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Administrative Concessions and the Efficient Taxation of Digital Tokens in Singapore

Vincent Ooi[*]

Tax authorities around the world have stepped-up enforcement activities on the taxation of digital tokens and begun providing more guidance to taxpayers. However, the relative novelty of the field means that there is likely to be considerable uncertainty as to the correct tax treatment, both on the part of taxpayers and tax authorities. This requires both parties to seek tax and legal advice that is often duplicative (in the sense that similar issues tend to keep coming up for different taxpayers) and bear the risk of taking an incorrect legal position. In some cases, the strict tax position under the law might be complex and costly to apply, even though the revenue-raising potential might be limited. To insist on applying the strict tax position might thus result in disproportionate administrative costs, relative to the amount of revenue actually collected. This article suggests that tax authorities should consider the overall efficiency of revenue collection when releasing guidance for taxpayers, rather than blindly chase down every last tax dollar. The article uses Singapore as a case study, analysing how the e-Tax guides published by the Singapore tax authority manage to simplify complex legal concepts into an easily-accessible form for taxpayers. In some cases, the Singapore tax authority has adopted positions that are more generous to the taxpayer than under the strict legal position, which has potentially saved all parties from disproportionate compliance costs. The article suggests a few other areas in which more guidance might be provided by the tax authorities. Finally, the article notes that the guidance need not be static and can be adjusted as technology develops and commercial realities shift.

Les autorités fiscales du monde entier ont intensifié leurs démarches visant le renforcement de l'application de la loi en ce qui concerne l'imposition des jetons numériques et ont commencé à offrir davantage d'orientations aux contribuables. Toutefois, étant donné que le domaine est relativement nouveau, une incertitude considérable est susceptible d'exister quant au traitement fiscal adéquat, tant de la part des contribuables que des autorités fiscales. Il s'ensuit que les deux parties

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doivent demander des conseils fiscaux et juridiques qui, souvent, se dédoublent (c'est-à-dire que des questions semblables tendent à se présenter pour différents contribuables), et doivent assumer le risque d'adopter une position incorrecte sur le plan juridique. Dans certains cas, la position fiscale stricte en vertu de la loi pourrait être complexe et coûteuse d'application, alors que la possibilité d'en tirer des recettes serait limitée. Insister sur l'application de la position fiscale stricte pourrait ainsi entraîner des coûts administratifs disproportionnés par rapport au montant des recettes réellement perçues. Le présent article suggère que les autorités fiscales devraient considérer l'efficience globale de la perception des recettes lorsqu'elles publient des orientations pour les contribuables, plutôt que de s'attacher aveuglément au recouvrement du moindre dollar d'impôt. L'article se sert de Singapour comme étude de cas et analyse comment les guides d'impût électronique (e-Tax guides) publiés par l'autorité fiscale de Singapour parviennent à simplifier des concepts juridiques complexes sous une forme facilement accessible pour les contribuables. Dans certains cas, l'autorité fiscale de Singapour a adopté une position plus généreuse envers le contribuable que la stricte position juridique, ce qui a possiblement épargné à toutes les parties des coûts de conformité disproportionnés. L'article propose quelques autres domaines dans lesquels les autorités fiscales pourraient fournir plus d'orientations. Enfin, l'article souligne que les orientations n'ont pas à être figées et qu'elles peuvent être rajustées à mesure que la technologie évolue et les réalités commerciales changent.

1. INTRODUCTION

The taxation of digital tokens has increasingly become a subject of interest to tax authorities around the world in recent years, with a clear increase in enforcement activities.[1] While digital tokens are rarely specifically singled out for differential tax treatment in tax legislation,[2] existing provisions imposing tax liability tend to be broadly drafted and thus transactions involving digital tokens are likely to attract tax liability even under current tax frameworks. The starting point is that the fact that an asset is a digital token does not generally change its tax treatment in and of itself, which must be determined through the application of orthodox tax principles, based on the surrounding circumstances of the

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1 For example, see Lasker, "The Taxman Is After Your Bitcoin Profits — Though the Law Is a Grey Area" (30 January 2018), online: *ABC News* < https://www.abc.net.au/news/2018-01-30/bitcoin-cryptocurrency-tax-avoidance-profits/9374224 > ; IT Brief New Zealand, "Got Crypto? Pay Tax — A Quick Look at IR's New Crypto-Asset Guidance" (8 September 2020), online: *IT Brief New Zealand* < https://itbrief.co.nz/story/got-crypto-pay-tax-a-quick-look-at-ir-s-new-crypto-asset-guidance > ; and Luisa Scarcella, "Exchange of Information on Crypto-Assets at the Dawn of DAC8" (29 March 2021), online: " *Kluwer International Tax Blog* < http://kluwertaxblog.com/2021/03/29/exchange-of-information-on-crypto-assets-at-the-dawn-of-dac8/ > .

2 There are some notable exceptions. For example, Australia and Singapore have passed legislation to exempt "supplies" of Digital Payment Tokens (DPTs) from Goods and Services Tax (GST) since their use is analogous to that of money.

relevant taxable event.[3] This requires the careful consideration of how a wide body of tax law might apply to each particular transaction and is by no means an easy task. Without the aid of a tax professional, navigating through the maze of applicable tax legislation is likely to be difficult if not impossible for the average taxpayer.

There is a risk of administrative inefficiency in the collection of taxes due on transactions involving digital tokens that can manifest itself in various ways. Firstly, in this relatively new area, there is likely to be uncertainty on what the correct tax treatment might be, both on the part of taxpayers and tax authorities. This requires both parties to seek tax and legal advice that is often duplicative (in the sense that similar issues tend to keep coming up for different taxpayers) and bear the risk of taking an incorrect legal position. Secondly, there are several situations where the strict tax position under the law might be complex and costly to apply, even though the revenue-raising potential might be limited in most cases. To insist on applying the strict tax position might thus result in disproportionate administrative costs, relative to the amount of revenue actually collected.

