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The Economics of World of Warcraft

Economy has become a huge part of our society, with materialistic habits at an all time high, and money being the means by which we attain what we desire. In its most basic form (and as a generalization), money is attributed to success and happiness in most cultures. As a result of the quest for money, it is no surprise that a complex economy has formed around this paper commodity. When a virtual world is created and a form of currency is implemented, one must expect some sort of economy to form in this virtual world. In order to understand how the World of Warcraft economy differs from our real-world economy we must ask certain questions. What are the items in World of Warcraft that represent general or popular commodities in our economy? How do the prices of these items in the auction house effect gameplay? How do the cornered markets work for these items? How does inflation in the World of Warcraft economy compare to our own? By using these questions to assess the virtual economy of the World of Warcraft we can improve the way that players buy, sell, and interact within the game.

One more point of interest, which will be a focus of this work, is that the topic of discussion is one of relatively little prior research. While there has been some writing on the subject, primarily from Edward Castronova, PhD, the topic remains largely unexplored. This is primarily due to the lack of interest and lack of understanding associated with online gaming, specifically MMORPGs. Many people have a very

shallow understanding of what an MMORPG is and how the world within an MMORPG functions, and often pass off games such as World of Warcraft as simple, mind-numbing exercises in futility. This could not be further from the truth, as the following research, observation, and discussion will prove, along with improving the understanding and efficiency of players already immersed in the vast world that is the World of Warcraft.

In order to address the aforementioned topics a brief assessment of MMORPG economics is necessary. For our purposes, any mention of economics within a game setting will be referred to as “virtual economics,” whereas real-world economic systems will be referred to as “real economics.”

Virtual economic systems, such as those present in World of Warcraft and Everquest Online, function similarly to real economic systems on a very basic level. That is to say that currency is earned, spent, and circulated. The function of currency is exactly the same in virtual economies as it is in real economies, which “suggests that there is something very normal and mundane about cyberspace economies; people live there, work there, consume there, and accumulate wealth there, just as they do [in real economies].”¹ There are some obvious substitutions within virtual economies for systems already in place in real economies. For instance, quests in World of Warcraft take the place of jobs in the real world in that one quests for the rewards, i.e. gold, items, and experience, just as one takes a job for the rewards, i.e. health benefits, salary, and experience. This facet of virtual economics is quite intriguing yet predictable because one would expect that some form of economic system would come into play in a setting so similar to our world, but the intriguing factor is that the world is not real. This brings

¹ Castronova, Edward, "On Virtual Economies" (July 2002). CESifo Working Paper Series No. 752. Available at SSRN: <http://ssrn.com/abstract=338500>

us to the dissimilarities between virtual economies and real economies.

While the basic application of economic systems within virtual economies is similar to that of real economies, the implementation of these systems can be quite different. For instance, Castronova uses the example of price control to exhibit these dissimilarities: “price controls may actually be good policy in cyberspace, even though they most certainly are not good policy on Earth...the example suggests the possibility that virtual economies may be very different from [real] economies, in certain well-defined ways.”² Castronova argues that virtual economies have the ability to produce currency without great cost or consequence, which is obviously discontinuous with real economies.

This suggests that while virtual economies may adopt certain economic principles and systems, they are engineered, and thus lose an important elemental factor present in real economies: fallibility. Virtual economies can be controlled and manipulated by the developers of the game, but real economies must conform to current situations, and are susceptible to failure through imperfections present in human nature. If there is a market crash in the real world, the market must build itself back up through the efforts of people. If, and that is an improbable if, there is some sort of market crash or economic downturn in an MMORPG, the game developers and administrators can fix the problem by flooding the game with gold. This dissimilarity is a testament to the inconsistencies between real and virtual economies, but it is the similarities that make the economic structure within World of Warcraft so intriguing. Within the economic system of World of Warcraft, however, there lies another important factor that has yet to be explained.

