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Taxation of Virtual World Economies: A Review of the Current Status

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Abstract

The taxation of virtual world economies is uncharted terrain, one that both researchers and government officials are just beginning to scrutinize. Taxes are inevitable in any economy, but what about the increasingly lucrative virtual world economies? The market for virtual goods and services is estimated to be in the millions of dollars, so it is no wonder that governments are beginning to take notice. Experts are divided as to the feasibility of taxation of virtual economies. Most experts agree however that there is significant ambiguity in the current U.S. Internal Revenue Code with respect to virtual worlds. It is unclear if transactions occurring in a virtual world are taxable in the U.S., and the Internal Revenue Service has to date not offered any strong guidance regarding the issue. In this article, we argue that virtual transactions are already subject to taxation under current U.S. law, at any point in time that the U.S. Internal Revenue Service should decide to enforce the current law, whether taking place in game worlds or unscripted worlds. This would include virtual-to-virtual transactions as well as virtual-to-real transactions, as the issue at hand is whether or not virtual activity is taxable, regardless of realization, because all goods and services have a fair market value.

1. Methodology

This review examines the issue using a multidisciplinary perspective, from both Internet studies and taxation research. To research relevant literature already published regarding the taxation of virtual world economies, the authors used a number of electronic databases. Because of the multidisciplinary nature of the topic (Internet studies and taxation), four diverse electronic databases were selected: Academic Search Premier, Communication and Mass Media Complete, Business Source Premier, and LexisNexus Academic. A thorough search on the topic revealed published literature ranging from complex law journal articles (the details of which, such as specific cases relating to Internet tax law, are beyond the scope of this article), to articles in socio-cultural journals (such as this publication, *Journal of Virtual Worlds Research*), to government documents, and to the popular press. However, even though a small body of research exists, there is scant discussion of the topic in academe.

This article synthesizes the published literature, coming as it does from a variety of sources and perspectives, to review the existing knowledge and provide a broad overview of the topic. The authors first present a critical analysis of the current state of virtual economies. Next, a thorough examination of existing legal opinions regarding the taxation of income and assets generated by virtual world transactions is discussed. The authors then offer their own analysis of the topic specific to the tax laws of the United States. Lastly, a discussion of the complexity of the topic is presented.

2. Taxation of Virtual World Economies

The taxation of virtual world economies is uncharted terrain, one that both researchers and government officials are just beginning to scrutinize. As the old saying goes, taxes are inevitable in the “real world,” but what about the increasingly lucrative virtual world economies? With a first-quarter 2010 market for virtual goods and services of \$160 million USD in *Second Life* alone, it is no wonder that governments are beginning to take notice. It is critical for scholars to be aware of this emerging issue, because the way people communicate and interact in virtual worlds could be seriously impacted if there is the possibility they may be taxed. Virtual worlds may even cease to exist if forced to comply with burdensome tax laws.

The growth of virtual worlds has exploded. As these virtual worlds have grown and become increasingly more sophisticated, to the extent they now mirror the offline world, a whole new “virtual economy” has emerged, blurring the line between the real and virtual. Participants in and members of gaming and social networking sites such as Facebook, EverQuest, World of Warcraft, and *Second Life* are now buying and selling virtual goods and services offline (not in-world) in exchange for real currency, a practice referred to as “real money trading” or RMT (Nardi & Kow, 2010). Because of RMT, virtual transactions have real economic value (Camp, 2007).

An unknown number of people in virtual worlds are exchanging real currency and earning a living delivering virtual goods and services, making it possible to “work in a fantasy world to pay rent in reality” (Lastowka & Hunter, 2004, p. 11). The total value of sales of virtual goods and services in the US alone is estimated at \$2.2 billion USD, up 38% from 2010 (Milani, 2012). The estimated gross domestic product (GDP) of all virtual worlds is between \$7 and \$12 billion USD. One study on the virtual currency in EverQuest found that the virtual gross national product (GNP) of the world of Norrath was \$135 million USD, placing it (at the time) at 77th on the list of world economies, approximately equal to the GNP of Russia (Castronova, 2004).