This article suggests that administrative efficiency in the taxation of transactions involving digital tokens can be enhanced through the release of carefully considered administrative guidance by the tax authorities.[4] Such guidance should not merely focus on accurately representing the strict legal position under tax law, but should also consider what the optimal position the tax authorities should take in order to strike the right balance between revenue collection and administrative efficiency of collection. In appropriate situations, tax authorities may wish to consider offering administrative concessions[5] to

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[3] Vincent Ooi, "A Framework for Understanding the Taxation of Digital Tokens" (2021) 50:4 Australian Tax Review 260 at 262.

[4] Many tax authorities have provided quite a range of tax guidance for this area. To give but a few examples, see OECD, *Taxing Virtual Currencies: An Overview of Tax Treatments and Emerging Tax Policy Issues* (2020), online: *OECD* <https://www.oecd.org/tax/tax-policy/taxing-virtual-currencies-an-overview-of-tax-treatments-and-emerging-tax-policy-issues.pdf> [OECD Report]; Australian Tax Office, "Tax Treatment of Cryptocurrencies", online: *Australian Tax Office* <https://www.ato.gov.au/general/gen/tax-treatment-of-crypto-currencies-in-australia—specifically-bitcoin/>: New Zealand Inland Revenue Department, "Cryptoassets" online: *New Zealand Revenue Department* <https://www.ird.govt.nz/cryptoassets>; Her Majesty's Revenue and Customs, "Cryptoassets Manual", online: *GOV.UK* <https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual>; and Canada Revenue Agency, "Virtual Currency", online: *Government of Canada* <https://www.canada.ca/en/revenue-agency/programs/about-canada-revenue-agency-cra/compliance/digital-currency/cryptocurrency-guide.html)>.

[5] Also known as "Extra-Statutory Concessions", administrative concessions have been applied since at least the nineteenth century in the UK (see Chantal Stebbings, "The Equity of the Executive: Fairness in Tax Law in Nineteenth-century England" in Peter Turner, ed., *Equity and Administration* (Cambridge: Cambridge University Press, (2016) 268).

taxpayers, thereby forgoing tax that they would strictly be entitled to collect under the law.[6] Such positions could be periodically reviewed and subsequently changed if the potential revenue collection increases to the point when it becomes worthwhile collect revenue on these transactions. This would be an enlightened approach to taxation, focusing on efficient taxation rather than blindly chasing down every last tax dollar, regardless of the costs of doing so.[7]

This article considers how this approach might be taken, using the case study of Singapore. It is divided into two main parts, the first looking at how the e-Tax Guides[8] released by the Inland Revenue Authority of Singapore (IRAS) often depart from the strict legal position (generally to the benefit of the taxpayer),[9] where it would be administratively efficient to do so. It is also clear that the guidance is drafted to be accessible to the average taxpayer, with a preference for presenting key concepts simply rather than attempting to lay out all the legal intricacies. Examples that will be considered include the tax treatment of the creation of digital tokens through mining and forging (Section 2), and receipt of digital tokens through airdrops and forks (Section 3). The second part looks at three areas where the strict legal position is currently rather complex and which would benefit from some administrative guidance from the IRAS. It is suggested that the position on the deduction of borrowing costs incurred on the loan of digital tokens be clarified (Section 4), and that clear guidelines for the deductibility of losses from the theft and loss of digital tokens be set out (Section 5).

(a) A Brief Introduction to Common Types of Digital Tokens

Digital tokens are in essence, digital financial assets based on distributed ledger technology.[10] With a wide range of use cases, one of the first attempts to

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6 Daly has laid out a list of justifications for administrative concessions (see Stephen Daly, "The Life and Times of ESCs: A Defence?" in Peter Harris & Dominic de Cogan, eds., *Studies in the History of Tax Law: Volume 8* (Oxford: Hart Publishing, 2017) 175. The type of administrative concession proposed in this article would be classified as a concession introduced for the practical functioning of the tax system, for administrative convenience.

7 Similar language has been used by Lord Roskill in *Inland Revenue Commissioners v. National Federation of Self-Employed & Small Businesses Ltd.* (1981), [1982] A.C. 617, [1981] 2 All E.R. 93, [1981] 2 W.L.R. 722 (U.K. H.L.) at 660 [A.C.] [*Fleet Street Casuals* Case].

8 Singapore was one of the faster jurisdictions to publish fairly comprehensive guidance on the taxation of digital tokens, with one e-Tax Guide on Income Tax and another on GST published before the OECD Report was released. See IRAS, IRAS e-Tax Guide: Income Tax Treatment of Digital Tokens (9 October 2020) [IRAS IT Guide]. (The first edition of the guide was published on 17 April 2020); and IRAS, IRAS e-Tax Guide: GST: Digital Payment Tokens (19 November 2019) [IRAS GST Guide].

9 If the guidance departs from the strict legal position to the detriment of the taxpayer, this is by definition not an administrative concession (see Daly, *supra* note 6 at 175).

10 OECD Report, *supra* note 4 at 10.

organise and conceptualise digital tokens was the widely-adopted classification by the Swiss Financial Market Supervisory Authority.[11] While formulated with securities regulation in mind, the framework has proven influential in tax law.[12] Under the framework, digital tokens are divided by their objective economic substance into (1) payment, (2) utility and (3) security tokens.

(i) Payment tokens

Payment tokens can generally be understood as mediums of exchange which do not constitute fiat currency and which are not legal tender.[13] In Singapore, DPTs have been expressly defined in legislation, at least for the purposes of GST.[14] A more generally applicable definition can also be found in Section 2(1) of the *Payment Services Act 2019*, which refers to DPTs as "any digital representation of value" that is expressed as a unit, not denominated in any currency capable of being transferred, stored or traded electronically.[15] Crucially, DPTs are characterised by the intention to be a medium of exchange for the payment for goods or services, or for the discharge of a debt.[16]

(ii) Utility tokens

Utility tokens confer upon their holder specified rights to use or benefit from goods or services in exchange for the token.[17] They can be understood as reflecting the purchase of a future good or service provided by the issuer[18] and may be likened to vouchers.