² Castronova, Edward, "On Virtual Economies" (July 2002). CESifo Working Paper Series No. 752. Available at SSRN: <http://ssrn.com/abstract=338500>

The concept of items and item value is not something unique to virtual economies, but item value and rarity is something many people are not familiar with. The makers of World of Warcraft wasted no time in introducing new players to the concepts of value and item rarity, which becomes a very important later on in the game. When a player first enters the World of Warcraft they are immediately given certain items as they defeat their first beasts. Initially these items are grey items, but the player soon starts to gather white, then blue, then eventually purple items. These colors, in this respective order, represent the rarity of the item where grey is poor or commonly referred to as “vendor trash”, white is common, green is uncommon, blue is rare, and purple is epic. Items can also have a *legendary* color of orange, but there are only a few of these items on each realm or server. Another concept that the player is introduced to is the “soulbound” item. The concept of a soulbound items means that once the player picks up or equips this special item (depending on the item), they are the only ones allowed to use and own it, unless they sell it to a vendor (for a pretty unfair price). This means it is not trade able or sellable on the auction house after the player “binds” it to themselves.³ This was an important implementation on Blizzard’s part to control certain items from becoming a ridiculously expensive commodity and to make the item more personalized to the character that originally found it. Around level 20 or so the player has decent items that he or she can sell on the Auction House. These Auction House sales can become an integral part of the player’s daily income later in the game, which is why a solid understanding of Auction House economics are essential.

The Auction House works very much like a virtual eBay, which is a system that many individuals are probably semi-familiar with. When a player puts an item up in the

³ <http://www.worldofwarcraft.com/info/items/basics.html>

Auction house they are allowed to put in a minimum or starting bid and a buyout price on the item they are selling. They can also define how long they would like the item to be available for bidding as they are presented with 12, 24, or 48 hour choices.⁴ Although much more simplified than eBay or other real world auction services, the Auction House in the World of Warcraft has enough options to benefit from the formation of sale strategies developed for the maximization of profits. I remember how daunting the Auction House seemed at first when I was a lower level character because of how expensive and mysterious some of the items for sale were, but after experience and research I have come to realize the general logistics of how the auction house works. As a result of this new understanding and certain observations that I made, I wanted to know what it is that fuels the incredibly high prices of certain items in the Auction House.

Before we define what fuels these high prices, we must first explore one of the most direct correlations between the virtual economy of the World of Warcraft and the real economy, which is “real money trade,” or RMT as Edward Castronova coins it. The interplay between real money and gold within World of Warcraft creates a new type of economic structure that transcends the barrier between real and virtual economy. This economic structure is that of real money being traded for fake money, or gold. Edward Castronova analyzes the impact of real money trade on the game, and typesets the two extremes of the spectrum of people who use real money trade in World of Warcraft. “Some players have a lot of time and little (dollar) money; others have a lot of dollar money and little time...the time-abundant receive money for their gameplay time, which raises their effective wage rate. The time-scarce are able to use real money to get around in-game hurdles, and so are able to experience the best parts of the game for less time

⁴ World of Warcraft

cost.”⁵ This explains the motivation of the average World of Warcraft player to engage in real money trade. When resources are scarce, be it time or real money, real money trade can aid players in their enjoyment of World of Warcraft. Considering this facet of the virtual economy of World of Warcraft, economic systems must be taken into account, both in real and virtual economic applications.

Professions are a pivotal piece of the World of Warcraft, but often do not come into play until a player has leveled his or her character a certain amount. The same is true in real life, but rather than leveling a character one must “level” their knowledge and intelligence before they can take on a profession. Professions, i.e. skills, trades, careers, are necessary for any type of functioning society to exist. Unlike a simple “job,” a profession is a specific skill or trade that one possesses. Professions such as lawyer, doctor, and accountant are all specialized fields that require specialized training. Many areas of work are quite broad in their requirements: a doctor can perform surgeries or diagnose patients with mental illness; a lawyer can specialize in criminal law or litigation; an accountant can be a corporate accountant or a personal finance accountant. The point is that one must choose a field which will become one’s specialty, be it a subcategory of a larger field or a field that is specific to begin with. This specialized field or subfield is one’s profession, and professions function very similarly in the World of Warcraft.