With virtual worlds rivaling the GNP of other countries, it is no wonder that governments are beginning to take notice of virtual economies and RMT. The estimated annual market for virtual goods and services is expected to grow to \$6 billion USD by 2013 (Worthen, 2010). The question, then, is whether the trade in virtual goods and services is taxable, because it has real-world monetary value. As Lastowka states, “the hotly debated issue concerning the taxation of virtual property interests is another instance of the state keeping an eye on property interests in virtual worlds” (2010, p. 141).

The Joint Economic Committee of the U.S. Congress (JEC), the Australian Tax Office, the United Kingdom’s HM Revenue and Customs Office, the European Commission Taxation and Customs Union, the Ministry of Commerce of the People’s Republic of China, and Swedish and South Korean tax authorities are all investigating the possibility of taxing income and assets from virtual economies (Hwang, 2011; Mennecke, Terando, Janvrin, & Dilla, 2007; Nuttall, 2007; Tennant, 2010). China already taxes certain categories of RMTs (Salomon and Soudoplatoff, 2010). Since 2007 Linden Labs (the owners of Second Life) has been collecting a Value-Added Tax (VAT) on all European Union users of Second Life who pay Linden Labs for anything, including registering for premium accounts and purchasing from the land store (Hwang, 2011).

Technological advances have far outpaced current tax laws in the United States. As famed economist Milton Friedman predicted in 2000, “cyberspace is going to make it...much more difficult for government to collect taxes” (in Schlingens, 2010, p. 882). The JEC announced it would undertake a study of tax issues in virtual worlds in 2006, but no study was ever delivered (JEC, 2006). The National Taxpayer Advocate’s annual report to Congress in 2008 included a section titled “The IRS Should Proactively Address Emerging Issues Such as Those Arising from ‘Virtual Worlds’” (Nellen, 2012) on the need for established guidelines on issues related to taxation in virtual worlds (Olson, 2008), but no guidance was ever issued. As then-senior economist for the JEC Dan Miller stated, “It will get to the point where the dollar value becomes so sizeable that the IRS would be almost negligent if it didn’t at least look into the potential of taxing these worlds” (Thompson, 2006). Or, as Castrovana puts it, “governments will probably notice...tax revenue, the state’s very lifeblood, will drain away as more economic activity occurs in the ephemeral jurisdictions of cyberspace” (2005, p. 244). Recently, the U.S. Internal Revenue Service (IRS) has suggested that special regulations may be needed to address the issue of taxation in virtual worlds (Lastowka, 2010).

Many of the complex legal arguments in the literature regarding the taxation of virtual world economies were published just after the release of the JEC and IRS memos, and following the National Taxpayer Advocate’s annual report to Congress (as discussed above), in 2006 and 2008 respectively. Since then, very few thorough examinations of the topic from a tax law perspective have been published. And since the subject is so complex, it appears governments, including the United States, are reluctant to approach the subject. Yet according to a 2013 report issued by the United States Government Accountability Office, the “IRS is responsible for ensuring taxpayer compliance for all economic areas, including virtual economies and currencies” (USGAO, 2013, p. 9). The report concludes that “to mitigate the risk of noncompliance from virtual currencies, the Commissioner of Internal Revenue should find relatively low-cost ways to provide information to taxpayers, such as the web statement IRS developed on virtual economies, on the basic tax reporting requirements for transactions using virtual currencies developed and used outside virtual economies” (p. 17). In other words, the IRS needs to find a way to communicate to taxpayers that virtual world transactions are taxable and how to calculate the amount owed to the government.