(iii) Security tokens

Security tokens are digital representations of physical or financial assets,[19] and may be viewed as analogous to traditional forms of securities such as

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[11] Swiss Financial Market Supervisory Authority, Press Release: FINMA publishes ICO guidelines (16 February 2018) at 2.

[12] Ooi, *supra* note 3 at 262-266.

[13] IRAS IT Guide, *supra* note 8 at para. 5.1. However, as of 27 November 2022, Bitcoin has been recognised as legal tender in El Salvador and the Central African Republic, though these remain the only two countries at the present moment to do so. This does raise open questions as to whether Bitcoin can be said to be a "foreign currency".

[14] Under the *Singapore Goods and Services Tax Act 1993* [SGSTA], s. 2A, a DPT is "i) expressed as a unit; ii) designed to be fungible; iii) is not denominated in or pegged to any currency; iv) can be transferred, stored or traded electronically; and v) is or is intended to be a medium of exchange accepted by the public." The definition of a DPT also does not include money, or anything which gives an entitlement to receive or direct the supply of goods and services from a specific person or persons, among other considerations.

[15] *Payment Services Act 2019* (No. 2 of 2019) [SPSA].

[16] *Ibid*., s. 2(1).

[17] IRAS IT Guide, *supra* note 8 at para. 4.2.

[18] Aurelio Gurrea-Martínez & Nydia Remolina, "The Law and Finance of Initial Coin Offerings" in Chris Brummer, ed., *Cryptoassets: Legal, Regulatory, and Monetary Perspectives* (Oxford, U.K.: Oxford University Press, 2019) 120.

equities, bonds, or derivatives. Just as there can be a wide range of securities with hybrid characteristics, rather than just equity or debt securities, this similarly applies to security tokens. Where the holders of security tokens are entitled to some form of ownership or future returns of the company, they would be equity holders. However, where they are only entitled to a fixed return, they are more properly regarded as debt holders. [20]

2. CREATION OF DIGITAL TOKENS THROUGH MINING (AND FORGING)

(a) Mining

Mining is the foundational process upon which the majority of distributed ledger systems are built. The core concept of a distributed ledger system and what makes it a decentralised rather than a centralised system, is the fact that the record of transactions is both maintained and verified by a network of nodes (computers) rather than a single computer. In order to do so, a "proof-of-work" mechanism is used such that each node competes to solve mathematical equations that are difficult to solve but whose solutions can be easily checked.[21] The requirement to expend significant computing power in order to update the ledger makes it uneconomic for a party to simply control the majority of the nodes in the network and make fraudulent amendments to the ledger (in what is commonly-known as a 51% attack).[22] However, as this system requires multiple nodes to devote computing power to the maintenance and verification of the ledger, it is necessary to incentivise the nodes to do so. The activity of the nodes in doing so is known as "mining" and the fastest miner to correctly perform the calculations to verify the transactions and share their results with the network will receive tokens.[23]

In practice, it is DPTs which are the most likely to be created by mining. In the case of utility tokens, it is unlikely that the business providing the goods and services would allow for mining of the tokens, as they would eventually have to back the tokens by providing the goods or services. It is possible that security tokens can be created by mining, though these are unlikely to be asset-backed tokens in the sense of having underlying real assets. Instead, where these tokens can be mined, they are more likely to be DPTs, which also confer voting rights.

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[19] Christophe Waerzeggers & Irving Aw, "Difficulties in Achieving Neutrality and Other Challenges in Taxing Cryptoassets" in Chris Brummer, ed., *Cryptoassets: Legal, Regulatory, and Monetary Perspectives* (Oxford, U.K.: Oxford University Press, 2019) 220.

[20] Gurrea-Martínez & Remolina, *supra* note 18 at 139.

[21] OECD Report, *supra* note 4 at 11.

[22] See Cristopher Koch & Gina Pieters, "Blockchain Technology Disrupting Traditional Records Systems" (2017), online: *SSRN* < https://ssrn.com/abstract = 2997588 > .

[23] OECD Report, *supra* note 4 at 11.

(i) Income tax

The guidance offered by the IRAS on mining activities is that in determining the taxability of mining activities, the key question is whether the mining is carried out with an intention to profit or merely as a hobby (or to hold the tokens mined as a long-term investment). In the case of the former, gains from mining are taxable (and corresponding expenses or losses are deductible), while in the case of the latter two situations, the converse applies.[24]

In determining the question of whether there is an intention to profit, the IRAS has provided further guidance which seeks to draw a distinction between mining activities carried out by companies and by individuals. This has come in the form of a *prima facie* presumption that individuals engaging in mining activities are doing so as a hobby and not with a profit-seeking motive. This presumption is rebuttable if there exists a "habitual and systematic effort to make a profit from the activities."[25] A converse presumption applies to companies.[26] With respect to the issue of when the tax liability accrues, the IRAS guidance takes the view that any profits will only be taxed when the payment tokens mined are actually disposed, because "while the miner is entitled to a right to own a payment token at the point of successful mining, no income is derived by merely holding the payment token."[27]

A careful look at the strict legal position suggests that the IRAS provides simple and easily comprehensible guidance, which is generally rather generous to the taxpayer. It is true that gains from mining activities carried out with an intention to profit are taxable in Singapore.[28] It is also true that activities conducted by companies, as opposed to individuals, are much more likely to constitute business or trade activities.[29] However, strictly speaking, it is not the case that gains from hobbies are not taxable, *per se*, in Singapore. Such gains may not be "business or trade income", but it is very arguable that they should be considered as "all other income", caught by the rather broad "sweeping-up provision" in the SITA.[30]

It is necessary to draw a distinction between two categories of gains: 1) gains from the mining activities themselves (where the miner receives the tokens); and

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[24] IRAS IT Guide, *supra* note 8 at 10.