Professions in the World of Warcraft become a very important part of a player’s character near the end of the game, or when the player is reaching his or her final levels. The reason for this importance is that a character with a high level profession can create

⁵ Castronova, Edward, "A Cost-Benefit Analysis of Real-Money Trade in the Products of Synthetic Economies." *Info*, Vol. 8, No. 6, October 2006 Available at SSRN: <http://ssrn.com/abstract=917124>

high level gear or items that are very valuable. They can use these items either for themselves or to sell for gold. In order to level these professions the character must spend a considerable amount of time gathering the required materials, so it is understandable that the characters would take the easy route and just *buy* the required materials. This constant buying and selling of items creates another economic system within World of Warcraft: inflation.

Inflation is defined as a persistent, substantial rise in the general level of prices related to an increase in the volume of money and resulting in the loss of value of currency by Dictionary.com, version 1.1. Inflation is often caused by high rates of growth of the money supply, and can be beneficial to economies in small amounts. However, large amounts of inflation are often detrimental to an economy. The balance of an economy is thrown off with every substantial growth in inflation, discouraging investments and depleting supplies of hoarded objects. Hoarding, an effect of drastic inflation, is the practice of buying consumer durables in order to get rid of excess cash with the expectation of imminent deflation. Inflation has occurred and will occur throughout history, and a small amount of inflation at any given time is to be expected.⁶ The impact inflation has on a real economy is significant, but inflation also affects virtual economies, and the impact it has is quite interesting.

Something that many players in the World of Warcraft do not fully realize is the effect that an older player base has on the server's economy in relation to inflation. Every time a new character is made and begins to level up or an existing character kills a monster and obtains an item, money is being "added" to the World of Warcraft's virtual economy. The server automatically spawns these items and amounts of gold as a reward

⁶ "Inflation." Wikipedia. 2 June 2008 <http://en.wikipedia.org/wiki/Inflation>.

for the player's work, which is the basis of "farming" for money. Farming is the harvesting of virtual commodities for the sole purpose of increasing one's own assets or in order to sell to another player for real money. CNET did an article on the trade of real money for virtual commodities back in 2005 and discussed IGE, a major reseller of virtual goods at the time. According to CNET, "One of the largest players among the exchanges is 4-year-old IGE, which facilitates virtual asset trades for games such as "World of Warcraft," "Everquest," "Lineage" and "Final Fantasy XI." IGE President Salyer says his company buys goods from independent "farmers"--players who harvest virtual assets--and then sells the merchandise on his network,"⁷ which blatantly states that IGE is purchasing their gold from the people who harvest gold as quickly as possible to make real money, and in some cases in other countries, their livings. In Asia if a player can, "acquire one power an hour by playing a game and then sell it for a profit to another player, he or she could make a living wage, accounting for exchange rates."⁸ Some individuals in Asia have even formed "sweatshops" for virtual farming, implying that the market for virtual commodities is very prominent in our society. The issue with these "gold farmers", as they are commonly coined, is the unnatural inflation of the game's virtual economy. It is expected that a server of a certain online game with an older player base will have an inflated economy, but when gold farmers are put into the equation, the economy inflates at an unnatural rate. Websites such as wowmine.com distribute the gold that these gold farmers gather, and, "...it seems unlikely that most players realize that the inflation in their games (see below) may be accelerated by RMT [(Real-Money

⁷ http://news.cnet.com/Real-money-in-a-virtual-world/2030-1069_3-5905390.html

⁸ http://news.cnet.com/Real-money-in-a-virtual-world/2030-1069_3-5905390.html

Trade)].”⁹ This inflation gives players that partake in RMT more money on average and can lead to incredibly overpriced items in the auction house. I have become a victim of this cruel inflation when I play any of my characters in the World of Warcraft. Even if I want a lower level item, the price is usually way too high for me to afford because I play on a server with a much older player base than most other servers. One aspect of the Auction House that can potentially suffer the most from an over-inflated economy is the cornering of markets for certain in-game commodities.

