

TAXES AND TAKEDOWNS: AN ASSESSMENT OF INDIA'S KEY POLICY TOOLS FOR VIRTUAL DIGITAL ASSET MARKETS

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Taxes And Takedowns: An Assessment Of India's Key Policy Tools For Virtual Digital Asset Markets

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Esysa Centre
B-40 First Floor
Soami Nagar South, New Delhi - 110017, India

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Author: Dr. Vikash Gautam is an *Adjunct Fellow* and Tamanna Sharma is an *Associate Fellow*, at the Esysa Centre

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EXECUTIVE SUMMARY

This report examines the ecosystem impact of the blocking of the Uniform Resource Locator (URL) of nine foreign virtual digital asset (VDA) exchanges in January 2024. These exchanges saw large increases in trading volumes following the changes in the VDA tax architecture announced in the 2022-23 Union Budget. We therefore examine whether the blocking managed to stem this offshoring, to assess its effectiveness as a policy lever to ensure compliance with local laws for areas like taxation and anti-money laundering.

This report builds on previous research where we found that the extant tax framework, such as the Tax Deducted at Source (TDS), has not increased market transparency or discouraged speculative investment in the VDA ecosystem which were two key goals. Instead, it privileged offshore VDA exchanges over local ones, because VDA investors seek to evade taxes using peer-to-peer (P2P) trading and Virtual Private Networks (VPNs). Trading volume on domestic exchanges has fallen by almost two-thirds since April 2022, a downturn that accelerated after the TDS was imposed. Close to 92 percent of trading volumes were lost to offshore VDA markets compared to the period before the tax was announced.

The relative disadvantage of Indian exchanges vis-a-vis foreign exchanges persists. The former performed three times worse than the latter in volume terms after the TDS was introduced. Moreover, we find that:

- Both deposits and withdrawals from domestic exchanges fell with the introduction of the new tax architecture. However, the decline in the former was almost twice as high as that of the latter. The sharpest fall was recorded after the introduction of the TDS, with a decline of almost 92 percent in deposits and 83 percent in withdrawals.
- Deposits have fallen more sharply than the number of depositors, and withdrawals have also fallen more than the number of withdrawers in the current tax regime. This indicates that most users of local VDA exchanges are now conducting low value transactions, while those who made higher investments have moved out of these exchanges.
- Fifty percent of participants on Indian VDA exchanges were in profit before the tax announcements on 1 February 2022. The introduction of capital gains tax and TDS has brought the odds of profit down to two percent. This finding is in line with our previous finding that the current tax regime has more than doubled the risk exposure of users. Assets under control (AUC) of VDA exchanges also fell significantly and eventually bottomed out after the TDS was introduced.
- **There is limited correction in offshoring trends following the blocking of the URLs. Large disparities persist in exchange transaction volume (88 percent), AUC (13 percent) and odds of profit (20 percent), relative to the laissez-faire taxation regime.**

- **The volume of P2P volumes fell marginally (by five percent), immediately after the blocking of the URLs, before rising again to almost five times of that of pre-URL blocking period. Thus, the impact of blocking of the URLs was short-lived and contrary to the government's intention to deter users from the VDA market.**

We model three TDS scenarios to estimate the impact on the Indian VDA market in this context. These are: one percent, 0.1 percent, 0.01 percent TDS. We find that in all three scenarios and over an 18-month window, the total tax to the exchequer is in the order of 1:16:32. In other words, a 0.01 percent TDS generates 32X greater revenues than the extant TDS. Lower TDS results in greater tax revenues because market-makers need to trade frequently to keep the market healthy. A one percent TDS on every sale erodes a large portion of the trading capital within a few months.

The costs incurred by market-makers due to TDS are passed on to investors. This results in a one percent deduction on each sale and exposes investors to higher risk to compensate for the losses. The withdrawal of liquidity from market-makers and investors leads to domestic market failure. In other words, offshore exchanges are a profitable option for market-makers and investors than domestic exchanges.

We estimate that the total VDA assets held by Indians on exchanges is USD 13.38 billion, with only 9.02 percent held on compliant domestic platforms. We also model the tax revenue potential from VDAs over the next five years, based on three scenarios with the baseline assumption that TDS is 0.01 percent. The total potential tax collection on capital gains ranges between Rs 10,966-14,837 crores across the scenarios. This is approximately 1-1.35 percent of the total corporate tax collections.

Based on these results, we recommend that the new TDS should be set at 0.01 percent. This will incentivise investors and market-makers to operate through compliant domestic VDA exchanges by increasing liquidity as well as rationalising their risk exposure. Additionally, it will also create a level-playing field between domestic and offshore VDA exchanges. This is particularly important because the probability of identifying non-compliance is negligible.

The government may also consider using the Annual Information Returns (AIR) in combination with the Prevention of Money Laundering Act (PMLA) to increase compliance. Leveraging these policy tools can potentially achieve the same level of transaction traceability that TDS currently offers without the distortionary effects of a tax.

Finally, the government should also consider engaging with locally registered exchanges as the extended enforcement arms for effectuating the TDS framework. User-centric compliance is limited in effectiveness because of the pseudonymity of VDA investments and the wide availability of tools like VPNs.

I. INTRODUCTION

This report examines the impact of the recent blocking of the Uniform Resource Locator (URL) of several foreign virtual digital asset (VDA) exchanges on the Indian VDA ecosystem. The blocking comes on the back of changes in the VDA tax architecture announced in the Union Budget 2022-23. This includes a flat 30 percent capital gains tax on profits, no set-off of losses and a 1 percent tax deduction at source (TDS) on VDA transactions exceeding Rs 10,000.¹ The tax changes were prompted by the need for transparency in India's VDA ecosystem and to discourage speculative investment in VDAs.

The VDA tax policy also resulted in the offshoring of VDA trading to unregulated centralised and decentralised exchanges as we have documented extensively our report titled "Impact Assessment of Tax Deducted at Source on the Indian Virtual Digital Asset Market", published in November 2023. The report estimates a 93 percent loss to the exchequer because of such offshoring, on account of the trade falling outside the tax enforcement perimeter. Benchmarking offshoring-related trends against the fallout of the blocking of URLs is relevant because it can tell us whether the measure has managed to redirect trading patterns to domestic exchanges.

It is also important to conduct a fresh empirical exercise on VDA trading considering macroeconomic stability, (including currency and monetary stability) related concerns. VDAs are too small in terms of market capitalisation, exposure, and adoption rates to pose a threat to macroeconomic stability. But the combination of tax and blocking measures indicates that policymakers in India continue to harbour concerns. The European Central Bank (ECB) highlights that VDAs do not pose a risk to macroeconomic stability, if the creation of VDAs, their link to the real economy, trading volume and the adoption rate are low (ECB 2012, 2015). Estimates for global VDA markets suggest that their market capitalisation as a percentage of global financial assets is 0.2 percent (coinmarketcap n.d., Buch 2023), the exposure of internationally active banks to VDAs relative to their overall exposure is 0.013 percent (Basel Committee on Banking Supervision 2023, Buch 2023), and the VDA adoption rate is 4.2 percent (Li 2023).²

Previously, we have also found that the TDS measure had not increased transparency or discouraged speculative investment in the VDA ecosystem. On the contrary, its imposition had unintended consequences like offshoring and a blow to the country's nascent VDA industry. Some key findings from these reports on VDA exchange volumes and tax revenues between 1 February 2022 and 2 October 2023, help situate our latest work:

- The 1 percent TDS levy had not increased transparency because the rampant offshoring following its implementation led to tax evasion by traders Indians traded over Rs 350,000 crores worth of VDAs on offshore exchanges, accounting for more than 90 percent of the total VDA trade by Indians.
- Less than 7 percent of the total VDA trading volume, including the volume from Indian exchanges and citizens on offshore platforms, complied with the TDS architecture. The

collection is even lower at 0.24 percent in the case of trades executed by citizens on offshore exchanges that complied with the TDS mandate.