Researchers and scholars are also beginning to examine the issue of taxation of virtual worlds. At a recent State of Play symposium (held in December 2009 at New York University Law School) entire

panels were devoted issues pertaining to virtual worlds, including their economy, legal systems, governmental systems, and policy. Emory University hosted a conference on Virtual Worlds and New Realities in Commerce, Politics, and Society early in 2008 where participants discussed emerging economies of virtual worlds. In early 2011 the University of California Irvine School of Law hosted a conference titled “Governing the Magic Circle: Regulation of Virtual Worlds.” These are just a few examples of the burgeoning number of conferences held worldwide that address issues related to virtual worlds.

3. Current State of Virtual Economies

The JEC defines virtual economies as “the universe of transactions that occur within an online community, such as Second Life or World of Warcraft...(that) include the sale of goods and services and take place entirely within virtual economies; there is no real-world or physical exchange” (JEC, 2006). In Second Life alone there were user-to-user transactions totaling over \$160 million USD (one USD equals approximately 250 “Linden” dollars, the in-world Second Life currency, which is a floating currency) in the first quarter of 2010, a 75 percent increase over the previous quarter (Oyedele, 2011). One study found that more than 50 businesses in Second Life made more than \$100,000 USD each in 2009, with the top 25 Second Life earners making approximately \$12 million combined.

Another virtual world, Entropia Universe, also operates a “real cash economy” (Entropia Universe, 2011) with a fixed rate of 10 “Project Entropia Dollar” (PED) to one USD (Sivan, 2009). Facebook recently launched Facebook Credits, a virtual currency used to buy virtual goods on the Facebook platform (Facebook, 2011). Facebook users can purchase Facebook Credits with 15 different real-world currencies, including Euros, Hong Kong Dollars, Turkish Lira, and Venezuelan Bolivars. However, Facebook takes a significant cut (30%) with each Credit purchase (Gannes, 2011). The US-based chain store Target is even offering Facebook Credit gift cards for people to purchase to use on the Facebook platform, marking the first time Facebook has had a presence in a brick-and-mortar retail store (Swartz, 2010). Amazon.com recently announced Amazon Coins, worth one cent USD, that can be used to buy apps and games for the Kindle Fire (Sparshott, 2013).

RMT is a big business, particularly in the sale of in-world currency and high-powered user accounts (Duranske, 2008). Yet not all virtual worlds permit RMT. Second Life allows the exchange of currency, goods, services, and equipment. Second Life even has an internal system where users can exchange Linden dollars for real currency. However, the MMOGs (Massively Multiplayer Online Games) World of Warcraft, EverQuest, and Ultima Online specifically forbid the buying and selling of “gold” (their in-world currency) or items for real money (Duranske, 2008); such activity is against the terms of service or end-use licensing agreements. eBay banned auctions for property from virtual worlds such as characters, currency, weapons, and clothing in early 2007.

There is ample evidence, however, that people are making a living buying and selling virtual goods. Or, as one IRS agent stated, “selling intangibles in an intangible world. *For* an intangible world.” (Dibble, 2006, p. 304). There are a number of occupations that members of Second Life make their livings from in-world, including jewelry maker, tour guide, musician, landscaper, nightclub owner, and attorney (Duranske, 2008). There are also third-party auction sites that broker in-world currency, virtual items and even entire in-world accounts. One person claims to have achieved a net worth exceeding \$1 million USD from profits earned in virtual worlds, primarily through real estate transactions and content creation in Second Life (Duranske, 2008).

On a more sinister note, unsavory types may also be using virtual world transactions to launder money because the transactions are virtually untraceable and can be converted into real currency (Stokes, 2012). One rumor concerns a drug dealer in Second Life who only accepts Linden dollars as payment and then realizes a profit after converting the Linden dollars to USD (Burns, 2010). Other criminal activity occurring in virtual worlds includes identity theft, hacking, and credit card fraud (Chung, 2009). A study by Dilla, Harrison, Mennecke, and Janvrin (2013) details 20 cases of virtual world fraud, where virtual world participants were exposed to real asset loss from fraud. Gold farming, where companies (usually in low wage economies) employ people to do nothing but play MMOGs in deplorable conditions to acquire in-world currency or property which is then resold for a profit, is also driving RMT (Kennedy, 2009).

