

Cover Page



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Summary

Money is a social institution that has exhibited a great capacity to evolve and adapt to the character of the era. In the past, commodities were used as means of payment. Later on, they were gradually replaced by coins and paper money. The Information Age has created a new concept of money: virtual currencies existing solely in the cyberspace in the form of intangible computer code. Virtual money can be defined as a type of unregulated digital currency that is issued and often also controlled by its developers. Two main categories of virtual money can be distinguished: community-related currencies (used by members of a specific virtual community) and universal currencies (used by anyone to purchase goods and services).

Initially, virtual currencies were used as a medium of exchange between avatars within virtual worlds. Virtual worlds are persistent computer-generated online environments that can be accessed remotely and simultaneously by a large number of people who interact with one another. The majority of these environments operate under some type of economy with in-world property and currency systems. The heart of the virtual economy is trade: to improve their virtual status, participants must acquire virtual items and money. Although trade in virtual items began within the online environments, it soon expanded beyond their boundaries. Virtual items started being exchanged on Internet platforms for real money, and the game ceased to be merely a game. Many people quickly noticed that they could make real profits by “farming” and selling virtual items and currencies.

Universal currencies exist independently of any virtual environment and compete with traditional currencies. Bitcoin, a totally decentralized cryptocurrency without a central authority, grabbed the public attention as its value skyrocketed at the beginning of 2012. Its supporters claim that Bitcoin has many properties that could make it an ideal currency for mainstream consumers and merchants: it is highly liquid, has low transaction costs, can be used to make micropayments and allows its users to preserve anonymity in transactions.

A study from the European Central Bank suggests that the use of virtual currencies is expected to grow in the future. Therefore, it is important that our economic, political and legal institutions are prepared to deal with those currencies and to incorporate them into the existing legal framework. Modern technology provides opportunities for income generation that were unknown back in the days in which tax laws were developed. Trade in virtual currencies

carried out in borderless and anonymous setting challenges the current tax law to its extremities.

The purpose of this thesis is to examine tax implications that result from transactions in virtual currencies and items (such transactions are referred to here as "virtual trade" or "virtual transactions"). The thesis investigates three core research questions:

- 1) How income from virtual trade and transactions involving virtual currencies and items should be taxed (the model scenario)?
- 2) How income from virtual trade and transactions involving virtual currencies and items are actually taxed under the existing tax legislation (the actual scenario)?
- 3) How the actual scenario can be aligned with the model scenario?

The thesis is divided into three main parts. Chapters 1, 2 and 3 serve as an introduction and provide the definitions of virtual currency and virtual worlds. Chapters 4, 5 and 6 examine income tax aspects of virtual trade, whereas chapters 7, 8 and 9 are concerned with indirect tax issues of transactions in virtual currencies.

Before investigating tax implications of virtual currency, it is necessary to determine its nature, i.e. whether virtual currency can be regarded as money in the economic or legal sense (*see* Chapter 3). Money in the economic sense exhibits three important characteristics: it acts as a unit of account, medium of exchange and store of value. The legal definition of money contains additional elements, such as legal tender status, central management and availability of a physical carrier. Although virtual currencies are designed to perform the same functions as legal currencies, they cannot be subject to the same rules as EUR or USD due to their different characteristics. Community-related currencies cannot be even regarded as money in the economic sense as they do not fulfill the monetary function of storing value and serving as a unit of account. A decentralized currency scheme, such as Bitcoin, could be regarded as money in the economic sense if concerns regarding its safety and reliability are removed and it obtains "intuitive" value. However, irrespective of that, Bitcoin does not meet the definition of money in the legal sense.

Chapter 4 identifies activities that may be relevant for income tax purposes. These are: creation of virtual currency (through mining or completion of quests), possession of virtual currency that appreciated in value and exchanges. Exchanges may give rise to two types of income: real income (when virtual currencies and items are sold for real money, i.e. money in the legal sense) and virtual income (when goods and services are exchanged for virtual money).

Chapter 4 also describes a model system for taxing income from virtual trade. This description consists of two steps. The first step involves finding a universal income definition; a definition independent from any country specific characteristics and limitations. This definition turns out to be the Schanz-Haig-Simons model, according to which all increases in wealth (both

in the real and virtual form) and consumption should be taxable. The second step takes this most comprehensive income concept and narrows it down to achieve a workable income definition that takes into account the requirement that taxes be something that can be reliably measured, reported and paid. It considers what limitations can be imposed on the comprehensive income definition by the generally recognized principles of taxation (equity, efficiency, effectiveness and neutrality). The examination shows that there is a strong case against taxing income in the virtual form. The illiquidity, valuation and compliance difficulties, combined with the resentment of taxpayers, would threaten a tax system based on self-assessment. In contrast, any real income derived from trade in virtual currencies and items should be subject to tax. This approach is in line with the principle of equity (increased ability to pay is taxed), administrative convenience (taxation is deferred until the taxpayer has the means to pay the tax) and neutrality (taxpayers are not “forced” to monetize their assets).