- Rs 3,493 crores in TDS went uncollected on VDA transactions (13.6 times the TDS collected), representing a lost opportunity for the exchequer. This is a conservative estimate as individuals using offshore platforms would not disclose capital gains (which are taxed at 30 percent) since they do not deduct TDS on their transactions.
- There was a sharp decline in the use of domestic VDA exchanges by Indians immediately after the Budget announcement in February 2022, relative to their participation in foreign VDA exchanges. It intensified after 1 February 2023 (i.e. Union Budget 2023-24) due to widespread expectation that the government would provide some respite, which it did not.
- The TDS introduction of 1 percent TDS has more than doubled the risk on domestic centralized VDA exchanges (105 percent increase). This means that Indian investors are twice as vulnerable to losses on domestic VDA exchanges as they are when trading on foreign exchanges.

Clearly, the TDS is hurting the Indian VDA ecosystem and there is an urgent need to reduce it from 1 percent to 0.01 percent, like the Securities Transaction Tax (STT). This would be a much-needed incentive for Indians to operate through domestic VDA exchanges – a position also shared by industry stakeholders. The government decided to block the URL of several foreign VDA exchanges on 28 December 2023, a move implemented on 12 January 2024. At first glance, this move appears to complement the tax policy and deter offshoring. However, it may prompt only very limited onshoring due to the use of circumvention tools such as virtual private networks (VPNs).

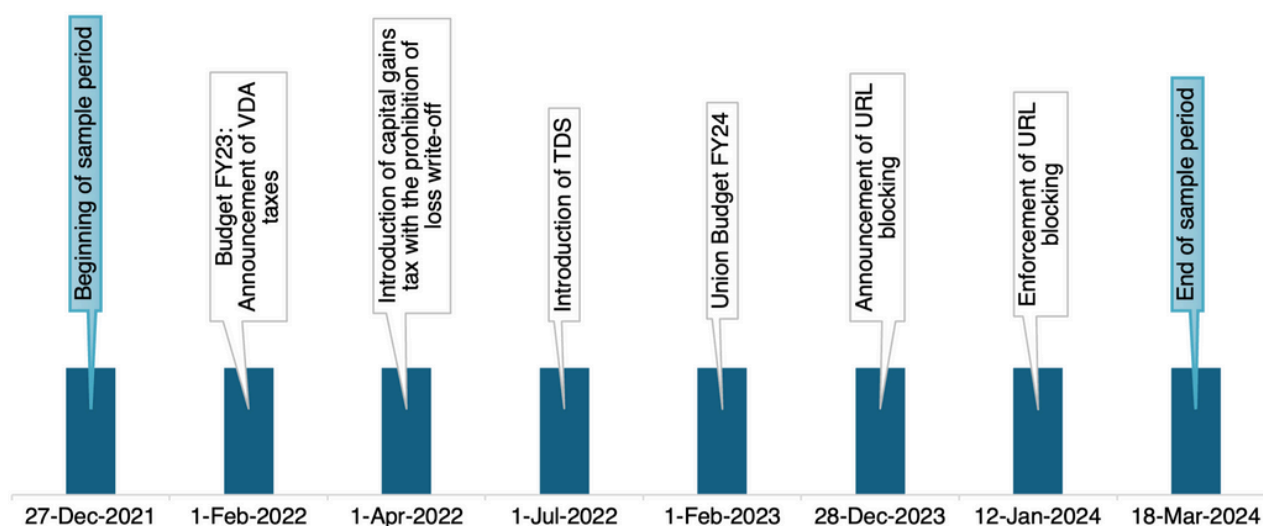
Our investigation is therefore divided into four parts. First, we provide a comparative assessment of the Indian VDA ecosystem with respect to comparable asset classes like securities and commodities. We also assess the tax architecture vis-à-vis other countries. Second, we examine the state of the VDA ecosystem in India and compare it across seven different time periods. These centre on the announcement and implementation of the 30 percent capital gains tax and prohibition on loss write-off, introduction of 1 percent TDS, the Union Budget 2023-24, and the announcement and implementation of the blocking of the URLs linked to select offshore exchanges. Third, we examine the mechanics of TDS from the perspective of market-makers and discuss why it shrank the domestic VDA ecosystem.³ Market-makers provide liquidity for retail users which is essential for price discovery and overall market efficiency, and can help build audit trails when they transact through Financial Intelligence Unit – India (FIU-IND) registered exchanges. Finally, we estimate the tax revenue potential of VDAs for the Indian government over the next five years, between 2024 and 2028.

The second section discusses the methodology and data. Section three presents a comparative assessment of VDA tax architecture vis-à-vis comparable asset classes and across countries. Section four dives into the state of VDA ecosystem in the country using data on market volume, nature and number of transactions, user activity and profitability. Section five presents the market makers' perspective on the impact of the TDS. Section six presents the estimates of tax revenue potential due to VDAs for the Indian government over the next five years. The seventh and final section discusses the policy aspect of our findings.

II. METHODOLOGY AND DATA

We look at the state of the VDA ecosystem from five perspectives: Transaction volumes of the centralised VDA exchanges, deposits and withdrawals through them, their assets under control (AUC), profitability of users operating on them, and the volume of peer-to-peer (P2P) trades. We compare these attributes in seven different time periods around key events between 27 December 2021 and 18 March 2024 (Figure 1). The terminal period extends up to 31 March 2024 in case of P2P volumes.

Figure 1: Key events in the Indian VDA ecosystem



For robust results, we use median values of variables as the preferred estimate. This is particularly important since the VDA market operates in different phases (bull market, bear market, winter, etc.) which can undermine the robustness of results when using a mean-based estimate.

Major data sources for this exercise include nine global VDA exchanges – Binance, Bitstamp, Kucoin, Huobi, Kraken, MEXC Global, Gate.io, Bitfinex and Bittrex, and three domestic VDA exchanges CoinDCX, Coinswitch and WazirX. Additionally, we also use data from the Bharat Web3 Association, an industry association of the Indian Web3 ecosystem.

We use three TDS scenarios: 1 percent, 0.1 percent, 0.01 percent to analyse the viability of the Indian VDA market from a market-maker perspective. We also use them to project tax revenues. In our model, we simulate the behaviour of a representative market-maker using a delta-neutral strategy under various tax regimes. Delta-neutral strategy is used in the analysis of a portfolio and involves multiple positions of an asset in a way that positive and negative deltas balance out. In other words, it is insensitive to price movements in the underlying asset.

Data on the initial values for the parameters for the scenario exercise comes from a consultation with various Indian exchanges. Additionally, we use the data on spreads of the top 50 markets across nine offshore exchanges and three domestic exchanges to approximate the market-maker's margin. The assumptions and timing of the model are discussed in section four.