Julian Dibbell famously wrote about his attempt to make a living selling “make-believe commodities” in his book “Play Money, or How I Quit My Day Job and Made Millions Trading Virtual Loot”; in one year he made \$11,000 USD (Dibbell, 2006). But he was stymied when he called the IRS about the status of his online assets. After putting him on “hold” for 15 minutes, they were ultimately unable to provide him with any guidance as how to report the income (Thompson, 2006). According to the Taxpayer Advocate, the IRS is still “unable to respond to taxpayer inquiries about how to report transactions” in virtual worlds (Benson, 2009, p. 817).

4. Taxation of Virtual Worlds

The IRS does not have a policy that specifically addresses taxation of income earned within virtual world economies; the growth of those economies has clearly outpaced current tax law. As Nellen (2012, Article 2) states, “the Internet has created some new types of assets that may not fall squarely within existing tax rules.” While it is possible that some people do report the amount earned in RMT it is more likely that virtual worlds are a tax haven for those who make their living buying and selling virtual goods and services. A virtual good or service can be marketed, distributed, paid for, and delivered electronically without the need for any face-to-face contact (Schlimgen, 2010). While most tax scholars believe it is a matter of “when” and not “if,” researchers differ in defining exactly how the IRS would implement and enforce a law designed to tax transactions that occur in virtual worlds (Beekman, 2010). The academic discussion surrounding the taxation of virtual worlds revolves around three ways to approach the topic: taxing real-money transactions, identifying the difference between game worlds and scripted worlds, and the responsibilities of the virtual world operators.

4.1 Taxing RMTs

Mennecke, Terando, Janvrin and Dilla (2007) argue for a system that only taxes income generated when the seller converts virtual profits into real-world currency. In order to ensure that virtual economies continue to thrive, even though they would be taxed, they recommend the IRS maintain a “hands-off” policy but clearly communicate the guidelines and require the companies that maintain virtual worlds (for example, Linden Labs owns Second Life; World of Warcraft is owned by Blizzard Entertainment) convey to buyers and sellers information regarding both the law and the consequences of breaking it. In a follow-up article, the authors concluded that “...virtual asset exchanges constitute income realization events for (Federal income tax) purposes because they involve arms-length exchanges of virtual properties that possess distinct legal and economic entitlements that are capable of being objectively valued” (Terrando, Mennecke, Dilla & Janvrin, 2008, p. 99).

Chung (2008) suggests since virtual currencies act in many ways like “real money” and are increasingly used in the real world, they “represent cash equivalents and should be treated and taxed like

foreign currency” (p. 140) at the time the currency is converted (cashed out) and an economic gain is achieved. He uses the example of the “QQ coin,” a virtual currency created by the Chinese company Tencent that allow users to shop in the company’s virtual world and instant messaging service. (The use of credit cards is not yet commonplace in China.) The use of QQ coins quickly grew beyond the Tencent services, with shoppers using them to purchase real-world goods and services. QQ coins are so popular that the Chinese government is pressuring Tencent to limit the trade of QQ coins because of the potential for money laundering and the inflation of the real Chinese currency, the Yuan (Chung, 2008, p. 144-5), and is “on the lookout for any assault by such virtual currencies on the real economic and financial order” (in Castronova, 2010, p. 4).

4.2 Game Worlds vs. Unscripted Worlds

Lederman (2007, 2009) believes that not all virtual worlds should be treated equally when it comes to RMT. She makes a distinction between “game worlds” such as World of Warcraft and “unscripted worlds” such as Second Life, arguing that transactions in game worlds should not be taxed until the seller engages in RMT but that in unscripted virtual worlds, in-world sale of virtual goods and services using virtual currency be taxed even if the transaction stays in-world and the seller does not “cash out” (engage in RMT). Her rationale for distinguishing between different virtual worlds is that “game worlds typically focus on conquering challenges, not on commerce” whereas an unscripted world such as Second Life “encourages its participants to make creations and sell copies of them and facilitates those activities” (2007, p. 1670-1671).