The economic concept of cornering a market, or market cornering, is similar to that of a monopoly, but unlike a monopoly, the aim of a cornered market is to gain control over a commodity or set of commodities, i.e. the product, rather than the production of a commodity, which is the aim of a monopoly. Cornering a market is the practice of buying as much of a commodity (as close to all of it) as possible in an attempt to manipulate prices. In the past, there have been a few attempts at cornering a market, most notably Hunt brothers’ attempt to corner the silver market. In 1980, Nelson Bunker Hunt and Herbert Hunt invested in silver as a hedge against inflation, and it is estimated they controlled more than one-third of the world’s silver at one point. Unfortunately, they failed to meet margin calls and lost their fortune in silver. The Hunt brothers’ story exemplifies the difficulty associated with cornering a market in the real economy. This is due to the fact that in the real world there exists a great deal of any regular commodity, and buying all of a single commodity takes a considerable amount of time and capital.¹⁰ One of the existing factors under the surface of market cornering theory is that cornering a market requires a certain amount of haste, for stockpiling a commodity without gaining

⁹ Castronova 15.

¹⁰ “Cornering the Market.” Wikipedia. 2 June 2008 http://en.wikipedia.org/wiki/Cornering_the_market.

a profit in the meantime is more cost than it is worth. For market cornering to be successful, one must begin with significant capital and some security that the commodity can be bought-out. More often than not, one underestimates the economy and the availability of the commodity and thus the market cannot be cornered. This real-world application of market cornering may be improbable, but in the World of Warcraft's virtual economy, market cornering is not so far-fetched.

A cornered market in a virtual economy may seem ridiculous at first, but many players' virtual lives revolve around monopolizing certain aspects of the game's economy. Since the process of leveling up one's profession(s) in the World of Warcraft uses such a plethora of materials, it is no surprise that materials for professions have become a prominent target for monopolization, i.e. market cornering, in the Auction House. After scanning the Auction House of the Silvermoon realm with an add-on called Auctioneer for materials for my Mining profession, it became obvious that nearly all of the types of ore that are used to level Mining were incredibly overpriced due to certain players' cornering of that market.¹¹ There were even certain characters who seemed to be the *only* ones selling a certain type of ore, or any material for that matter, which is just a testament to how monopolized certain commodities have really become. In order to realize the full potential for monopolization further research is needed, such as a survey directed towards players of World of Warcraft.

After scrutinizing numerous forums and online communities dedicated to the World of Warcraft, we decided to post our economic survey on two prominent forums to gather more information about the current state of cornered markets and the economy of the Auction House. Four questions were constructed and posted on both of these forums

¹¹ <http://auctioneeraddon.com/>

as follows:

1. How much gold do you spend in the Auction House per week?
2. How many items do you sell in the Auction House per week? What is the average rarity of these items (Common, Uncommon, Rare, Epic)?
3. How much gold do you obtain from your total sales per week?
4. What do you believe the easiest type of item to sell for a maximum profit is in the Auction House (epic items, materials for professions, crafted items, etc.)?

We compiled the answers into the following table (units/week):

1. Gold Spent	2. Items Sold	3. Profit in Gold	4. Items to Sell for Good Profit
700	25	1700	materials
750	200	1250	materials
20	35	150	netherweave cloth
1000	50	3000	tradeskill designs
200	75	350	materials
2000	50	4000	materials
250	60	100	materials, potions
80	100	350	materials
750	10	20	potions
20	4	45	deviate fish
100	10	100	materials
250	5	600	materials
2500	12	5000	materials
300	100	300	materials
100	12	100	materials
10	12	70	materials
200	20	500	shards from disenchanting
100	30	2500	materials
100	15	450	epic crafted items
10	20	150	materials
10	5	20	materials
30	100	850	materials
500	30	500	materials
15	4	150	shards from disenchanting

100	30	300	primals
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After more than 25 people replied to my survey, the post turned into a big argument/rant about the validity of our survey and the varying results that we would obtain from people on all types of servers (which was kind of expected). We defended our survey by explaining that we are trying to find out what the cornered markets are overall and that, "...although inflation has the potential to influence the degree to which cornered market's prices reach "extreme" numbers on older Realms, said markets exist nonetheless without the maturity of a large, high-level, inflationary player base."¹² Of course, this did nothing to convince our adversaries, but it did allow for us to take a broader viewpoint on the cornered markets that we came up with.