III. COMPARATIVE ASSESSMENT

TDS is among the most effective tax policies available because it ensures compliance with income tax laws and is an important tool for maximising revenue while minimising collection costs (Shome et al. 1996). Much of the recent success in tax revenue collection can be attributed to TDS. For example, its share in gross direct tax revenue has increased from 32 percent in FY15 to nearly 39 percent in FY22, as per Department of Revenue data.

An Overview of VDA Taxation in India

- Section 2(47A) has been incorporated into the Income Tax Act to provide a clear definition and classification for Virtual Digital Assets.
- Section 115BBH of the 2022 Budget levies a 30 percent tax (4 percent cess) on the profits of trading cryptocurrencies or other virtual digital assets from April 01, 2022.
- The 194S section also levies a 1 percent Tax at Source on the transfer of crypto and other VDAs from July 01, 2022, if transactions exceed INR 10,000 (even INR 50,000 in some cases) in the same financial year.
- The TDS rate applies to private investors, commercial traders, and anybody who transfers digital assets in a particular financial year.
- This tax rate applies regardless of the investor's income and doesn't distinguish between short-term and long-term gains.
- If the transaction is made on an Indian exchange, the exchange will likely deduct the TDS and pay the balance amount to the seller. In this case, the buyer need not take any action.
- CBDT clarified in Jun 2022 that the deduction of TDS can be outsourced to exchanges or brokers as per guidelines.

From the payee's perspective, TDS is a recurring withdrawal of liquidity which feeds into the total tax liability. For income taxpayers, it is deducted monthly. However, in the case of VDAs – like other traded items such as securities, gold, and commodities – TDS is incurred on every transaction. This means that a trader who trades Rs 1 million, which he rotates 200 times with a lot size of Rs 500, will have about 90 percent of his capital locked up with 1 percent TDS after a month. The proportion of locked-in capital would be only 0.01 percent with a TDS of 0.1 percent, whereas with a TDS of 0.01 percent, there would be a capital growth of 9 percent. We illustrate these scenarios in section five. The most critical point is that the capital that is locked in the first month will be refunded after almost 18 months (i.e. the tax department has six months to refund after the close of the financial year).

Table 1 shows the applicable transaction tax for securities and commodities, a close analogue of the TDS which also functions as a transaction tax in the extant case. Not only is the TDS for VDAs higher, there is no threshold or distinction between different trade values and types of VDA. This is important to allow the market to localise while maximising tax revenues.

Table 1: Security Transaction Tax (STT) and Commodity Transaction Tax (CTT) in India

Taxable transaction	Rate (%)
Securities	STT
Delivery-based purchase of equity share	0.10
Delivery-based sale of an equity share	0.10
Delivery-based sale of a unit of oriented mutual fund	0.00
Sale of equity share or unit of equity-oriented mutual fund in a recognised stock exchange otherwise than by actual delivery or transfer and intraday traded shares	0.03
Derivative – Sale of an option in securities.	0.06
Derivative – Sale of an option in securities where the option is exercised.	0.13
Derivative – Sale of futures in securities.	0.01
Sale of unit of an equity-oriented fund to the Mutual Fund – Exchange-traded funds (ETFs)	0.00
Sale of unlisted shares under an offer for sale to the public included in IPO and where such shares are subsequently listed in stock exchanges	0.20
Purchase of units of equity oriented mutual funds	NIL
Commodity	CTT
Sale of a commodity derivative (except exempted agricultural commodities as mentioned below)	0.01
Sale of an option on commodity derivative	0.05
Sale of an option on commodity derivative, where option is exercised	0.0001

Source: MCX ([n.d.](#)), Cleartax ([n.d.](#))

The applicable TDS for VDAs also contradicts global best practices. Table 2 shows a comparative assessment of the tax structure for VDAs in India and selected other countries.⁴ None of the countries, except India, levy TDS on VDA transactions. A TDS of 1 percent (on transactions above INR 10,000) is quite high for an industry characterised by high frequency transactions, similar to securities markets. Unlike India, several countries have developed internal mechanisms to track VDA transactions, especially to ensure tax compliance. For example, the Canada Revenue Agency ([CRA](#)), the [US](#) and the [UK](#) have collaborated with centralised VDA exchanges to obtain investor information to track VDA investments without jeopardising investor liquidity.

A natural side effect of the TDS is that investors are moving from domestic VDA markets to their offshore counterparts, as we demonstrate in the next section using data on P2P trades. This jeopardises the government's twin goals of bringing transparency to the VDA ecosystem and limiting speculative investment in this space. Conversely, setting the TDS at the same rates as transaction taxes for securities and commodities (between 0.01 percent and 0.1 percent) may help maximise reporting and compliance.

Table 2: VDA Tax Architecture Across Countries

Countries	Asset Classification for Taxation	Tax Rate/ Bracket, percent		TDS Applicability	Provision to Write-off Losses
		Long Term Gains/ Income	Short Term Gains		
India	Capital Asset	30	30	Yes (1 percent)	No
USA	Property	0-20	10-37; gains over USD 170,050 taxed above 24 percent. ⁵	No	Yes
UK	Virtual Asset	0-20, on capital gains above GBP 12,300 Tax free allowance; 0-45 income tax; For taxable income up to GBP 50,000, 20 percent tax levied ⁶		No	Yes
Switzerland	Asset/Property	0.3-1 percent (wealth tax on capital gains)	No tax, gifting tax-(2-36)	No	Yes ⁷
Canada	Commodity	15-33 (based on classification as income or capital gain); For taxable income up to \$155,625, rate below 30. ⁸		No	Yes
Ukraine	Business Activity	5	5	No	-
Brazil	Securities	15-22.5 taxed as capital gains	0 under \$7300 p.m., otherwise taxed under capital gains	No	No
Thailand	Digital Asset	8	8	No	Yes
Japan	Miscellaneous Income	0-55 under income tax brackets; For taxable income up to ¥9,000,000, rate is below 33. ⁹		No	No
Austria	Capital Assets	27.5	27.5	No	Yes
Singapore	Property	Tax free (non-business use)		No	Yes
Malaysia	Securities	Tax free	Active trading subject to tax similar to stocks; 0-24	No	Yes
South Africa	Financial Product	18 percent on capital gains, 18-45 percent on income tax brackets; For taxable income up to R 488,700 rate is below 30 percent ¹⁰		No	Yes
Netherlands	Asset	1.9 -5.7 (Net worth tax- taxed on asset value)		No	Yes
Vietnam	Payment means/goods/securities	0-5	5-10	No	Yes
Philippines	Virtual Asset/ Legal Tender	0-35 under income tax brackets. For taxable income up to PHP 2,000,000, rate is below 30 percent ¹¹		No	Yes

Measures like Annual Information Returns (AIR) and the Prevention of Money Laundering Act (PMLA) are also useful in bringing transparency in the VDA ecosystem. AIR helps the government track the details of transactions worth Rs.50,000 and above under Section 285BA of the Income Tax Act, 1961. PMLA is a law used to prevent money laundering and confiscates assets derived from doing so. It requires banking companies, financial institutions, intermediaries and persons carrying on a designated business or profession to verify the identity of clients, maintain records and provide information to the Financial Intelligence Unit – India (FIU-IND).

