very similar happened in another video game: "*Final Fantasy XI*". The owner closed more than 4000 accounts of players who exchanged virtual assets for real money. This situation also caused inflation. The action of the programmers was definitive. They reduced the money flow by eliminating several millions in order to decrease prices: the European Central Bank dream.

Some virtual worlds have a surprising similarity with reality. *Second Life* has cases of real estate speculation and financial crisis. This game uses the linden dollars as currency to buy properties and virtual objects. It is possible to exchange them for real money in a market implemented by Linden Lab (a programmer). In this market, a dollar is equal to about 250 lindens. The business opportunities are always present: there is a story about a Chinese woman (her nickname is Anshe Chung) who appeared on *Business Week* cover. She won \$250000 when she sold "lands" where she built hotels and apartments.

Around the globe, a real-world trade has emerged around virtual assets. Estimates vary wildly, but some analysts put the worldwide real-money trade in virtual assets at more than \$2 billion, most of which changes hands in South Korea and China.

Some virtual currencies are used to buy property, tools and other assets in virtual reality worlds, such as Second Life. Most, however, have been designed to reward gamers and allow them to upgrade their play. Even though many game publishers technically forbid trading their online currencies for real money, gamers dubbed "gold farmers" try to make money by winning online assets and selling them for cash to less successful players.

Economists say virtual currencies work like any other currencies, so long as people trust the institutions behind them. The U.S. dollar, which lost its gold backing in 1971, survives because people trust the U.S. government.

Virtual Worlds – Fiction or Reality?, muses on the impact of virtual worlds on different generations, and asks how this world of immediate access, limitless social skills and unrestrained behaviour influence our moral framework.

All this fretting over artificial environment mores is a sign that virtual worlds are gradually being accepted as extensions of the real world. The social and economic evolution of these worlds raises challenging questions about their governance; in particular, how they can be developed in a sustainable and desirable fashion as both economies and communities.

Virtual Worlds Serve As Economic Laboratories

One problem that economists face is the gnawing fact that humans often don't act rationally, potentially undermining many basic theories. It would be nice if economic theories could be tested in a lab setting. While there is a burgeoning field of behavioral economics, tests are costly and difficult to carry out. Professor Edward Castronova has made a career studying the **economics of virtual words**, MMORPGS like Ultima Online and Everquest. He has made some interesting insights by looking at how players react under various economic conditions. For example, in worlds with little scarcity, people are bored. When too many players want to be a wizard (or anything else), the profitability of that profession decreases. Neither of these insights differ from what you'd expect in the real world, though therein lies the allure. Theoretically, these worlds could act as labs to test economic models, like socialism, the third way, or a flat tax scheme. As the games get more advanced, perhaps they could be used to study more complex concepts like unionization, school vouchers, and single-payer healthcare. The experience of games designers could help test for the unintended consequences of regulations, something that would be a help in public policy. While economists like to call their field a science, some of their ideas are as absurd as the geo-centric model of the universe. Having more of them do labwork, like other scientists, could go a long way in making economics less dismal.

Virtual economy

A **virtual economy** (or sometimes **synthetic economy**) is an emergent economy existing in a virtual persistent world, usually in the context of an Internet game. People enter these virtual economies recreationally rather than by necessity; however, some people do interact with them for “real” economic benefit.

Virtual economies are observed in massively multi player online role-playing games (MMORPGs). The largest virtual economies are currently found in MMORPGs. Virtual economies also exist in life simulation games which may have taken the most radical steps toward linking a virtual economy with the real world. This can be seen, for example, in Second Life’s recognition of intellectual property rights for assets created “in-world” by subscribers, and its laissez-faire policy on the buying and selling of Linden Dollars (the world’s official currency) for real money on third party websites. Virtual economies can also exist in browser-based internet games where “real” money can be spent and user-created shops opened, or as a kind of Emergent gameplay.

Virtual property can refer to any resource that is controlled by the powers-that-be, which includes virtual objects as well as avatars or user accounts in their entirety. The following characteristics are commonly found in virtual property. Note however that it is possible for virtual property to lack one or more of these characteristics, and they should be interpreted with reasonable flexibility.