[25] *Ibid.*

[26] *Ibid.* at 11.

[27] *Ibid.*

[28] Under Section 10(1)(a) of the *Singapore Income Tax Act 1947* [SITA], gains or profits from any trade, business, profession or vocation are taxable.

[29] See *MSI v. CIT* (1997) MSTC 5221 at 5225; and *DEF v. CIT* (1950-1985) MSTC 482 at 486.

[30] SITA, *supra* note 28, s. 10(1)(g), which provides for the taxation of "any gains or profits of an income nature" not falling under any of the other heads of charge. There are significant tax consequences flowing from which head of charge the income falls under, which will be discussed in the following section on forging.

2) gains from the holding and disposal of the tokens. The first category of gains is likely to be considered to be income, regardless of whether the gains are "business or trade income" or "all other income." The second category of gains may arise because the value of digital tokens may fluctuate over time. These gains may once again be taxed either as "business or trade income" or "all other income" depending on the surrounding circumstances. However, the second category of gains involve the disposal of assets, for which very different tests are applicable to determine if they are income in nature. To determine if the gains are "business or trade income", the "badges of trade test"[31] should be applied, whereas to determine if they are "all other income", the test laid out in *IB v. CIT* should be applied.[32] It is only when considering the second category of gains that the intentions of the taxpayer to hold the tokens mined as a long-term investment are relevant. This factor has no bearing whatsoever on the first category of gains.

As for the question of when the tax liability accrues, the IRAS guidance has taken the position that the profits from mining will only be taxed at the point of disposal of the digital tokens and not at the point of mining, because "while the miner is entitled to a right to own a payment token at the point of successful mining, no income is derived by merely holding the payment token."[33] Once again, this appears to be generous to the taxpayer. The true legal position is that where money's worth is received by a taxpayer, the value of the receipt must be taken into account for tax purposes at the point of receipt.[34] Many payment tokens will have a readily ascertainable market value and would be considered to be money's worth. Postponing valuation of the asset may only occur when it is impractical to value the asset received at the point at which receipt is taken into account.[35] This technical distinction is an important one, because as discussed above, the value of digital tokens may fluctuate over time. It is possible for the value of a payment token to rise or fall after it has been mined but before it has

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[31] The badges of trade are indicia that are used in the determination of the existence of a trade. The six most common badges are: 1) subject matter of realization; 2) frequency of similar transactions; 3) supplemental work on the property realized; 4) motive; 5) circumstances responsible for the realization; and 6) length of period of ownership; though as many as 11 may be applicable (see Teo Keang Sood, "Badges of Trade Revisited" (1996) 43 Sing. J.L.S. 43; and Vincent Ooi, "The Taxation of Cryptocurrency Gains" (2021) 75:7 Bulletin for International Taxation 323 at 325-326.

[32] *IB v. CIT*, [2004] SGITBR 10 at paras. 38-39, where the Singapore Income Tax Board of Review held that gains from "extraordinary" isolated transactions may constitute income where the taxpayer had the requisite intention to make a profit or gain before entering into the transaction" and the taxpayer had to prove that the gains were made on the disposal of properties acquired with the intention of being held by him as long-term investments (see Vincent Ooi, "Taxing 'All Other Income' in Singapore and Malaysia" (2019) 19:2 O.U.C.L.J 204 at 212-214.

[33] IRAS IT Guide, *supra* note 8 at 11.

[34] *Gold Coast Selection Trust Ltd. v. Humphrey (Inspector of Taxes)*, [1948] A.C. 459, [1948] 2 All E.R. 379, 30 T.C. 209 (U.K. H.L.).

[35] *Harrison v. Cronk & Sons*, [1937] A.C. 185.

been sold. The nature of resultant gain or loss (the second category referred to above) as either income or capital may be different from the nature of the profits from mining (the first category).

It is clear that the strict legal positions discussed above are complex and that the average taxpayer will probably have considerable difficulties applying these principles without some kind of tax or legal advice. There are several advantages to the approach taken in the e-Tax guide. Given the prevalence of so-called "hobby mining", where individuals only mine a relatively small amount of digital tokens, it does not make sense for the tax authorities to require these individuals to declare their income from these activities and prepare the associated paperwork. In any case, such "income" would be taxable net of the expenditure incurred in its generation, making the potential revenue collectable even lower. Taxing such "income" might also raise the issue of the deductibility of any losses incurred from mining activities, which might potentially be set-off against other existing sources of income. Viewed as a whole, the approach laid out in the IRAS guidance of only taxing profits from mining where there is a "habitual and systematic effort to make a profit from the activities"[36] appears to draw a good balance between forgoing relatively small amounts of revenue which might be tedious and inefficient to collect, and still retaining the ability to tax potentially larger amounts of revenue from commercial operations. This may be contrasted with the position taken by Her Majesty's Revenue and Customs (HMRC) in the UK, where profits from mining will be taxable as miscellaneous income even if the mining may only be performed on a small-scale as a hobby.[37]

(ii) GST

In Singapore, the IRAS guidance adopts the position that the mining of DPTs generally does not constitute a supply for GST purposes, on the basis that "there is generally no close nexus between the service provided by the miner to the persons whose transactions are verified, and the mined tokens that the miner received from the blockchain ecosystem."[38] This would only apply to a situation where the parties paying the mined tokens are unidentifiable, with GST being chargeable otherwise, if the miner is GST-registered and zero-rating does not apply.[39] This position may be somewhat generous as compared to the strict legal position, which one can conceptualise as one involving a concurrent supply. The miner supplies mining services, and the parties along the nodes supply the tokens in exchange.[40] Arguably, even where the miner is providing the mining services to unspecified individuals, it does not mean it should not be subject to GST, as it is nonetheless making a supply.[41]

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[36] IRAS IT Guide, *supra* note 8 at 10.