Despite the ranting and arguments present in the replies to our surveys, we did manage to collect valuable data that became the basis for finding the most efficient commodity to monopolize. The average gold spent per week in the Auction House was 417, while the average gold income from selling items was 927. These data imply that the people that are answering our survey are in fact making a significant profit from whatever they are selling (~510 gold/week), which is a good sign of price control on whatever commodity the player is selling. Players who responded to our survey stated that they sell 41 items per week on average, where one stack of items counts as one "item" since it only takes up one listing in the Auction House. The last question of the survey brought all of this information together. More than 70% of the subjects declared that materials for leveling up professions are the most efficient commodity to sell for

¹²

<http://wow.allakhazam.com/forum.html?forum=21;mid=1210626019193415929;page=1;howmany=50#m1210626019193415929>

sheer profit. This does not necessarily mean that on a price per item scale they are the most valuable, it just goes to show that the demand for these materials is high, and if a few smart players can obtain price control for a specific material they can jack the price up significantly without diminishing demand. Other ideas for efficient items to sell for profit were primals (which could be considered materials for professions, but are for much higher levels) and potions. Even those who suggested potions and primals as a means for profit usually mentioned that general trade skill materials are also great means of achieving price control. Judging from the fact that all players who were making significant profits suggested selling materials for professions to gain profit, it can be inferred that said materials are a very if not the most efficient way of making money in the game.

Scalping in a real economy comes in many different forms. Scalping can refer to a trading scheme where an investment advisor manipulates securities in his favor, or scalping can refer to the resale of a ticket or commodity for a higher value once the ticket or commodity has reached its peak value. For our purposes, the latter is most relevant, but the former still has some relevance in virtual economies. Scalping as a scheme in investment securities is a function of relationships and trust. An investment advisor meets with his client and advises his client to invest in a certain security, let's say security A. Security B may be a more beneficial security, but security A costs less at the outset, which is better for the advisor in this scheme. The advisor has already purchased a substantial amount of security A for his account, and the investor now purchases the same security for long-term investment. The advisor now sells security A, which has risen in market price, hopefully higher than security B, and makes a substantial profit.

Because of the securities trading application, this is a complex model of scalping, but scalping can also apply to a more straightforward application.

Take the example of ticket scalping: one buys a ticket to a popular concert ahead of time or in a presale of some sort. The ticket buyer then waits until the day before or day of the show, at which point the ticket has most likely tripled or quadrupled in value, and sells the ticket for a dramatic profit considering the little amount of work that has been done. This model of scalping is similar to the more complex model given above. A person purchases a commodity he believes will rise in value, and when the commodity does rise in value, it is sold for a profit. The major difference between the two models is market manipulation. In the more complex model, the advisor actively manipulates the market in his favor. In the simpler model, market manipulation is achieved by hoarding the commodity as it rises in value.

Throughout the World of Warcraft players must realize the value of certain commodities if they want to take advantage of the thriving virtual economy and hopefully monopolize some items. By obtaining a certain number of items and selling them at a higher-than-normal price—as long as the demand is high enough—is a good recipe for a cornered market where the seller has solid price control. Players who are willing to spend the time can easily partake in this rewarding practice, but awareness of gold farming and inflation should always be taken into account.¹³ Blizzard will always keep an eye out for drastic fluctuations in the economy that they govern over, but it will be hard for them to fully account for all of the real-money trade that occurs in the World of Warcraft.

¹³ Castronova 20.