Chapter 5 examines whether income from virtual transactions is actually subject to tax in four countries: the United States, the United Kingdom, Germany and the Netherlands. Those countries were selected on the basis of their different approaches to income taxation (global versus schedular) and the different treatment of capital gains and accumulated wealth.

The United States imposes tax on all income from whatever source derived and, thus, real income from virtual transactions is always taxable there (irrespective of whether profit motive or market participation exists). With respect to profits existing only in the virtual form, it is necessary to distinguish between community-related and universal currencies. The taxpayer does not have a complete dominion over community-related currencies since he has expressly agreed to contractual terms according to which the world operator may modify and terminate the virtual environment at its sole discretion. In contrast, the possession of universal currency (Bitcoin) is free from such restrictions. Thus, the receipt of universal virtual currency gives rise to taxable income, irrespective whether the currency was generated or obtained in an exchange transaction.

In the other three European countries, there is no all-encompassing provision that would tax income from whatever source derived. Tax is levied on explicitly enumerated categories. In the United Kingdom, virtual exchanges may result in trading income, miscellaneous income or capital gains, whereas generated and accumulated virtual currency is not taxable as it involves neither source nor disposal. In Germany, income from virtual trade may fall within either business or miscellaneous income category, depending on whether it is generated in a business or private capacity. Self-generated virtual currency is not taxable as it is not derived from transactions with other market participants. In the Netherlands, profits from virtual trade may fall within either business or other income category. However, in the Netherlands, income tax is also levied on the net value of assets, irrespective of whether those assets

are able to generate any income. Accumulated virtual currency may be regarded as a qualifying asset since it has economic value. Thus, not only profits from virtual exchanges but also accumulated virtual currency is subject to tax. In all three European countries, it does not matter whether income exists in a real or virtual form. Virtual income is subject to the rules on barter transactions and benefits in kind.

Chapter 6 points out that the actual scenario deviates from the model one since income in the virtual form is taxable in all the countries under consideration. However, the fact that income is taxable does not mean that it is *actually* taxed. People who have virtual income either are not aware that it is taxable or deliberately avoid paying tax knowing that this non-compliance is unlikely to be detected and punished. Ignored and unenforced tax law is useless. It neither generates revenue nor serves any redistributive purpose, so that its existence cannot be justified by any of the taxation objectives. To align the actual scenario with the model one, this thesis proposes to exempt any income in the virtual form from taxation and implement reporting requirements together with taxpayer information services to improve compliance with regard to real income from virtual transactions. Tax authorities should issue guidelines on income characterization, allowable deductions, income calculation methods and records to be kept. As even the most comprehensive guidance will not solve all the problems, taxpayers should also have the possibility to request advice on their individual circumstances, and such requests should be handled in a timely and customer-friendly manner. Compliance requirements should be imposed on operators providing exchange services since such businesses are smaller in number, have known locations and incentives to comply with the law. A combination of a rule-based and risk-based approach should be used for customer due diligence and filing obligations. The existing regulations for online casinos could be used as a starting point for the regulation of virtual currency exchanges.

Chapter 7 identifies the characteristics of a model system for taxing transactions in virtual currency on the basis of the general principles of taxation: neutrality, equity, certainty and administrative feasibility. Those characteristics are: a clearly defined personal scope, taxation of all private expenditure, taxation at destination, single tax rate and effective mechanisms to ensure that all suppliers comply with their tax obligations.

The EU VAT meets certain criteria of the model tax system: it covers all consumption and employs the destination principle. Its weak points are: lack of certainty with regard to the status of taxable person, high compliance burden resulting from the application of the destination principle and ineffectiveness of the One Stop Shop scheme. However, those problems could be remedied by implementing taxpayer-friendly binding rulings, the possibility to switch to the origin principle as a method of last resort and more extensive administrative cooperation in tax matters.

The US retail sales tax systems lack almost all of the characteristics of the model tax system. They are plagued by a number of problems, the most important of which are: a *de facto* exemption for interstate trade, prevailing non-taxation of digital goods and different sourcing rules among the states. Taxing trade in digital goods would not be a good idea if adopted in the current system. Under this scenario, states would presumably extend their existing sales taxes to digital goods with all the inequalities and distortions that the sales tax system entails. Thus, there seems to be no good alternative to a reform of the existing system. As a radical departure from present practice (the introduction of VAT) is not likely to occur, it is necessary to rationalize the existing system without abandoning it completely. The most common sense approach would be to achieve uniformity in the basic legal framework by enacting federal legislation. By introducing uniform definitions and sourcing rules and amending (or abolishing) the nexus standard, it is possible to create a level playing field for trade in digital goods.