The FIU-IND has additional measures to bring transparency to the VDA ecosystem based on two pillars: address clustering heuristics and attribution tags. The former are used to group multiple addresses together based on their behaviour while the latter include any form of contextual information (i.e. phone numbers, IP addresses) that can be associated with a particular address, transaction or group. However, the success of these measures depends on information sharing between law enforcement agencies around the world, since VDA transactions are borderless.

These measures should be used in tandem to create a thriving VDA ecosystem while maintaining transparency and encouraging responsible investment. Crane and Nourzad (1984) empirically demonstrate that increasing the level of punishment is only one-fourth as effective as increasing the likelihood of being caught or complying with taxes. Similarly, Webley et al. (1991) and Alm et al. (1992) show that the probability of being audited affects tax compliance, but the level of fines has only an insignificant or weak effect. Wang et al. (2020), Kumar et al. (2017) and Misra (2024) show that the forensic tools provide the best result when used in combination.

IV. STATE OF THE VDA ECOSYSTEM

Transaction Volumes

Table 3 presents the median of global and domestic transaction volumes. It also shows these statistics in relative values, with volumes in the period from 27 December 2021 to 31 January 2022 as numeraire (i.e. scaled to one). Global volume data was sourced from nine exchanges – Binance, Bitstamp, Kucoin, Huobi, Kraken, MEXC Global, Gate.io, Bitfinex and Bittrex. The data on domestic volume comes from three exchanges CoinDCX, Coinswitch and WazirX. They account for over 90 percent and 65 percent of the transaction volume globally and in India respectively.

Table 3: Transaction volumes of global and Indian VDA exchanges

	27 Dec 2021- 31 Jan 2022	1 Feb-31 Mar 2022	1 Apr-30 Jun 2022	1 Jul 2022- 31 Jan 2023	1 Feb-27 Dec 2023	28 Dec 2023- 11 Jan 2024	12 Jan-18 Mar 2024
Absolute values							
Global volume, USD mn	1,346,579	849,702	347,435	277,325	122,727	263,392	234,375
Domestic volume, USD mn	1,254	1,382	442	99	59	142	155
Relative values, volumes in the first period as numeraire							
Global volume	1.00	0.63	0.26	0.21	0.09	0.20	0.17
Domestic volume	1.00	1.10	0.35	0.08	0.05	0.11	0.12

Notes: The statistics are median values in respective periods.

Three results are of note:

- Trading volumes have decreased significantly on Indian VDA exchanges after the introduction of the new tax architecture. Since 1 April 2022, they have fallen by almost two-thirds, a decline which accelerated after a 1 percent TDS was introduced, as almost 92 percent of volumes were lost to foreign exchanges, compared to the period before the tax was announced. Another slump occurred after the FY24 Union Budget as the market was expecting some tax relief, which did not materialise.
- There is minor correction in the trading volume trends following the blocking of the URLs on foreign VDA exchanges. But almost 88 percent volume remains lost from Indian exchanges, relative to the period before the tax announcement.
- Indian VDA exchanges performed almost three times worse than global VDA exchanges after the TDS was introduced. This disadvantage persists even after the blocking of the URLs, albeit to a lesser extent.

Deposits and Withdrawals

Table 4 shows the deposits and withdrawals as well as the number of depositors and withdrawers, with values in the period from 27 December 2021 to 31 January 2022 as numeraire. The data comes from the Bharat Web3 Association.

Table 4: Deposits and Withdrawals on Indian VDA Exchanges

	27 Dec 2021- 31 Jan 2022	1 Feb-31 Mar 2022	1 Apr-30 Jun 2022	1 Jul 2022- 31 Jan 2023	1 Feb-27 Dec 2023	28 Dec 2023- 11 Jan 2024	12 Jan-18 Mar 2024
<i>Relative values, value in the first period as numeraire</i>							
Deposits	1.00	0.63	0.14	0.08	0.05	0.12	0.11
Depositors	1.00	1.03	0.54	0.25	0.21	0.36	0.43
Withdrawals	1.00	1.29	0.26	0.17	0.12	0.21	0.25
Withdrawers	1.00	0.97	0.56	0.25	0.21	0.34	0.36

Notes: The statistics are median values in respective periods. Data source: Bharat Web3 Association Member Respondents.

The table suggests:

- Both deposits and withdrawals fell significantly with the introduction of the new tax system. However, the decline in deposits was almost twice as high as that of withdrawals. Here too, the sharpest fall was recorded after the introduction of the 1 percent TDS, with a decline of almost 92 percent in deposits and 83 percent in withdrawals. This indicates that Indian VDA exchanges became much less attractive to users after the new tax regime was introduced.
- Deposits have fallen more sharply than the number of depositors and withdrawals have also fallen more sharply than the number of withdrawers. This indicates that most of the users of the Indian VDA exchanges are now conducting low value transactions, while market makers have moved out.
- After the blocking of the URLs for foreign VDA exchanges, there has been some correction. But nearly 57 percent depositors and 64 percent withdrawers are still lost compared to the period before the tax announcement. This confirms the earlier finding that offshoring has likely increased, and the blocking of the URLs has resulted in only a minor positive impact in terms of driving onshoring.

Assets Under Control and Profits

Table 5 presents the statistics on assets under control (AUC) on date (i.e. current value) and the proportion of profitable users. AUC is defined as the market value of user assets invested through platform of the VDA exchanges. The data is taken from Bharat Web3 Association.

Table 5: Assets Under Control and User Profit

	27 Dec 2021- 31 Jan 2022	1 Feb-31 Mar 2022	1 Apr-30 Jun 2022	1 Jul 2022- 31 Jan 2023	1 Feb-27 Dec 2023	28 Dec 2023- 11 Jan 2024	12 Jan-18 Mar 2024
Absolute values							
Percentage of profitable users	50	14	2	2	6	21	30
Relative values, value in the first period as numeraire							
Current AUC	1.00	0.93	0.57	0.47	0.49	0.72	0.87
Profitable Users	1.00	0.28	0.04	0.04	0.12	0.42	0.60

Notes: The statistics are median values in respective periods. Data source: Bharat Web3 Association Member Respondents

The following results emerge from the table:

- The proportion of profitable users on Indian VDA exchanges was 50 percent before the tax announcements of 1 February 2022. The introduction of capital gains tax without the option of loss set-off and TDS has brought the odds of profit down to only two percent. This result is in line with our earlier finding that the current tax regime has more than doubled the risk exposure of users. AUC also fell significantly after the introduction of taxes and bottomed out after the introduction of TDS.
- There was some correction after the blocking of the URLs, as mentioned before. But nearly 13 percent of AUC is still lost relative to the period before the tax announcement. The odds of profit – which can be seen as an incentive for users to operate via domestic VDA exchanges – also remain lower at just 30 percent.

Peer-to-peer (P2P) Volume

We estimate the INR P2P volume from Binance in the period between 13 May 2023 and 31 March 2024 using the following steps:

1. We scrape 30-day trading advertisement data (i.e. 30-day trades, and minimum and maximum trade size for each advertiser) for all days of the sample period for each advertiser and track the daily change in the data.
2. For each advertiser, we then estimate the average daily trade size as the average of the maximum and minimum value of their advertisements.
3. We then multiply the number of new trades and the average trade size for the day for each advertiser. We aggregate for all advertisers to obtain an initial estimate of the daily P2P volume.
4. The initial daily estimate is adjusted downwards by a factor of 6.7. This is because between May and October 2023, when we could directly obtain daily P2P volume data from Binance, the exact daily trading volume was about 6.7 times lower than the estimate we determine using steps 1-3.