1. **Rivalry:** Possession of property is limited to one person or a small number of persons.

2. **Persistence:** Possession is maintained even when the property is not in use. Users expect property to remain in their possession between sessions.

3. **Interconnectivity:** Property may affect or be affected by other people and other property. The value of property varies according to a person’s ability to use it for creating or experiencing some effect.

4. **Secondary markets:** Virtual property may be created, traded, bought, and sold. Real assets (typically money) may be at stake.

5. **Value added by users:** Users may enhance the value of virtual property by customizing and improving upon the property.

The existence of these conditions create an economic system with properties similar to those seen in contemporary economies. Therefore, economic theory can often be used to study these virtual worlds.

Within the virtual worlds they inhabit, synthetic economies allow in-game items to be priced according to supply and demand rather than by the developer’s estimate of the item’s utility. These emergent economies are considered by most players to be an asset of the game, giving an extra dimension of reality to play. In classical synthetic economies, these goods were charged only for in-game currencies. These currencies are often sold for real world profit.

A game’s synthetic economy often results in interaction with a “real” economy; characters, spells, and items may be sold on online auction websites like eBay for real money. While many game developers, such as Blizzard (creator of World of Warcraft), prohibit the practice, it is common that goods and services within virtual economies will be sold on online auction sites and traded for real currencies.

According to standard conceptions of economic value, the goods and services of virtual economies do have a demonstrable value. Since players of these games are willing to substitute real economic resources of time and money (monthly fees) in exchange for these resources, by definition they have demonstrated utility to the user.

Some virtual world developers officially sell virtual items and currency for real-world money. Further and more involved issues revolve around the issue of how (or if) real-money trading subjects the virtual economy to laws relating to the real economy. Some argue that to allow in-game items to have monetary values makes these games, essentially, gambling venues, which would be subject to legal regulation as such. Another issue is the impact of taxation that may apply if in-game items are seen as having real value. If (for example) a magic sword is considered to have real-world value, a player who kills a powerful monster to earn such a sword could find himself being charged tax on the value of the sword, as would be normal for a "prize winning". This would make it impossible for any player of the game not to participate in real-money trading.

A third issue is the involvement of the world's developer or maintenance staff in such transactions. Since a developer may change the virtual world any time, ban a player, delete items, or even simply take the world down never to return, the issue of their responsibility in the case where real money investments are lost through items being lost or becoming inaccessible is significant. Richard Bartle argued that this aspect negates the whole idea of ownership in virtual worlds, and thus in the absence of real ownership no real trade may occur. Some developers have

acted deliberately to delete items that have been traded for money, as in Final Fantasy XI, where a task force was set up to delete characters involved in selling in-game currency for real-world money. Although virtual markets may represent a growth area, it is unclear to what extent they can scale to supporting large numbers of businesses, due to the inherent substitutability of goods on these markets plus the lack of factors such as location to dispense demand. In spite of numerous famed examples of the economic growth of Second Life an amateur analyst in 2008 estimated the income inequity in Second Life's economy as worse than has ever been recorded in any real economy. However, it is not clear if application of these real measures is appropriate to a virtual world where (for example) income is not necessary to survive.

Tools for the comparison of this secondary market have recently become more numerous. This has occurred as a response to alleviate the labor involved in leveling that requires hours, days or weeks to achieve. Being able to exchange real money for virtual currency provides the player purchasing power for virtual commodities. As such, players are guaranteed opportunities, increased skills and a fine reputation, which is a definite advantage over others.

Capital in Virtual Economies

In these virtual economies, the value of in-game resources is frequently tied to the in-game power they confer upon the owner. This power allows the user, usually, to acquire more rare and valuable items. In this regard, in-game resources are not just tradable objects but can play the role of *capital*.

Players also acquire human capital as they become more powerful. Powerful guilds often recruit powerful players so that player can acquire better items which can only be acquired by the cooperation among many players (sometimes to the hundreds).

