ESYA centre

SPECIAL ISSUE

IMPACT OF VDA TAX ARCHITECTURE ON RISK EXPOSURE OF INDIAN INVESTORS

FEBRUARY 2023 | SPECIAL ISSUE NO. 209

Attribution: Dr. Vikash Gautam. *Impact of VDA Tax Architecture on Risk Exposure of Indian Investors.* Special Issue No. 209, February 2023, Esya Centre.

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

The Esya Centre is a New Delhi based technology policy think tank. The Centre's mission is to generate empirical research and inform thought leadership to catalyse new policy constructs for the future. More details can be found at www.esyacentre.org.

Author: Dr. Vikash Gautam is an *Adjunct Fellow* at the Esya Centre.

Acknowledgement: This report was prepared with knowledge support from *Taxsutra*

Layout & Design: Khalid Jaleel

CONTENTS

1. INTRODUCTION 4

2. DATA AND METHODOLOGY 6

3. EXCESS RISK EXPOSURE ON INDIAN CENTRALISED VDA EXCHANGES 7

4. EVIDENCE ON THE IMPACT OF EXCESS RISK EXPOSURE (MOBILE AND P2P ACTIVITY) 9

5. CONCLUSION 11

1. INTRODUCTION

The Union Budget on Feb 01, 2022, introduced three changes to the regulatory architecture in the Virtual Digital Asset (VDA) industry in India. These include (a) a levy of a flat 30 percent tax on gains from VDA trade applicable from 1st April 2022; (b) the provision disallowing the offsetting of losses applicable from 1st April 2022; and (c) a levy of 1 percent tax deducted at source (TDS) on transactions above INR 10,000 from 1st July 2022. In a recently published Esya Centre report "Virtual Digital Asset Tax Architecture in India: A Critical Examination", we show that **the main (unintended) impact of the tax policy on Indian VDA industry is offshoring of domestic business and liquidity to foreign exchanges**.

In this report, we extend the earlier work by examining – **how the tax architecture changed the risk exposure of investors trading on centralised VDA exchanges in the country. That is, we provide quantitative estimates of potential loss from business activities currently underway or planned in the VDA industry in India.** This is a pertinent policy problem with profound welfare implications, given the scale of investor participation in VDA markets.

We find that the risk exposure on Indian centralised VDA exchanges, relative to the foreign counterparts, increased by a only three and six percent following the Union Budget announcement/event and the implementation of the 30 percent tax on gains, respectively. That is, the chances of an investor incurring a loss on VDA trades on Indian exchanges increased only marginally, by three and six percent respectively. However, **the imposition of a one percent TDS more than doubled (increase by 105 percent) the risk exposure on domestic centralised VDA exchanges. That is, Indian investors became twice as vulnerable to losses on domestic VDA exchanges, relative to trading on foreign exchanges.**

It is important to deconstruct the impact of tax policy changes on risk exposure vis-à-vis the aggregate results on VDA exchange volumes, traction (i.e. user traffic on exchanges) and economic loss, that are highlighted in Box 1. In conventional market settings an increase in risk correlates to an increase in trading volumes.[i] However, the converse is true in the extant VDA market setting. That is, while trading volumes, traction and economic

i. Wang et al (2021) present a comprehensive discussion on the correlation between risk and return in financial markets.

gains are depressed, risk exposure is inflated. Importantly, the source of this 'imbalance' in risk-return tradeoff is systemic, and not random.

BOX 1: MAJOR RESULTS FROM PREVIOUS CENTRE REPORT TITLED "VIRTUAL DIGITAL ASSET TAX ARCHITECTURE IN INDIA: A CRITICAL EXAMINATION":

- There was a shift of cumulative trade volume of around USD 3,852 million (~INR 32 thousand crores) from domestic centralised VDA exchanges to foreign ones, during Feb-Oct 2022, following the announcement of a new tax regime in India.
- The implementation of the one percent TDS has had the most distortionary impact out of the three tax measures/events, as Indian VDA exchanges lost up to 81 percent of their trading volumes in four months (i.e. Jul-Oct 2022) following the levy.
- An estimated 17 lakh users switched from domestic centralised VDA exchanges to foreign counterparts, a trend visible starting Feb 2022 (i.e. following the Union Budget announcement).
- According to a sample of 5436 peer-to-peer (P2P) traders and industry estimates, the total trade volume contributed by Indians on foreign centralised VDA exchanges was to the tune of USD 9,670 million (INR 80 thousand crores) between Jul and Oct 2022.
- Finally, we estimate that the current tax architecture may lead to a loss of approximately USD 1.2 trillion (INR 99.3 lakh crores) of local centralised exchange trade volume in the next four years, relative to a pro-market scenario where (a) TDS on VDAs is at par with that on securities; (b) tax policy allows the provision to setoff losses; (c) taxation of gains from VDAs is internationally competitive.