[37] HMRC: Policy Paper, Cryptoassets: Tax for Individuals (20 December 2019).

[38] IRAS GST Guide *supra* note 8 at para. 10.1.

[39] *Ibid.* at para. 10.2.

[40] *Ibid.*

Once again, the approach adopted in the IRAS e-Tax guide appears to make sense. While GST may technically be chargeable on the mining of digital tokens, the number of situations in which tax might actually be collected are few and far between. Firstly, the miner would only be required to charge GST if it crosses the GST-registration threshold.[42] Secondly, where DPTs are supplied as consideration in respect of any transaction (including mining transactions), the law treats this as not a supply of goods or services at all for GST purposes.[43] Given that the bulk of mining activities are likely to be focused around DPTs rather than utility or security tokens, it is probably preferable to have clear guidance that the mining of DPTs generally does not constitute a supply for GST purposes, rather than to leave the position ambiguous on the chance that a small amount of revenue might be collected from such activities.

(b) Forging

As previously discussed, mining is designed to force the nodes to expend significant computing power to ensure that it is uneconomic to make fraudulent amendments to the ledger. However, this essentially results in a massive waste of electricity and computer hardware, which is increasingly becoming unacceptable in terms of its environmental impact.[44] Forging is a mechanism which is designed to achieve the same outcome as mining, but through the use of a "proof-of-stake" mechanism instead, which is far more energy-efficient.[45] While the nodes still maintain and verify the ledger, no mathematical equations need to be solved. Instead, the nodes "stake" tokens that will be forfeited if they are found to have engaged in errant behaviour that threaten the integrity of the ledger.[46] As with mining, forgers are awarded tokens to compensate them for their role in the process of maintaining and verifying the ledger.

Mining and forging tend to be methods of creation almost exclusively associated with payment tokens. As noted above, they are essentially mechanisms put in place to "pay for" the running of the distributed ledger

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41 SGSTA, *supra* note 14, s. 8(1).

42 The total value of taxable supplies must exceed or be expected to exceed S$1 million in the period of 12 months. See *ibid.*, s. 8(2), read with Sch. 1, para. 1.

43 Goods and Services Tax (Excluded Transactions) Order, at para. 7.

44 Olga Martynov. *Sustainability Analysis of Cryptocurrencies Based on Projected Return on Investment and Environmental Impact* (2020) Harvard University ProQuest Dissertations Publishing.

45 OECD Report, *supra* note 4 at 11.

46 To be precise, the staked tokens will be forfeited if a node violates either one of two "slashing conditions" which are: 1) a validator must not vote simultaneously for two blocks at the same target height and 2) a validator must not vote within the span of its other votes. See Vitalik Buterin, "A Next-Generation Smart Contract and Decentralized Application Platform" (23 Jun 2020), online: *Github* < https://github.com/ethereum/wiki/wiki/White-Paper > ; and Vitalik Buterin & Virgil Griffith, "Casper the Friendly Finality Gadget" (25 October 2017), online: *Cornell University* < https://arxiv.org/abs/1710.09437 > .

system and the "costs" are spread amongst the existing owners of the digital token as an increased supply of the token leads to a devaluation of the existing tokens, in a manner akin to inflation. While not impossible, issuers of utility or security tokens would arguably want to retain much tighter control over the supply of such tokens by being the only source of such tokens. It should be remembered that utility tokens will have to be honoured by the issuer (or an agreed third party) at some point and that security tokens often grant the owner control or voting rights.

While it may be argued that mining and forging are functionally similar in what they are meant to achieve, the different ways by which they accomplish this means that the tax consequences of both activities cannot be assumed to be the same. Be that as it may, it remains much more common for tax authorities to provide guidance on mining than forging and quite often the two processes are conflated when it comes to their tax implications.[47] The IRAS guidance does not conflate mining and forging but does not expressly address the latter. It is suggested that while there are some technical legal differences between the tax treatment of mining and forging activities, in most cases, these differences will not be significant to the average taxpayer and guidance on the tax treatment of forging should generally follow that of mining.

(i) Income tax

The IRAS has not provided any specific guidance on the tax treatment of forging activities. It is arguable that since there are broad functional similarities in what mining and forging are meant to achieve, their tax treatment should also be broadly similar.

(ii) GST

The differences between mining and forging potentially creates a divergence in the GST treatment of forging. The key question is the legal nature of the staking of tokens. If the staking is considered to be a supply of goods or services, then GST would have to be charged on such a supply, with the potential of making forging on a large scale[48] essentially commercially unviable. However, it is submitted that in most cases, staking is not a supply of goods or services because the tokens are essentially frozen while they are staked and not actually transferred for the use of other nodes in the network. This is more analogous to the placing of funds in escrow rather than a loan or exchange. Thus, the GST implications of mining or forging would appear to be the same so long as the Proof-of-Stake mechanism does not allow the staked tokens to be loaned to or exchanged with other nodes in the network.

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[47] OECD Report, *supra* note 4 at 51.

[48] Since the GST registration threshold is a total value of taxable supplies of S$1 million over a period of 12 months (or an expectation that this will be met). See SGSTA, *supra* note 14, s. 8(2).

3. RECEIPT OF DIGITAL TOKENS THROUGH AIRDROPS AND FORKS

(a) Airdrops

Airdrops refer to the distribution of digital tokens for free. This generally is undertaken as a marketing tool to increase awareness of a new token and to increase liquidity in the early stages of issuance.[49] Airdrops are perhaps most common amongst DPTs. They are rarer for utility and asset-backed security tokens since there is a real "cost" to the issuer in terms of having to provide goods, services, or other assets.