Seto (2008) also distinguishes between two different types of virtual worlds: platforms with non-redeemable, non-convertible currencies such as World of Warcraft, and platforms with redeemable or convertible currencies such as Second Life. He argues that virtual world transactions in the first type of platform should not be taxed; however, if RMT occurs (even though it is against the terms of service), that transaction generates taxable income. In the second type of platform, Seto believes all transactions should be taxed; RMTs trigger a change in net worth and are therefore taxable.

Cohn (2013) categorizes virtual worlds as “closed-flow” or “open-flow.” In a closed-flow system, transactions hold no value outside of the virtual world. The virtual currency can only be used to purchase goods or services within the virtual world; the income derived is not taxable. In an open-flow system, however, receiving virtual currency (such as Linden dollars) as payment for real goods or services may produce taxable income since the transaction could be exchanged for government-issued currency (USD, GBP, etc.).

4.3 Virtual World Operators

Castronova (2004) puts the burden on the operator of the virtual world platform. He argues that if a virtual world operator allows virtual transactions to occur, the terms of service should reflect that the platform is intended for economic exchange and the transactions will be taxed. If the virtual world operator does not want transactions to be taxable, the terms of service must forbid RMT and the rule strictly enforced.

Mack (2008) puts the entire burden of tax collection on the operator of the virtual world platform. He argues for a “sales-and-use” tax. In this scenario, a system would be in place within the virtual world to automatically deduct a percentage of each transaction. The operator of the virtual world platform would then hold that deduction and forward it on for governmental collection.

5. Existing U.S. Tax Laws

Chodorow (2008) approaches the issue of taxation of virtual income within the context of the existing U.S. tax laws. The “ability to pay” is a core tax concept. Under that standard he argues that the taxation of virtual income should be based on a taxpayer’s ability to cash out; if a virtual world allows participants to cash out then that income should be taxed. Likewise, virtual income earned in worlds that prohibit cashing out should not be taxed; the ability to pay real-world taxes is not a function of virtual income. Chodorow maintains that once it has been established that the virtual income has value and the participants can cash out, “the virtual nature of the income does not warrant tax treatment different from that which would apply to real-world transactions” (p. 698). In a subsequent article, Chodorow concludes that “the nature of virtual worlds warrants a hybrid approach, where the basis in individual virtual goods is separately tracked, but the basis in fungible currency is pooled and averaged” (2010, p. 283).

Camp (2007) says that while virtual economies have not considered current tax laws, there are some existing laws that do apply. For example, Section 61 of the U.S. Internal Revenue Code (IRC) clearly states that all income from whatever source derived, including the Internet, is taxable. He argues that activities and/or transactions solely in-world (which he calls “units of play”) should not be taxed unless those units are converted into cash. When people whose in-world assets become more like a medium of exchange producing income and less like units of play, those transactions should be taxed. He also warns that the IRS could more easily make the case for taxing the income of people in virtual worlds who have more control over their virtual assets (versus the company that maintains the virtual world owning the virtual assets).

Beekman argues that there is “no good conceptual justification for treating virtual world activity differently from real world activity for tax purposes” (2010, p. 154). However, she also contends that it would be impossible for the IRS to administrate and enforce taxation in a virtual world. For one thing, the agency would have to rely on self-reporting by the taxpayer, which is problematic. Another issue is the huge administrative burden that would be placed on the IRS. While the administrative concerns should not be the deciding factor in the debate on taxation in virtual worlds, the IRS regularly makes “decisions based on administrability alone, even when the result is conceptually incorrect” (p. 173).