2. DATA AND METHODOLOGY

We use data on three Indian centralised VDA exchanges and three foreign centralised VDA exchanges from CoinGecko, to estimate the impact of regulatory events (i.e., Budget announcement, levy of 30 percent tax on gains and levy of one percent TDS) on excess risk exposure of VDA exchanges.[ii] The sample period is between 16 Nov 2021 and 15 Nov 2022.

The methodological algorithm for deriving excess risk exposure for Indian centralised VDA exchanges relative to the foreign ones is discussed below:

- **The sample is divided into four periods – 16 Nov 2021 to 31 Jan 2022 (i.e. period 1); 1 Feb to 15 Nov 2022 (i.e. period 2); 1 Apr 2022 to 15 Nov 2022 (i.e. period 3); and 1 Jul 2022 to 15 Nov 2022 (i.e. period 4).**
- **A 30-day moving variance is constructed from the volume data of each of the centralised VDA exchange for each of the four periods.**
- **Coefficient of variation (CV) is constructed as the ratio of standard deviation (i.e. squared root of variance) and mean volume for each of the four periods. The CV, as a measure of risk exposure, offers comparability across different series.**
- **Finally, the excess risk exposure of Indian centralised VDA exchanges relative to foreign counterparts, due to tax policy change is derived in the following way:**

$$Excess\ risk\ exposure = \frac{CV_{post}^{India}}{\left(CV_{post}^{India} + CV_{pre}^{India}\right)} - \frac{CV_{post}^{foreign}}{\left(CV_{post}^{foreign} + CV_{pre}^{foreign}\right)}$$

where CV^{k}_{pre} is CV in periods 1, and CV^{k}_{post} is CV in periods 2, 3 and 4 for k = Indian and foreign centralised VDA exchanges. Excess risk exposure can be interpreted as the additional likelihood of a loss for investors trading through the Indian Centralised VDA exchanges, relative to the foreign

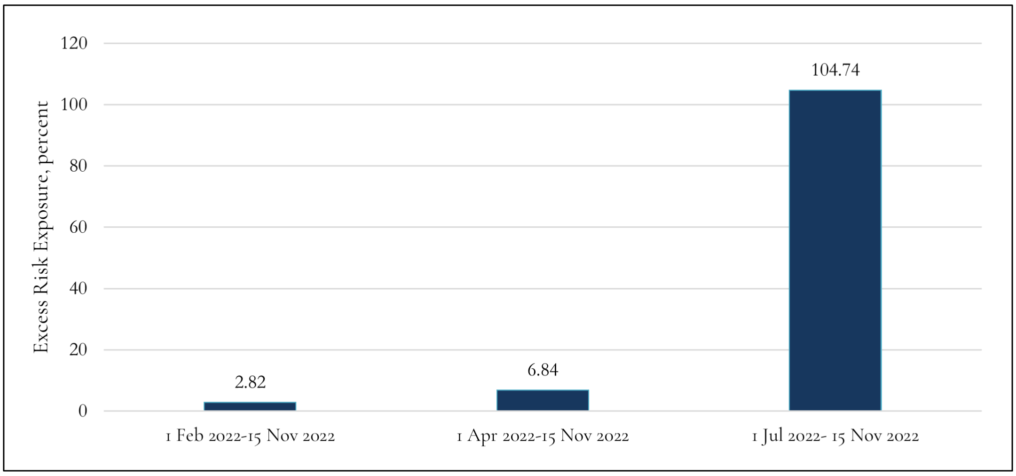
ii. The sample includes CoinDCX, WazirX and Zebpay as the three Indian centralised VDA exchanges, and Binance, CoinBase and Kraken as the three foreign centralised VDA exchanges.

ones, due to tax policy change.[iii]

3. EXCESS RISK EXPOSURE ON INDIAN CENTRALISED VDA EXCHANGES

Figure 1 presents the estimates of excess risk exposure on Indian Centralised VDA exchanges (relative to the foreign counterparts) due to the extant tax policy. Notably, **the risk exposure on Indian centralised VDA exchanges relative to the foreign ones doubled due to the imposition of a one percent TDS**. For the two other events, viz, the Union Budget announcement and the 30 percent tax on gains, excess risk exposure is nearly 2.8 and 6.8 percent.

Figure 1: Excess Risk Exposure on Indian Centralised VDA Exchanges



Source: Author calculation based on CoinGecko data.

iii. Future research may attempt a more rigorous statistical exercise in estimating excess risk exposure, by including plausible parameters related to investor behaviour and financial markets as additional controls. However, the current estimates are useful, especially from tax policy perspective, in comparing domestic VDA market conditions with foreign ones.