(i) Income tax

In Singapore, the IRAS guidance has indicated that where an airdrop is not received in exchange for any goods or services performed, then it would not be considered as income and would not be taxable.[50] Conversely, income tax may be charged when goods or services are exchanged for the airdrop. Difficulties arise due to the lack of a "bright-line test" to determine the requisite level of participation required to constitute an exchange of good and services for the airdropped tokens. In some situations, one might be required to undertake certain positive steps before the tokens are airdropped. This can range from the following of the issuer's account on a social media platform, to the active sharing of a post on social media.[51] The position taken by the IRAS may derive from the fact that airdropped tokens are typically given for free or are of minimal value,[52] and therefore represent limited taxable amounts. However, conceptually, it is likely that tokens from airdrops can be treated as "all other income" under s. 10(1)(g) should the tax authority choose to take that position.

(ii) GST

The IRAS has taken the position that airdrops of DPTs are not subject to GST.[53] It is submitted that this position must be correct, though the analysis of why is not so straightforward. The starting point is to determine whether the supply of DPTs through airdrops can be a standard-rated supply in the first place. The relevant statutes make it clear that where DPTs are supplied in exchange for currency or other DPTs this will be an exempt supply,[54] and where DPTs are supplied as consideration in respect of any transaction (other than for currency or other DPTs) this will not be a supply of goods or services at all.[55]

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[49] IRAS IT Guide, *supra* note 8 at 11.

[50] *Ibid.*

[51] Waerzeggers & Aw, *supra* note 19 at 234.

[52] Carol Goforth, "It's Raining Crypto: The Need for Regulatory Clarification When It Comes to Airdrops" (2019) 15:2 Indian Journal of Law and Technology 321 at 324.

[53] IRAS GST Guide, *supra* note 8 at 19.

[54] SGSTA, *supra* note 14, Fourth Sch., Part I, para. 1B.

The framework may appear to comprehensively give effect to the likely policy intention of not treating the supply of DPTs as a standard-rated supply. However, there appears to be one lacuna in the statutory framework, which fails to cover the situation where DPTs are given away for free. It is possible that this may have been a simple oversight, since the two statutory provisions listed above are in different statutory instruments. However, even if that were the case, the legal position remains that there is no express statutory provision covering this situation at the moment and general legal rules must apply.

As a matter of principle, generally, if a supply of standard rated goods or services is made by a GST-registered person, GST must be charged on a such a supply even if it is given gratuitously.[56] However, crucially, this does not apply except where: 1) credit for input tax has been allowed to the supplier in respect of the supply of those goods or anything comprised in them; or 2) the goods comprise assets of another business transferred to the person as a going concern by another taxable person.[57] The most likely business model of a company conducting an airdrop of a DPT would be to create publicity, with an intention to later sell that DPT. The sale of the DPT would, as discussed above, be either exempt or non-supplies, meaning that the company would not be able to claim input tax in respect of the DPTs or anything comprised in them.[58] Thus, gratuitous supplies of DPTs through airdrops are most unlikely to be chargeable supplies.

The rather tortuous reasoning laid out above still brings us to the same conclusion provided for in the e-Tax guide, that airdrops of DPTs are not subject to GST. As such, it really does make sense for the e-Tax guide to merely state the conclusion, without laying out the strict legal position in full and potentially confusing the readers.

(b) Forks

There are two types of forks. Hard forks refer to changes in a protocol code to create a new version of a blockchain. A new token is created as a by-product that operates under the rules of the amended protocol, co-existing with the original token that remains under operation of the existing protocol.[59] Soft forks also involve a change in the protocol code, but result in only one blockchain, with the old version of the protocol becoming invalid for newer nodes that have upgraded their protocols.[60]

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[55] Goods and Services Tax (Excluded Transactions) Order, para. 7.

[56] SGSTA, *supra* note 14, Second Sch. at para. 5(1).

[57] *Ibid*., Second Sch., para. 5(4).

[58] There is a potential exception to this where the attribution rules allow input tax attributable to exempt supplies to be attributable to taxable supplies, but the scope of this concession is rather limited and unlikely to apply in this case.

[59] OECD Report, *supra* note 4 at 15.

After a fork occurs, it may be that only one digital token is still valid (where there is a soft fork, or where there is a hard fork, but the old tokens become invalid). Alternatively, it may be that there are two digital tokens that are valid (where there is a hard fork and both the old and new systems remain in use). Where only one digital token remains valid, this is analogous to the swapping of share certificates, or the refinancing of a loan, as the tokens under the old protocol are effectively no longer realisable and of no value. As such, this should not be treated as a taxable event, as the old token is simply being completely replaced with a new one. The second situation is where both the new and old tokens co-exist and operate under their respective rules,[61] with both retaining value. This is also known as a "permanent chain split." This would be more akin to a situation of a company setting up a subsidiary and making an *in specie* distribution of shares in the subsidiary to their existing shareholders. Forks can occur for all three categories of digital tokens

(i) Income tax

The IRAS has indicated that DPTs received through hard forks may be viewed as a windfall to the recipient, not income, and thus not taxable at the point of receipt. However, where the recipient is trading in payment tokens the gains from the subsequent disposal of the tokens will be taxable.[62] This position is quite generous to the taxpayer. It is submitted that the strict legal position is that DPTs received through hard forks should be taxed as either income from trade or business activities, or as "all other income."[63] As they are not in the nature of capital gains, there is no reason for them to be exempt from income tax. Unless the DPTs have no readily ascertainable market value, the tax liability should immediately arise at the point of receipt of the DPTs from the fork.[64] When the DPTs are subsequently disposed, the appropriate test for income should be applied again to see if the gains made between the points of receipt and disposal of the DPTs are taxable as income.