Experts are divided as to the feasibility of taxation of virtual economies. The academic debate centers on whether “laws” in a virtual world should be distinct from real-world laws, or that real-world laws should also be applicable in virtual worlds (Chambers, 2012). The positions reviewed above range from exempting all in-world activity from taxation, to taxing in-world activity under certain conditions such as RMTs, to taxing all in-world transactions. Revamping the U.S. Internal Revenue Code (IRC) to specifically cite virtual worlds is another option. Most experts agree however that there is significant ambiguity in the current U.S. IRC with respect to virtual worlds (Beekman, 2010; Schlingens, 2010).

In this article, we argue that virtual transactions are already subject to taxation under current U.S. law, at any point in time that the IRS should decide to enforce the current law, whether taking place in game worlds or unscripted worlds. This would include virtual-to-virtual transactions as well as virtual-to-real transactions, as the issue at hand is whether or not virtual activity is taxable, regardless of realization, because all goods and services have a fair market value.

Online gambling income is already taxable under current U.S. law (even though the legality of online gambling is not exactly clear; see Rosenberg, 2009 for a discussion). In the previously mentioned Section 61 of the U.S. IRC, all income earned by U.S. citizens is taxable, which includes online gambling (*McClanahan v. United States*, 1961). The same law should also apply to economic activity in

virtual worlds because of the key phrase in Section 61, “all income *from whatever source derived*” (emphasis added).

Therefore, there is no need for new legislation amending the current U.S. IRC in order for the IRS to begin enforcement, given the strategic approach employed in the current U.S. IRC. This is because the strategic approach within the U.S. IRC is that taxation of income is an “all inclusive net” unless that type of income is specifically exempted. Specifically, income is “any undeniable accession to wealth, which is clearly realized by the taxpayer, over which the taxpayer has complete dominion” (Commissioner v. Glenshaw Glass, 1955). This strategy eliminates the difficulty inherent in trying to identify all methods of commerce capable of generating income, tangible or intangible, now or in the future.

To escape taxation under the U.S. IRC, virtual transactions and economies would need to be identified, defined, and specifically exempted from taxation by the U.S. Congress or the courts; something that has yet to happen and is unlikely to occur. Virtual transactions, obscure offshore tax shelters, exotic financial derivative instruments, and the like are examples of creative methods to generate income that will be caught eventually in the “all inclusive net.” However, the difficulty in taxing virtual transactions lies in the fact that it is impossible for the IRS to track them; they would have to rely on self-reporting, and the majority of taxpayers are not aware that those transactions may be taxable. Because of this, the likelihood that the IRS will tax virtual world transactions in the near future is minimal at best.

If the IRS chose to enforce current U.S. tax laws, the revenue from virtual worlds would be tremendous. However, overregulation of tax laws might also “result in the immediate decline of the virtual economy, lowering its total economic value, and therefore lowering the total federal revenue expected for the regulations” (Mack, 2008, p. 761). Virtual worlds may also move to a peer-to-peer network or a country outside of the U.S. to avoid detection and identification by the government. Another, more likely, scenario would be that the tremendous growth of virtual worlds would be severely impeded, depriving scholars of a rich and vast “database” for studying how people communicate and interact in such an environment.

6. Conclusion

Researchers are divided as to the feasibility of taxation of virtual economies. Some tax experts say that it would be easy to argue in-game profits have real-world value even within the confines of the virtual world. Additionally, virtual world trades of virtual goods and services, as well as RMT, could also qualify as barter, which is already taxable.

Others believe the logistics of taxing virtual economies would be too complex, and systems would need to be set up to provide an annual valuation for a resident’s assets in a virtual world. Still other experts believe governments would not tax a “game.” Complicating that argument, however, is the fact that members of Second Life insist their virtual activity is not a game (Thompson, 2006). However, if Second Life is not a game and therefore not entertainment, then one could make the argument that the virtual world is used to conduct business, particularly when they participate in RMT markets.