Economics has many possible applications both in real economies and virtual economies. While there has yet to be much research in the way of virtual economics, the possibilities for research and economic applications are endless. Throughout our research and observation, we found many intriguing and surprising correlations between real economics and virtual economics. Basic economic concepts such as inflation, professions, cornered markets, and scalping are all concepts that are present in both real and virtual economics, though they may manifest themselves differently. The extent to which certain economic principles remain constant through real and virtual economics was our primary concern, with our discussion also focusing on gameplay and how players may better their experience through their understanding of these economic principles. More than this, though, was our interest in broadening our own horizons and seeing World of Warcraft in a different light.

Being players of different skill levels, we were very interested in developing our own viewpoints of World of Warcraft, and through our research and observation we both see World of Warcraft in a different light. Beyond being smarter players, we have a greater understanding for the depth and astonishing realism World of Warcraft brings. While this depth and realism is not manifested through graphics or physics, the gameplay and the minutiae of the world itself is so economically genuine that one can only marvel at the brilliance of the minds that created the world. World of Warcraft is not simply a game to be passed off as such. More than any other virtual reality experience, World of Warcraft manages to recreate some of the most complex systems in our world and transfer them to a virtual world of mysticism, which is a feat in it of itself.

Bibliography

“Allakhazam: World of Warcraft General Discussion Forum.”

<http://wow.allakhazam.com>. Allakhazam’s Magical Realm. 25 May 2008.

<http://wow.allakhazam.com/forum.html?forum=21;mid=1210626019193415929;page=1;howmany=50#m1210626019193415929>.

"Analysis: Buyout Vs. Bid Rate for Auctions." Wowecon. 15 June 2006. Helix Systems Incorporated. 7 May 2008

<http://www.wowecon.com/?l=eJxLtDKyqi62MrdSik9MLsnMz1OyLrYyNLVSSsXzKksziyOTyqtzC8tAQtbWik5AAGGVKKVgVV1bS0Axh0Z6Q%3D%3D>

"Auction House Tips." www.worldofwarcraft.com. Blizzard Entertainment, Inc. 7 May 2008 <http://www.worldofwarcraft.com/info/basics/auctionhousetips.html>.

“Auctioneer addon for World of Warcraft.” <http://auctioneeraddon.com/>. 12 May 2008.
<http://auctioneeraddon.com/>.

Castronova, Edward, "A Cost-Benefit Analysis of Real-Money Trade in the Products of Synthetic Economies." Info, Vol. 8, No. 6, October 2006 Available at SSRN:
<http://ssrn.com/abstract=917124>

Castronova, Edward, "On Virtual Economies" (July 2002). CESifo Working Paper Series No. 752. Available at SSRN: <http://ssrn.com/abstract=338500>

Castronova, Edward, "Real Products in Imaginary Worlds." Harvard Business Review, pp. 20-22, May 2005 Available at SSRN: <http://ssrn.com/abstract=759924>

"Cornering the Market." Wikipedia. 2 June 2008
http://en.wikipedia.org/wiki/Cornering_the_market.

"Inflation." Wikipedia. 2 June 2008 <http://en.wikipedia.org/wiki/Inflation>.

"Item Basics." www.worldofwarcraft.com. Blizzard Entertainment, Inc. 21 May 2008

<http://www.worldofwarcraft.com/info/items/basics.html>.

Knowles, Isaac, Medieval Fantasy, Modern Economy. 12 Dec. 2006. U. of Mary

Washington. 28 May 2008

<http://students.umw.edu/~iknow8gk/WoW%20draft%201.8.doc>.

Lehtiniemi, Tuukka (2008). "Macroeconomic Indicators in a Virtual Economy." Master's

thesis, University of Helsinki, 17 March 2008.

<https://oa.doria.fi/bitstream/handle/10024/37870/macroeco.pdf>

Malone, Krista-Lee M., "Dragon Kill Points: The Economics of Power Gamers" 18

August 2007 <http://ssrn.com/abstract=1008035>

"Real Money in a Virtual World." CNET. Wharton School. 7 May 2008

http://www.news.com/Real-money-in-a-virtual-world/2030-1069_3-5905390.html.

"World of Warcraft." Blizzard Entertainment, Inc., 2004. 10 May 2008.