The position taken by the IRAS of not taxing DPTs received through hard forks can be readily justified on grounds of administrative efficiency. Just as with airdrops, gains from hard forks are typically not particularly large and therefore represent limited taxable amounts. As such, it may not be worthwhile for the tax authorities to seek to tax hard forks.

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[60] Dylan Yaga, et. al., "Blockchain Technology Overview" (2019), online: *Cornell University* < https://arxiv.org/abs/1906.11078 > at 29.

[61] OECD Report, *supra* note 4 at 15.

[62] IRAS IT Guide, *supra* note 8 at 12.

[63] SITA, *supra* note 28, s. 10(1)(a) and (g).

[64] *Harrison v. Cronk & Sons*, [1937] A.C. 185.

(ii) GST

The IRAS takes the position that if a DPT is issued for consideration, it will be an exempt supply. If the token is issued for free, there will be no supply at all.[65] As discussed in the context of airdrops above, this is in line with the strict legal position.[66]

4. DEDUCTION OF BORROWING COSTS INCURRED ON THE LOAN OF DIGITAL TOKENS

One of the key considerations when structuring corporate finance is the overall costs of such financing. If debt financing options are chosen, the issue is whether the borrowing costs incurred in securing such financing are deductible. With the application of blockchain technology to corporate finance, the practice of loaning out one's digital tokens, or what is colloquially termed "crypto lending", is gaining prominence. One would naturally be concerned with whether the borrowing costs associated on the loan of digital tokens would be tax deductible. The loaning of digital tokens is part of the larger decentralised finance movement, which aims at enabling smaller market players to seek and offer financing.

Apart from the fact that the deductibility of borrowing costs in general is a rather complex area of tax law, this issue is extremely important because it is one of the rare areas of tax law where the fact that digital tokens are involved (rather than other assets) makes a major difference to the relevant tax treatment. For example, there is a serious risk that under the current legal position, any borrowing costs incurred on loans of digital tokens taken out for capital purposes may not be tax deductible. The problem arises from the use of specific language in the expenditure deduction provisions in the SITA that refers to "money" and "interest."[67]

There are two potentially relevant provisions in the SITA which allow for borrowing costs to be deducted: ss. 14(1) and 14(1)(a). Section 14(1) is the general provision that permits deductions of expenditure such that the taxpayer may deduct "all outgoings and expenses wholly and exclusively incurred. . . in the production of the income."[68] The provision then goes on to include a list of provisions for deductions of expenditure in specific instances under s. 14(1)(a) to 14(1)(h).[69] These are non-exhaustive and since s. 14(1) ends with the word

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[65] IRAS GST Guide, *supra* note 8 at 19.

[66] SGSTA, *supra* note 14, Fourth Sch., Part I, para. 1B; and Goods and Services Tax (Excluded Transactions) Order, para. 7.

[67] For a detailed analysis of this issue, see Vincent Ooi, "Tax Challenges in Debt Financing Involving Digital Tokens" (2022) 17:4 Capital Markets Law Journal 564.

[68] SITA, *supra* note 28, s. 14(1).

[69] *Ibid*., ss. 14(1)(a) to 14(1)(h).

"including", it follows that a taxpayer may seek to qualify for a deduction under s. 14(1) generally or any of the subsections under ss. 14(1)(a) to 14(1)(h).

Section 14(1)(a) specifically provides for borrowing costs, stating that deductions may be made on "(i) any sum payable by way of interest; and (ii) any sum payable in lieu of interest or for the reduction thereof, as may be prescribed by regulations. . . upon any money borrowed by that person where the Comptroller is satisfied that such sum is payable on capital employed in acquiring the income."[70] Section 15(1)(c) provides that "no deduction shall be allowed in respect of . . . (c) any capital withdrawn, or any sum employed or intended to be employed as capital . . ."[71]

Under Singapore tax law, revenue expenditure may be deducted under either ss. 14(1) or 14(1)(a), but capital expenditure may only be deducted under s. 14(1)(a).[72] Section 14(1) is broadly drafted, allowing "all outgoing and expenses . . .", but s. 14(1)(a) is a lot more restrictive and only allows for borrowing costs to be deducted "upon any money borrowed." This raises the question as to whether a loan of digital tokens qualifies as "money borrowed." Following the *locus classicus* of *Moss v. Hancock*,[73] digital tokens would probably not meet the definition of "money", since that the present moment, at least, it may be hard to say that digital tokens "pass freely from hand to hand throughout the community."

This particular point, while of considerable importance, has not been tested before the Singapore courts to date and it is possible that many taxpayers are not even aware that there may be potential difficulties in claiming borrowing costs deductions on loans of digital tokens. Thus, clear guidance from the IRAS on the position which it intends to take would be of immense help to taxpayers. The IRAS might wish to consider announcing an administrative concession to expressly allow for the deduction of borrowing costs in transactions involving digital tokens. Doing so would ensure parity between traditional corporate financing options and those involving digital tokens. However, it is accepted that there are policy considerations here and the IRAS may well decide not to grant this concession. In any case, some clarity on the administrative position would be very welcome.

5. THEFT AND LOSS OF DIGITAL TOKENS

Another two areas where guidance from the IRAS would be appreciated are the tax treatment in situations where there is theft or loss of digital tokens. In both cases, the current law as it stands is complex and has not yet been tested in the context of digital tokens. Yet, theft and loss of digital tokens are fairly

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[70] *Ibid.*, s. 14(1)(a).

[71] *Ibid.*, s. 15(1)(c).

[72] *BFC v. Comptroller of Income Tax*, [2014] 4 SLR(R) 33 at paras. 38-40.

[73] *Moss v. Hancock*, [1899] 2 Q.B. 111 (Eng. Q.B.).

common occurrences, and it is a matter of time before these issues become practical matters for taxpayers.