Figure 2: P2P Volume

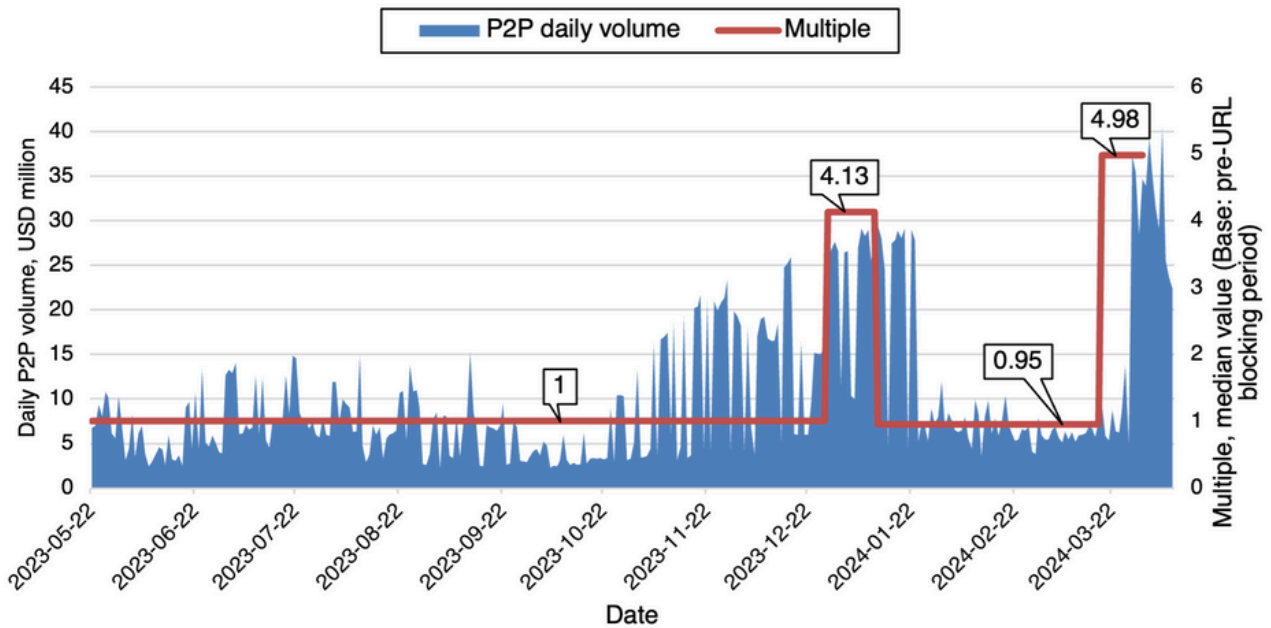


Figure 2 presents the data on INR P2P volumes. We find that the volume of P2P volumes fell marginally (by five percent), immediately after the blocking of the URLs, before rising again to almost five times of that of pre-URL blocking period. Thus, the impact of the blocking of the URLs was short-lived and contrary to the government’s intention to deter users from the VDA market, Indian users have shifted offshore. Since P2P transactions are pseudonymous, the tax structure increases opacity in the VDA ecosystem.

V. MARKET MAKERS

A market-maker is an individual participant or member of an exchange who buys and sells VDAs to provide liquidity and depth to the market. He/she profits from the difference between the bid and ask price. This means that when a trader wants to sell an asset, the market-maker provides liquidity by buying the asset and adding to the inventory. On the other hand, when a trader wants to buy an asset, the market-maker sells it and thus depletes her inventory. The market-maker charges a brokerage fee, known as the bid-ask spread, for enabling these transactions (Logue 1975).

Market-makers play an important role for all exchange-traded and over-the-counter assets such as equities, fixed income securities and VDAs (Grossman and Miller 1988, Cohen et al. 1979). In the case of VDA markets, they build audit trails when active through registered exchanges, provide liquidity for retail users, are essential for price discovery and overall market efficiency. Therefore, it is important that the tax or regulatory mechanisms provide sufficient spread for market-makers to operate, especially because they contribute to compliance in the system.

We analyse the case of the Indian VDA market, from a market-maker perspective, for three TDS scenarios 1 percent, 0.1 percent, 0.01 percent. We use these cases to project tax revenues as well. We make six assumptions listed in Table 6.

Table 6: Assumptions for Tax Calculation

Serial No.	Variable	Value
A	Capital available with market-maker, INR	1,000,000
B	Frequency of capital rotation per month	200
C	Trading amount, INR	500
D	TDS rate, percentage	(3 cases) 1, 0.1, 0.01
E	Crypto tax rate, percentage	30
F	Market-maker's margin, percentage	0.1

The initial values for the parameters in serial numbers A-C (capital available with the market maker, frequency of capital rotation per month and trading amount) are determined in consultation with various Indian exchanges. The tax rates are set by the government. To approximate the market-maker's margin, we have used the average spreads of the top 50 markets across 9 offshore exchanges and three domestic exchanges (Table 7).

Table 7: Average Spread in VDA Exchanges, Offshore and Domestic

	Exchange	Average spread, percentage
Offshore VDA exchanges	Binance	0.04
	Coinbase	0.04
	Bybit	0.05
	Kucoin	0.06
	Bitget	0.05
	BingX	0.09
	Phemex	0.11
	WOO X	0.18
	Crypto.com	0.15
	Offshore average	0.09
Domestic VDA exchanges	CoinDCX	1.78
	WazirX	1.83
	Zebpay	2.28
	Domestic average	1.94

In our model, we simulate the behaviour of a representative market-maker using a delta-neutral strategy under various tax regimes. Delta-neutral strategy is typically used in the analysis of a portfolio and involves multiple positions of an asset in a way that positive and negative deltas balance out. In other words, it is insensitive to price movements in the underlying asset.

In each period, the market maker rotates her capital a certain number of times, realising a predetermined profit on each trade, i.e. a buy and a sell. She deducts TDS at the specified rate on the total value of the transaction of each sale and pays advance tax on her profits every quarter. Six months after the end of the financial year, the TDS is refunded if a surplus has been paid. Starting from an initial date where the total capital equals the working capital, the TDS is deducted in each period from the capital of the previous period. If the market maker is required to make an advance tax payment, it is deducted from the working capital at the end of each quarter. The same applies to TDS if it is refunded. The maximum amount of revenue that the government can realise is limited to the total income tax collected.

Tables 8-10 below present the estimates from the model calibrated on the three TDS scenarios. The computation is done for 18 months. However, we present them for 12 months due to the paucity of space.