Studies have found that virtual economic behavior follows real-world patterns (Castronova, Williams, Shen, Rata, Xiong, Huang, & Keegan, 2009), just as real-world behaviors are often incorporated into virtual world activities (Harrison, Mennecke, & Dilla, 2013). The amount of economic activity occurring in virtual worlds, and the huge revenues being generated, “are sure to make a real impact on real-world economies” (Huffaker, Simmons, Bakshy, & Adamic, 2010). In an era where many

of those real-world economies are struggling financially, imposing a tax on virtual worlds may be an opportunity for governments to expand their tax base (Schlimgen, 2010). Conversely, the virtual worlds provide people the opportunity to evade real-world taxation with relative ease. As Pienaar and Steyn (2010) state, “even though taxpayers might think it unreasonable to tax virtual income, the possible consequences of not doing so will grow and drive tax evasion” (p. 65). While virtual worlds may present a tremendous opportunity to make a profit for tax authorities, the “new paradigm offered by virtual worlds may offset the profit potential with unknown and possibly untenable risk” (Hwang, 2011, p. 179). Real world penalties may cause the advantages of buying and selling in a virtual world to erode (Hoops, 2011). As Chambers (2011) states, regulation of “taxable assets and income...would have a benefit for the real world and causes disadvantage to the virtual world” (p. 384).

Real-world corporations as diverse as Nike, Time Warner, Sony, Mercedes Benz, Reuters and Sears initially created a presence in Second Life, but the majority of them have pulled out because consumers did not connect with the brands in a virtual world setting (Barnes, 2010); virtual worlds were created for recreational purposes, not business applications (Bateman, Pike, Berente, & Hansen, 2012). However, as more and more people join virtual worlds and individuals (as opposed to multinational corporations) create locations to sell their wares, the issue of taxing income and capital gains in virtual economies will only become more critical. When people begin to use Linden dollars to purchase goods or services from real-world, brick-and-mortar entities, the issue of taxation will become extremely complicated and paramount in terms of current tax laws. Jones (2009) believes that the IRS will begin to take more notice of virtual world transactions if and when one of three events occurs: courts granting property rights to virtual world participants in the virtual items they amass; vendors begin accepting virtual items on a regular basis in exchange for real good and services; or Congress adopts legislation requiring owners of virtual worlds to report certain transactions to the IRS.

Taxation of virtual world economies is an incredibly complicated topic, one that varies according to the tax code of individual countries. Scholars have presented differing opinions on the subject, and governments have provided little to no guidance as to the taxation of virtual worlds. In this article, the authors have synthesized the existing literature and presented a variety of arguments both for and against the taxation of virtual world economies, as well as arguments for the revision of the U.S. IRC with respect to virtual world transactions. The authors have offered their own opinion on the subject: income from virtual worlds is indeed taxable under current U.S. law; thus, there is no need to revise the law, or to disregard the law completely when it comes to the taxation of virtual world economies.

The 2013 report issued by the United States Government Accountability Office called for the IRS to address the tax compliance risks of virtual transactions and provide guidance to taxpayers on the tax consequences of virtual world transactions (USGAO, 2013). Virtual world economies are only going to grow larger, as well as the amount of money involved in those transactions. Additionally, the introduction of digital currencies such as Bitcoin (which is not backed by any government and exists only virtually) will further complicate the issue. Additional research is needed to determine the impact of digital currencies on virtual world transactions; issues of money laundering and the more unsavory aspects of real money trading such as fraud, identity theft, and gold farming also need to be examined in more detail by scholars. In practice, governments must begin to clarify their stance on taxation of virtual world transactions.

Given the disagreement among scholars and experts, and the unclear status of virtual worlds with respect to the U.S. IRC, this review has provided insight into the difficulties of resolving the conflict as well as the potential impacts upon virtual world economies. The authors suggest that scholars and government entities (such as the IRS) alike attempt to present definitive guidelines regarding the

taxation of virtual world economies based on existing laws, and enforce those laws. In doing such, the vitality and vibrancy of virtual world economies should also be preserved and protected, as virtual worlds are increasingly integral to how society functions. It is, however, a daunting task.

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