(a) Theft

Transfer events do not always have to be legal, it being possible to acquire digital tokens through theft.[74] Assuming the stolen digital tokens cannot be recovered, the question arises whether the victim should be permitted to deduct the value of the stolen tokens as a loss. The starting point under the current legal position is that the deductibility of stolen goods or money is only an issue if it is connected to a trade or business.[75] Thus, individual investors who are victims of theft are unlikely to be able to claim a tax deduction on the resultant loss in any case. Whether the loss suffered is connected with a trade or business is a fact sensitive inquiry where a formulistic approach should not be adopted.[76]

However, even if this can be established, there is a further test involving the question of whether a loss incurred by the business was due to defalcation by its employee. If so, a deduction will be disallowed if the taxpayer fails to prove that the employee was not placed in a position of overriding power or control.[77] The issue is whether there existed a sufficient system of checks and balances such that the defalcator had an "overriding power or control" in the company,[78] with the defalcations being committed in the exercise of such power and control.[79] It is clear that there is a risk of moral hazard if all losses resulting from theft of digital tokens are deductible as a matter of course. The law as it stands appears to strike a good balance between taxing a business based on what it has actually earned and making it take responsibility for its internal management. However, clear guidelines should be provided by the IRAS on the situations in which it considers that losses from theft should be deductible, as the average taxpayer is unlikely to be aware of the law in this area.

(b) Loss

Digital tokens can be "lost" when a private key to a wallet is misplaced or forgotten. It is also not unheard of for the sole person with access to the key to die without leaving anyone with the means to access it.[80] The main difficulty lies

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[74] For a recent example of theft of digital tokens as a result of hacking, see Arjun Kharpal & Ryan Browne, "Cryptocurrency Theft Hackers Steal 600 Million in Poly Network Hack" (12 August 2021), online: *CNBC* < https://www.cnbc.com/2021/08/11/crypto-currency-theft-hackers-steal-600-million-in-poly-network-hack.html >

[75] *Allen v. Farquharson Bros & Co.* (1932), 17 T.C. 59 at 64.

[76] *Strong & Co. v. Woodifield*, [1906] A.C. 448 (U.K. H.L.) per Loreburn LC.

[77] *AQP v. Comptroller of Income Tax*, [2013] 2 S.L.R. 155 (S.G.C.A.) at para. 29 [*AQP v. CIT*].

[78] *Ibid.* at para. 24.

[79] *Ibid.* at para. 25.

[80] OECD Report, *supra* note 4 at 31.

in the fact that while the "lost" tokens are effectively taken out of circulation as the owner has no way of accessing them, nothing has actually happened to the tokens themselves. Theoretically, if in the future the private key is found or new technology develops to allow a user to access the wallet without the key, the tokens can be brought back into circulation. It is understandable that the current legal system does not have any ready answers as to the proper tax treatment in such situations. The tax treatment of digital tokens that are lost remains largely an open question across jurisdictions and varies widely. For instance, where Australia views the loss of a digital token as a capital loss, the United Kingdom does not consider the loss of a private key as disposal of the asset.[81]

This uncertainty makes it desirable for the IRAS to provide some guidance as to the position it wishes to take on the matter. For example, it might decide to grant an administrative concession and allow the deduction of the losses so long as the taxpayer can prove that it cannot access the digital tokens using current technology. The losses may be clawed back if the taxpayer can eventually access the tokens as technology develops. However, the IRAS might well decide to deny such deductions outright on the basis that the tokens remain theoretically accessible. Whatever the case, taxpayers should be given some idea of what position the IRAS is likely to take.

6. CONCLUSION

As a relatively new area, the taxation of digital tokens raises particular issues relating to the administration of the tax system. One of these issues has to do with costs of understanding the tax obligations under the current legal framework and compliance with these obligations. As many issues are novel, both the tax authorities and taxpayers may have to expend considerable resources to address them. In many situations, the costs of doing so are simply disproportionate to the potential amount of revenue collected, raising the question of whether tax authorities should simply offer administrative concessions and forgo the collection of tax.[82] But regardless of whether the tax authority chooses to do so, providing clear guidance[83] can go a long way towards helping taxpayers navigate the tax system.

While the strict legal position regarding the taxation of digital tokens can often be highly complex, the Singapore experience has shown that the guidance can actually be drafted in a simple[84] and easily accessible manner.[85] While such

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[81] *Ibid.*

[82] Administrative concessions have been criticised, mainly on the basis that since they rely on the discretion of the revenue authority, the exercise of such a discretion may result in taxpayers being treated differently (see David Williams, "Extra-Statutory Concessions" (1979) British Tax Review 137; Donald Potter, "Extra-Statutory Concessions" (1980) Brit. Tax Rev. 270; and Michael Nolan, "The Unsatisfactory State of Current Tax Law" (1981) Stat. L. Rev. 148.

[83] The practice of the IRAS in Singapore of openly publishing class concessions goes some way towards addressing the concerns of critics of administrative concessions.

guidance is not a perfect representation of the strict legal position, it serves as an excellent starting point for the average taxpayer to understand their tax obligations. Taxpayers who disagree with the guidance remain free to seek their own legal and tax advice and challenge the tax authorities, but for the majority of taxpayers who are unadvised, the guidance is extremely helpful. The guidance should not be understood as fixed in time but gradually evolving, taking into consideration developments in technology and also commercial realities. Transactions which may be administratively inefficient to tax today may well provide the state with a healthy amount of revenue in the future.

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[84] Tax simplification has to be done carefully, for there are known risks, including potential unintended consequences (see Simon James, "Tax Simplification is Not a Simple Issue: the Reasons for Difficulty and a Possible Strategy" (2007) 18:7 University of Exeter Discussion Papers in Management 12. However, a key advantage is that administrative concessions are easily revokable or amendable.

[85] While the experience of Singapore is a good example of how administrative concessions can be effectively used, administrative concessions are not a new concept and are in common use across many jurisdictions, such as Canada, the UK, Australia, etc.