A **massively multiplayer online game** (also called **MMOG** or simply **MMO**) is a video game which is capable of supporting hundreds or thousands of players simultaneously. By necessity, they are played on the Internet, and feature at least one persistent world. They are, however, not necessarily games played on general purpose computers; most of the newer game consoles (Xbox 360, PSP, PS3, Wii, DS, etc.) can access the internet, and thus can have MMO genre games.

MMOGs can enable players to cooperate and compete with each other on a grand scale, and sometimes to interact meaningfully with people around the world. They include a variety of gameplay types, representing many video game genres. Many MMOGs require players to invest large amounts of their time into the game. Most MMOGs require a monthly subscription fee, but some can be played for free.

Virtual economies

Within a majority of the MMOs created, there is virtual currency where the player can earn and accumulate money. The uses for such virtual currency are numerous and vary from game to game. The virtual economies created within MMOs often blur the lines between real and virtual worlds. The result is often seen as an unwanted interaction between the real and virtual economies by the players and the provider of the virtual world.

This practice (economy interaction) is mostly seen in this genre of games. The two seem to come hand in hand with even the earliest MMOGs such as *Ultima Online* having this kind of trade, real money for virtual things.

The importance of having a working virtual economy within an MMOG is increasing as they develop. A sign of this is CCP Games hiring the first real-life economist for its MMOG *EVE Online* to assist and analyze the virtual economy and production within this game.

The results of this interaction between the virtual economy, and our real economy, which is really the interaction between the company that created the game and the third-party companies that want to share in the profits and success of the game. This battle between companies is defended on both sides. The company originating the game and the intellectual property argue that this is in violation of the terms and agreements of the game as well as copyright violation since they own the rights to how the online currency is distributed and through what channels. The case that the third-party companies and their customers defend, is that they are selling and exchanging the time and effort put into the acquisition of the currency, not the digital information itself. They also express that the nature of many MMOs is that they require time commitments not available to everyone. As a result, without external acquisition of virtual currency, some players are severely limited to being able to experience certain aspects of the game.

The practice of acquiring large volumes of virtual currency for the purpose of selling to other individuals for tangible and real currency is called gold farming. Many players who have poured in all of their personal

effort resent that there is this exchange between real and virtual economies since it devalues their own efforts. As a result, the term 'gold farmer' now has a very negative connotation within the games and their communities. This slander has unfortunately also extended itself to racial profiling (since Asians are commonly the farmers and to in-game and forum insulting).

The reaction from many of the game companies varies. In games that are substantially less popular and have a small player base, the enforcement of the elimination of 'gold farming' appears less often. Companies in this situation most likely are concerned with their personal sales and subscription revenue over the development of their virtual economy, as they most likely have a higher priority to the games viability via adequate funding. Games with an enormous player base, and consequently much higher sales and subscription income, can take more drastic actions more often and in much larger volumes. Blizzard Entertainment and their wildly successful World of Warcraft are not afraid to publicly announce that tens of thousands of accounts have been banned due to violations regarding currency selling. This account banning could also serve as an economic gain for these large games, since it is highly likely that, due to demand, these 'gold farming' accounts will be recreated with freshly bought copies of the game.

Taxation of Virtual Economies & Regulation via On-line Gambling Legislation

Income from sale of virtual items is being considered as real revenue as players in such games have ascribed a real-world value onto them: "By taking any aspect of the game and connecting it directly to the real world, the games have only brought this possibility on themselves." And as that ascribed value is being increasingly converted into to real dollars, attention is now being given by those in taxation law and in governments.

Commentators in taxation law speculate "that profits made in virtual worlds could be taxable even before they are withdrawn as dollars." The speculation seems to be based on the observation that, as one commentator said, "the easier it is to buy real goods with virtual currency (e.g. order a real life pizza) the more likely the IRS will see exclusively in-world profits as taxable."

This conversion has led to direct comparisons with other on-line games of chance as 'virtual winnings'. Once converted into real currencies these 'winnings' have been measurable for some time in real terms. This is why gamers and companies engaged in this conversion, where it is allowed under license from developers, are now being encouraged to apply for licenses under EU legislation.

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