Table 8: Scenario 1 with 1 Percent TDS

Serial No.	Variable	Formula	Month											
			1	2	3	4	5	6	7	8	9	10	11	12
G	Trading volume (in Rs.)	A*B	200,000,000	19,800,000	1,960,200	194,060	19,212	1,902	188	19	2	0	0	0
H	Buy	G/2	100,000,000	9,900,000	980,100	97,030	9,606	951	94	9	1	0	0	0
I	Sell	$G*(1+F)/2$	100,100,000	9,909,900	981,080	97,127	9,616	952	94	9	1	0	0	0
	Trading volume (in Rs.)													
J	Buy	H/C	200,000	19,800	1,960	194	19	2	0	0	0	0	0	0
K	Sell	$I/(C*(1+F))$	200,000	19,800	1,960	194	19	2	0	0	0	0	0	0
L	TDS (in Rs.)	D*K	1,001,000	99,099	9,811	971	96	10	1	0	0	0	0	0
M	Total gains (in Rs.)	K-J	100,000	9,900	980	97	10	1	0	0	0	0	0	0
N	Tax on total gains (in Rs.)	E*M	30,000	2,970	294	29	3	0	0	0	0	0	0	0
O	Advanced tax liability (in Rs.)	0 if N<L, else N-L		0			0			0			0	
P	Total capital blocked in the month (in Rs.)	L+O-M	901,000	89,199	8,831	874	87	9	1	0	0	0	0	0
Q	Capital available after the month (in Rs.)	A-P	99,000	9,801	970	96	10	1	0	0	0	0	0	0
R	Capital loss after month (%)	$1 - Q/A$	90.1	99.0	99.9	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
S	Total tax paid to government (in Rs.)	$\Sigma(N)$						33,296						

Table 9: Scenario 2 with 0.1 Percent TDS

Serial No.	Variable	Formula	Month											
			1	2	3	4	5	6	7	8	9	10	11	12
G	Trading volume (in Rs.)	A*B	200,000,000	199,980,000	199,960,002	199,940,006	199,920,012	199,900,020	199,880,030	199,860,042	199,840,056	199,820,072	199,800,090	199,780,110
H	Buy	G/2	100,000,000	99,990,000	99,980,001	99,970,003	99,960,006	99,950,010	99,940,015	99,930,021	99,920,028	99,910,036	99,900,045	99,890,055
I	Sell	G*(1+F)/2	100,100,000	100,089,990	100,079,981	100,069,973	100,059,966	100,049,960	100,039,955	100,029,951	100,019,948	100,009,946	99,999,945	99,989,945
	Trading volume (in Rs.)													
J	Buy	H/C	200,000	199,980	199,960	199,940	199,920	199,900	199,880	199,860	199,840	199,820	199,800	199,780
K	Sell	I/(C*(1+F))	200,000	199,980	199,960	199,940	199,920	199,900	199,880	199,860	199,840	199,820	199,800	199,780
L	TDS (in Rs.)	D*K	100,100	100,090	100,080	100,070	100,060	100,050	100,040	100,030	100,020	100,010	100,000	99,990
M	Total gains (in Rs.)	K-J	100,000	99,990	99,980	99,970	99,960	99,950	99,940	99,930	99,920	99,910	99,900	99,890
N	Tax on total gains (in Rs.)	E*M	30,000	29,997	29,994	29,991	29,988	29,985	29,982	29,979	29,976	29,973	29,970	29,967
O	Advanced tax liability (in Rs.)	0 if N<L, else N-L		0			0			0			0	
P	Total capital blocked in the month (in Rs.)	L+O-M	100	100	100	100	100	100	100	100	100	100	100	100
Q	Capital available after the month (in Rs.)	A-P	999,900	999,800	999,700	999,600	999,500	999,400	999,300	999,200	999,100	999,000	998,901	998,801
R	Capital loss after month (%)	1 - Q/A	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12
S	Total tax paid to government (in Rs.)	$\Sigma(N)$												539,541

Table 10: Scenario 3 with 0.01 Percent TDS

Serial No.	Variable	Formula	Month											
			1	2	3	4	5	6	7	8	9	10	11	12
G	Trading volume (in Rs.)	A*B	200,000,000	217,998,000	237,615,640	245,892,955	268,020,862	292,140,059	302,316,726	329,522,208	359,175,912	371,687,765	405,135,947	441,594,131
H	Buy	G/2	100,000,000	108,999,000	118,807,820	122,946,477	134,010,431	146,070,030	151,158,363	164,761,104	179,587,956	185,843,883	202,567,974	220,797,066
I	Sell	$G*(1+F)/2$	100,100,000	109,107,999	118,926,628	123,069,424	134,144,441	146,216,100	151,309,521	164,925,865	179,767,544	186,029,727	202,770,542	221,017,863
	Trading volume (in Rs.)													
J	Buy	H/C	200,000	217,998	237,616	245,893	268,021	292,140	302,317	329,522	359,176	371,688	405,136	441,594
K	Sell	$I/(C*(1+F))$	200,000	217,998	237,616	245,893	268,021	292,140	302,317	329,522	359,176	371,688	405,136	441,594
L	TDS (in Rs.)	D*K	10,010	10,911	11,893	12,307	13,414	14,622	15,131	16,493	17,977	18,603	20,277	22,102
M	Total gains (in Rs.)	K-J	100,000	108,999	118,808	122,946	134,010	146,070	151,158	164,761	179,588	185,844	202,568	220,797
N	Tax on total gains (in Rs.)	E*M	30,000	32,700	35,642	36,884	40,203	43,821	45,348	49,428	53,876	55,753	60,770	66,239
O	Advanced tax liability (in Rs.)	0 if N<L, else N-L		65,528.6			80,565.1			99,051.9			121,780.9	
P	Total capital blocked in the month (in Rs.)	L+O-M	-89,990	-98,088	-41,387	-110,640	-120,596	-50,883	-136,027	-148,269	-62,559	-167,241	-182,291	-76,914
Q	Capital available after the month (in Rs.)	A-P	1,089,990	1,188,078	1,229,465	1,340,104	1,460,700	1,511,584	1,647,611	1,795,880	1,858,439	2,025,680	2,207,971	2,284,885
R	Capital loss after month (%)	$1 - Q/A$	-9.0	-18.8	-23.0	-34.0	-46.1	-51.2	-64.8	-79.6	-85.8	-102.6	-120.8	-128.5
S	Total tax paid to government (in Rs.)	$\Sigma(N)$							1,051,626					

Table 11: Summary of Results

TDS Rate, percentage	Tax to government over 18 months (in Rs.)	Total Loss, percentage
1.00	33,296	96.88
0.10	539,541	49.47
0.01	1,051,626	1.52

Table 11 shows the summary of the results for three different TDS rates, i.e. 1 percent, 0.1 percent and 0.01 percent TDS. The results show that at a TDS rate of 1 percent, the total tax paid over a period of 18 months is INR 33,296. A reduction in the TDS rate from 1 percent to 0.1 percent will increase tax revenue to approximately INR 5.4 lakh. A further reduction to 0.01 percent will increase tax revenue to approximately INR 10.5 lakh. This means that in the three scenarios and over 18 months window, the total tax to the exchequer is 1:16:32, respectively.

Consider the case of 1 percent TDS resulting in a loss of over 90 percent to gain insight into the mechanics of losses. Market-makers need to trade frequently to keep the market healthy. A 1 percent TDS on every sale erodes a large portion of the trading capital within a few months. Conversely, the costs incurred by market-makers due to TDS are passed on to investors, who end up bearing the additional burden. This results in a 1 percent deduction on each sale and exposes them to higher risk to compensate for the losses. This withdrawal of liquidity from market-makers and investors leads to domestic market failure. In other words, offshore exchanges become a more profitable option for market-makers and investors than domestic exchanges.