These results are important for two reasons:

- **TDS injects significant excess risk exposure in the domestic scenario. This is because one percent of liquidity is withdrawn from every VDA transaction worth INR 10,000 or more. This increases the required rate of return for a user to transact. Consequently, a search for excess return increases risk exposure.**
- **Policy changes can have profound effect on risk exposure. In fact, such changes inject systematic risks which cannot be diversified, as they are binding on all economic agents.**

4. EVIDENCE ON THE IMPACT OF EXCESS RISK EXPOSURE (MOBILE AND P2P ACTIVITY)

Estimates of mobile and peer to peer (P2P) activity across countries suggests a continued flight of Indian VDA users towards foreign exchanges, a trend that holds from our previous report:[iv,v]

- **According to data analytics tool data.ai, the app platforms of the leading Indian centralised VDA exchange lost over two million monthly active users (MAUs) between Feb 2022 (the announcement of TDS and Capital Gains on VDAs) and Dec 2022.[vi] In the same period, foreign exchanges gained over 1.5 million users from India.**
- **The abovementioned pattern is further corroborated via estimates for cumulative app downloads. Indians downloaded a cumulative total of 13.1 million foreign VDA apps until Dec 2022.[vii] Nearly 46 percent of these downloads took place in the period Feb-Dec 2022.**

> ***"LEADING INDIAN CENTRALISED VDA EXCHANGE LOST OVER TWO MILLION MONTHLY ACTIVE USERS (MAUS) BETWEEN FEB 2022 AND DEC 2022."***

iv. The current data on P2P VDA trading is a static cross-country snapshot. Further work using a longer period data is in progress. These initial estimates, however, are important in deducting the direction of impact of current VDA tax architecture in India.

v. P2P refers to a foreign platform (i.e. Binance, Kucoin, Huobi, Paxful, Localbitcoin) acting as an escrow service platform for fiat currency to VDA trade between two users, while holding the VDA component of this trade. In this way, P2P trading can be considered a proxy for deposit and withdrawal flows in INR on foreign platforms, without the need for these platforms to maintain a local bank account. This makes P2P trading a low cost, low friction, and often only method for Indian VDA users to onboard foreign platforms.

vi. For this exercise, foreign VDA exchanges include Huobi, Kucoin, and Metamask, while Indian VDA exchanges include CoinDCX, CoinSwitch and WazirX.

vii. As above, this data is collected from data.ai.

- **Nearly a fourth of all P2P trading of VDAs in exchange for currencies including INR, AED, EUR, GBP, NGN, PHP, UAH, USD, and VND, was for INR as per a sample of 33,399 P2P trades between the 19 Nov 2022 and 19 Dec 2022.[viii] The P2P volumes of Indian trades is approximately INR 3,360 crores (or USD 422 million).**

- **It is worth noting that India's P2P volume remined more than EUR and GBP volume combined in this period. However, the average transaction by Indian traders was only INR 20,000, suggesting many such traders retail VDA users.**

> ***"THE P2P VOLUMES OF INDIAN TRADES IS APPROXIMATELY INR 3,360 CRORES (OR USD 422 MILLION)."***

viii . The sample consists of 30-days volume of traders (in Bitcoin or BTC) between 19 Nov and 19 Dec 2022, by scraping their P2P offerings on foreign VDA platforms multiple times in a day for currencies including (Indian Rupee (INR), United Arab Emirates Dirham (AED), Euro (EUR), Great Britain Pound (GBP), Nigerian Naira (NGN), Philippine Peso (PHP), Ukrainian Hryvnia (UAH), USA Dollar (USD), and Vietnamese Dong (VND)). This ensures a representative sample of P2P traders. However, we consider only the latest entry (for a given offering advertisement) by a trader to avoid duplication. In the rare case of a P2P trader submitting large orders sporadically, this method may overestimate P2P volume. This particular issue may be considered for future research.

5. CONCLUSION

The current regulatory architecture, especially the provision of one percent TDS, introduces the fundamental problem of excess risk exposure at the core of transactions in the VDA market. In conclusion, it is important to highlight two issues from the standpoint of financial and technical proliferation:

- **The last decade has seen proliferation of several VDA instruments such as cryptoassets, central bank digital currencies (CBDCs), non-fungible token (NFTs) and Web 3.0 Gaming, etc. While each of these have their own niche characteristics in terms of risk-return tradeoffs and end-use, their design and adoption are impacted by government policies. An added complication is their cross-border nature, which simultaneously limits government oversight, and leads to cautionary stances. The existence of centralized VDA exchanges partly solves for associated uncertainties. That is, such exchanges (a) offer a platform to rive adoption, (b) generate systemic information on user behaviour, (c) generate awareness among potential users for matching their risk appetite with appropriate market exposure, (d) maintain global competitiveness and therefore minimize opportunity loss to foreign jurisdictions, and (e) serve as the first point for exercising/ implementing regulatory oversight. Governments must recognize these strengths and design informed interventions.**

- **The global financial marketplace has a very broad range of investment instruments designed to address different types of risks. An investor concerned about asset-type or maturity risk can adjust her portfolio by changing the composition of assets in her portfolios. Therefore, from a welfare standpoint it is of utmost importance to establish policy mechanisms that allow investors to choose appropriate instruments, that best aligns with her risk appetite. The extant tax policy in India distorts this design principle. A plausible correction is to peg TDS levels analogous to those of the securities transaction tax (STT), as discussed in the preceding research.**

B-40 First Floor
Soami Nagar South
New Delhi - 110017
contact@esyacentre.org
www.esyacentre.org

ESYA centre