VI. TAXABLE BASE AND REVENUE POTENTIAL

This section estimates the tax revenue potential of VDAs for the Indian government over the next five years. We make assumptions to arrive at an estimate based on the framework provided by Thiemann (2021). Using Chainalysis's data on Bitcoin transactions, Thiemann (2021) arrives at estimates of accrued and realised capital gains by EU residents by probabilistically allocating them to countries based on information on web traffic flows to platforms and other clues such as time difference. Thiemann (2021) therefore provides a rough estimate of the tax due in principle. Our estimate can be viewed similarly.

Some data for the imputations comes from the BWA and its members. In addition, we use semrush.com for web traffic data, Kaiko for estimates on AUC, coinmarketcap.com and coingecko.com for market share, and glassnode.com for Bitcoin (BTC) price data. The key assumptions we make for the estimate are as follows:

- Assets under control (AUC) and transaction volumes of VDA exchanges are interlinked.
- Ratio of AUC and INR deposits by Indians on offshore exchanges is the same as on Indian VDA exchanges.
- Indian users' web traffic and investment on offshore VDA exchanges are correlated.
- Absence of policy friction refers to the scenario when TDS is reduced to the rate in comparable asset classes (i.e. securities and commodities) at 0.01 percent. In this scenario, assets held on domestic platforms as a share of total assets held by Indians, will be the same as before the announcement of the current tax architecture on 1 February 2022 and the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021.¹² We use the period between April and December 2020 to approximate this scenario.

Table 12: Estimate of Total Assets held by Indians on all VDA Platforms

Serial No.	Item	Amount	Source/Formula/Rationale
A.	CoinDCX AUC, USD	409,000,000	Kaiko
B.	WazirX AUC, USD	488	Kaiko
C.	CoinSwitch AUC, USD	334,177,077	CoinSwitch, ¹³ adjusted according to Coindesk Market Index ¹⁴
D.	AUC of three Indian Exchange, USD	743,177,565	$D = A + B + C$
E.	Adjustment Factor, percentage	67	Market share of above exchanges (coinmarketcap.com and coingecko.com)
F.	Total Assets held on Indian Platforms, USD	1,107,082,161	$F = D * E$
G.	Ratio of AUC and INR deposits, Indian Exchanges	7.213114754	BWA
H.	Binance P2P volume between 9 March-8 April 2024, USD	634987315.7	Binance based on the methodology in Gautam (2023a, 2023c)
I.	Estimated Assets on Binance held by Indians, USD	4,580,236,375.21	$I = H * G$
J.	Adjustment Factor, percentage	37	Based on ratio of web traffic by Indians on 10 top offshore platforms for Q1 2023 – Q1 2024 (semrush.com)
K.	Estimated Assets on Offshore Platforms (USD)	12,275,863,911.79	$K = I / J$
L.	Total Assets held by Indians on ALL platforms, USD	13,382,946,072.47	$L = K + F$
M.	Assets held on domestic platforms as a fraction of offshore platforms, percentage	9.02	$M = F / L$
N.	Assets held on domestic platforms as a share of total assets held by Indians, in absence of policy frictions, percentage	59	Based on ratio of domestic vs offshore website traffic Jul 2020 – Jul 2021 (semrush.com)
O.	Assets held on Indian Platforms in absence of policy frictions (USD)	7,940,516,542.27	$O = L * N$

Table 12 provides an estimate of total assets held by Indians across all VDA platforms, totalling over \$10.72 billion. In the absence of policy friction, 59 percent of these assets are held on Indian VDA exchanges, which is about \$7.94 billion.

Next, we turn to the future projections for the next four years. (i.e. 2025-2028). To do this, we estimate future annual growth based on BTC prices movements. That's because as BTC accounts for 50-70 percent of the market share and has a high correlation (more than 0.75) with other prominent VDAs such as Ethereum (0.89), Binance Coin (0.79), Cardano (0.77) and Litecoin (0.75). In addition, BTC has been around longer than other VDAs, which provides more data points for the calculations.

Interestingly, BTC price movement is strongly correlated in each four-year window from 2012 onwards (Table 13), where movement within a window is computed relative to the beginning of Year 1. This is usually the year with the highest growth, followed by the lowest growth in the second year and a recovery in the third and fourth years. We rely on this pattern when projecting the BTC price movement for 2024-28.¹⁵

Specifically, we use the 4-year windows to calculate the change in growth for the first, second, third and fourth year (i.e. "Change ratio" in Table 13). Then, as per the statistical regularity that base value and growth rates are negatively correlated, we expect the change in growth to follow a downward trend. Accordingly, we derive the growth rate for each year in the 2024-2028 window.

Table 13: Bitcoin Price Movement

4-year window	Year 1 (Top, %)	Change Ratio	Year 2 (Bottom, %)	Change Ratio	Year 3 (Recovery, %)	Change Ratio	Year 4 (Period End, %)	Change Ratio
2012-2016	9225		1400		3707		5717	
2017-2020	2917	0.32	493	0.35	1705	0.46	1489	0.26
2021-2024	648	0.22	172	0.35	312	0.18	424	0.28
2025-2028*	98	0.16	60	0.35	22	0.07	128	0.31

Notes: The data comes from a primary survey of 300 MSMEs conducted in January-February 2024.

To estimate total capital gains and potential income tax during 2024-28, we apply these growth rates to current AUC derived in Table 12. In addition, we factor in a five percent annual growth in user base as per inputs from the BWA. Forex rate is pegged at 1 USD = INR 85.2.

Given the estimates are conditional on several assumptions that may be true only in principle, we present estimates for three scenarios:

- Baseline scenario (Scenario 1): Capital gains and tax estimates mimic the framework in this section. In this case 59 percent of all Indian VDA investors trade through domestic exchanges, as was the case before the current tax architecture and the preceding Bill.
- Pro-Domestic Market scenario (Scenario 2): Capital gains and tax estimates exceed the baseline scenario by 15 percent. This is possible if 74 percent of all Indian VDA investors trade through domestic exchanges.
- Pro-Global Market scenario (Scenario 3): Capital gains and tax estimates undercut the baseline scenario by 15 percent. This is possible if only 44 percent of all Indian VDA investors trade through domestic exchanges.

Table 14 presents the estimates. Total potential annual tax collection on capital gains is in the range of Rs 10,966-14,837 crores. This is approximately 1-1.35 percent of the total corporation tax in the country (PIB 2024). This estimate aligns closely with the estimated tax contributions from other regulated sectors, such as online gaming, which generates an annual Goods and Services Tax (GST) between INR 12,000 – 14,500 crore (Das 2024).

Implementing a fair and reasonable tax framework, as illustrated in the pro-domestic market scenario, not only increases the government's tax revenue but also bolsters financial stability by enhancing the fiscal pool (Claessens et al. 2010).

Table 14: Estimates of Total Capital Gains and Potential Income Tax, 2024-2028

Sl. No.	Item	Year 0: 2024	Year 1: 2025	Year 2: 2026	Year 3: 2027	Year 4: 2028	Total IT Revenue	Source for Year 0
A	Current AUC adjusted for growth in market value, USD bn	13.38	13.53	7.96	3.04	17.67		"M" in Table 12
B	Profitable AUC, percentage	10	34	8	4	10		BWA
C	Unrealised gains, USD billions	1.34	4.60	0.60	0.12	1.77		A*B
D	Income tax base (INR Cr.)	11,375.50	39,113.95	5,139.93	1,033.58	15,015.93		C*Forex Rate
E	Income tax base adjusted for onshore/offshore/ steady state	6,825.30	23,468.37	3,083.96	620.15	9,009.56		D*60 percent ("N" in Table 12)
F	Annual capital gains owed (Scenario 1), INR Cr.	2,047.59	7,040.51	925.19	186.04	2,702.87	12,902.20	E*30 percent
G	Annual capital gains owed (Scenario 2), INR Cr.	2,354.73	8,096.59	1,063.96	213.95	3,108.30	14,837.53	F*(1+15 percent)
H	Annual Capital Gains owed (Scenario 3), INR Cr.	1,740.45	5,984.43	786.41	158.14	2,297.44	10,966.87	F*(1-15 percent)

VII. DISCUSSION AND POLICY IMPLICATIONS

The results in this report suggest that a one percent TDS makes investors go offshore and it does not maximise the tax revenue. Such a result is supported by literature which suggests that tax evasion or non-compliance increases with the marginal tax rate. Investors tend to switch to other sectors or markets, especially when the probability of being caught is low. Accordingly, we find an uptick in anonymous/pseudonymous P2P offshore trading by Indians, even after the announcement of the blocking of the URLs. Policy makers may consider the following remedies:

- TDS should be set at 0.01 percent. This will incentivise investors and market-makers to operate through registered domestic VDA exchanges. Additionally, it will also create a level-playing field between domestic and offshore VDA exchanges. This is particularly important as the probability of identifying non-compliance is negligible.
- The government may also consider using Annual Information Returns (AIR) together with the PMLA to increase compliance. Leveraging these policy tools can potentially achieve the same level of tracking that TDS currently offers, without the distortionary effects of a tax.
- Finally, the government should also consider engaging with registered exchanges as the extended enforcement arms for effectuating the TDS framework. User-centric compliance is limited in effectiveness because of pseudonymity of VDA investments and technical tools such as virtual private networks (VPN).

ENDNOTES

- 1 Cumulative threshold for TDS is INR 50,000 in a financial year.
- 2 It is useful to look at global estimates, as against national level estimates as many investors invest in VDAs via offshore exchanges.
- 3 A market-maker is an individual participant or a member of an exchange who buys and sells VDAs to provide liquidity and depth to the market and profits from the bid-ask spread differential.
- 4 Table 2 is reproduced from an earlier Esya Centre report (Gautam 2023C).
- 5 Top 4 percent of individuals earn above USD 170,050 annually in the United States.
- 6 Top 10 percent earn above GBP 50,270 annually in the United Kingdom.
- 7 Because VDA gains are tax exempt for private investors, one cannot deduct VDA capital losses. However, if one qualifies as a self-employed trader or a business, they may be able to deduct VDA capital losses to reduce their tax bill.
- 8 Less than top 5 percent of income earners in Canada fall in brackets above the 30 percent tax rate.
- 9 Top 10 percent of the income earners fall under the tax slab above 33 percent, subject to deductions on taxable income.
- 10 Less than top ten percent of income earners in South Africa fall in brackets above the 31 percent income tax rate.
- 11 Less than top two percent of income earners in Philippines fall in brackets above the 30 percent income tax rate.
- 12 The bill did not see the light of the day. However, it was sufficient to prompt changes in the market.
- 13 <https://coinswitch.co/building-blocks/our-proof-of-reserves/>
- 14 <https://www.coindesk.com/indices/cmi>
- 15 This is same as saying countries with higher GDP have lower growth rate and vice-versa.

REFERENCES

- Alm, J., McClelland, G., H., & Schulze, W., D. (1992). Why do People Pay Taxes? *Journal of Public Economics*, Vol. 48, Issue 1, 21-38
- Basel Committee on Banking Supervision. (2023). *Basel III Monitoring Report*. Basel
- Buch, C. (2023). Are Crypto-Assets a Threat to Financial Stability? Speech Prepared for the Seminar Series Women in Finance - University of Hohenheim. Hohenheim, Germany
- Claessens, S., Keen, M., & Pazarbasioglu, C. (2010). *Financial Sector Taxation: The IMF's Report to the G-20 and Background Material*. International Monetary Fund
- Cohen, K. J., Maier, S. F., Schwartz, R. A., & Whitcomb, D. K. (1979). Market Makers and the Market Spread: A Review of Recent Literature. *Journal of Financial and Quantitative Analysis*, 14(4), 813–835
- Crane, S. E., & Nourzad, F. (1984). Income Tax Evasion: Some Aggregate Empirical Evidence. Marquette University
- Crane, S.E., & Nourzad, F. (1987). On the Treatment of Income Tax Rates in Empirical Analysis of Tax Evasion. *Kyklos* 40(3):338–348
- Das, S. (2024). Online Gaming Industry Hopes GST Council Will Reconsider Decision to Levy 28% Tax. CNBC
- European Central Bank. (2012). *Virtual Currency Schemes* (ISBN: 978-92-899-0862-7). October 2012, ECB
- European Central Bank. (2015). *Virtual Currency Schemes – A Further Analysis* (ISBN: 978-92-899-0862-7). February 2015, ECB
- Gautam, V. (2023a). Impact Assessment of Tax Deducted at Source on the Indian Virtual Digital Asset Market. Special Issue No. 210, November 2023, Esya Centre
- Gautam, V. (2023b). Impact of VDA Tax Architecture on Risk Exposure of Indian Investors. Special Issue No. 209, February 2023, Esya Centre
- Gautam, V. (2023c). Virtual Digital Asset Tax Architecture in India: A Critical Examination. Special Issue No. 208, January 2023, Esya Centre
- Grossman, S. J., & Miller, M. H. (1988). Liquidity and Market Structure. *The Journal of Finance*, 43(3), 617–633
- Kumar, A., Fischer, C., Tople, S., & Saxena, P. (2017). A Traceability Analysis of Monero's Blockchain. *Cryptology ePrint Archive*, Paper 2017/338
- Li, M., C. (2023). Top Startups and Crypto Tools to Watch for Blockchain's Next Billion Users. *Digital Assets*, Forbes
- Logue, D., E. (1975). Market-Making and the Assessment of Market Efficiency. *The Journal of Finance*, Vol. 30, No. 1, pp. 115-123
- Misra, A. (2024). *A Taxmans Guide to Taxation of Crypto Assets*. Policy Research Unit, Department of Revenue, Government of India
- Press Information Bureau. (2024). Gross Direct Tax Collections for Financial Year (FY) 2023-24 Register a Growth of 18.74%. Ministry of Finance
- Shome, P., Aggarwal, P. K., & Singh, K. (1996). *The System of Tax Deduction at Source (TDS): Coverage, Functioning and Suggestions for Reform*. National Institute of Public Finance and Policy (NIPFP)
- Thiemann, A. (2021). *Cryptocurrencies: An Empirical View from a Tax Perspective*. JRC Working Papers on Taxation and Structural Reforms
- Wang, M., Ichijo, H., & Xiao, B. (2020). *Cryptocurrency Address Clustering and Labeling*. arXiv, Cornell University
- Webley, P., Robben, H., S., J., Elffers, H. & Hessing, D., J. (1991). *Tax Evasion: An Experimental Approach*. Cambridge University Press



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