Decentralized Finance (DeFi)

How blockchain-based finance works and how it is treated for tax purposes

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Agenda

1. What is Decentralized Finance (DeFi)?

2. How are lending transactions on marketplaces like AAVE taxed?

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed?

4. How is the provision of insurance coverage on Nexus Mutual taxed?

5. What are the tax consequences of DeFi "rug pulls"?

6. What should we know about DeFi regulation in the EU?

Goals for attendees

- To understand how DeFi and a few important types of protocols work
- To start thinking how these would be treated tax-wise in your own jurisdiction

DeFi Slate
@defislate

Did you know the @RariCapital team isn't old enough to drink legally in the USA yet has built & deployed smart contracts that hold millions on millions of TVL?

Assumptions

- We will only be dealing with individuals engaging in DeFi outside of the scope of a business activity, not with companies or other types of taxpayers.

1. What is Decentralized Finance (DeFi)?

"the rise of an ecosystem of financial services, known as decentralised finance, or DeFi, deserves sober consideration. It has the potential to rewire how the financial system works, with all the promise and perils that entails. The proliferation of innovation in DeFi is akin to the frenzy of invention in the early phase of the web. At a time when people live ever more of their lives online, the crypto-revolution could even remake the architecture of the digital economy."

The Commodity Futures Trading Commission chief has declared unlicensed decentralized finance (DeFi) platforms illegal ==after searching for the term on Google.==

Commissioner Dan M. Berkovitz of the U.S. CFTC made the comments during a June 8 keynote titled "Climate Change and Decentralized Finance: New Challenges for the CFTC."

9

1. What is Decentralized Finance (DeFi)?

- Offering of traditional financial services not through centralized actors such as banks and insurance companies, but based on smart contracts ("going bankless")
  - Volume (total value locked; TVL) of approx. USD 254 billion at all-time high
  - Still a bit experimental
  - Due to network effects, strong concentration on the Ethereum platform
  - Lots of analysis tools (*e.g.,* https://dune.com/browse/dashboards)
- <u>Pros</u>: Access on a pseudonymous basis without KYC/AML; access daily, 24/7, from anywhere in the world; no need to trust an intermediary; no need for approvals; no need to fill out forms; transparency of the smart contract on the blockchain
- <u>Cons</u>: Risk of bugs and rug pulls; high gas costs on Ethereum (but various L1s and L2s as competitors)

2. How are lending transactions on market-places like AAVE taxed?

- AAVE (https://app.aave.com)
  - Decentralized marketplace for capital, where lenders can lend crypto assets (against interest) and borrowers can borrow crypto assets (against interest)
  - Loans are not established between individual users or addresses; rather, lenders lend to the platform and borrowers borrow from the platform (thus, not peer-to-peer lending but peer-to-protocol lending)
  - The applicable interest rate – depending on the crypto asset – is determined algorithmically by supply and demand, and changes constantly; interest is calculated in each block, *i.e.,* approx. every 12 seconds
  - There are no maturities, receivables can be withdrawn at any time and liabilities can be repaid at any time
  - Crypto assets that can be lent and borrowed are for example Ether (ETH), USD Coin (USDC), Wrapped Bitcoin (WBTC), Tether (USDT) and Dai Stablecoin (DAI)

2. How are lending transactions on market-places like AAVE taxed?

- A user who lends crypto assets to the protocol (*e.g.,* DAI) receives a receipt token (*i.e.,* aDAI). When the user sends the receipt token (also called aToken) to the protocol, the user gets the original amount of crypto assets lent to the protocol plus the accrued interest.

- Borrowers must provide security exceeding the loan amount (over-collateralization), *e.g.,* 150%. The security is liquidated if its value falls below a threshold. In certain cases, no security is necessary (*e.g.,* so-called flash loans).

2. How are lending transactions on market-places like AAVE taxed? – USA

- Currently, the IRS's guidance is based on the premise that all virtual currency transactions are "property" transactions.

- If a virtual currency is viewed as an exchange for another virtual currency that represents "value that functions as a medium of exchange," the transaction will be taxable.

- Is a DeFi loan a "loan" for US tax purposes?
  - Is it an obligation to pay money (generally treated as loan) or an obligation to deliver property (generally not treated as loan)?
  - What about other factors for a valid loan such as fixed principal, fixed maturity date, right to enforce payment etc.?
  - If it is not a loan, is it a taxable exchange of property? Each DeFi transaction would be interpreted separately.

2. How are lending transactions on market-places like AAVE taxed? – USA

- What are the tax implications for the lenders?
  - In Aave, lenders deposit their tokens (*e.g.,* DAI) and receive aTokens (*e.g.,* aDAI).
  - aTokens do not represent any value as they merely represent the right to reclaim the originally deposited tokens. Thus, there should not be any tax on the exchange.
  - Any additional tokens received as interest (including a cut from AAVE's flash loans) would be taxable as ordinary income.

2. How are lending transactions on market-places like AAVE taxed? – USA

- What are the tax implications for the borrowers?
  - If the transaction is not treated as a loan, the collateral posted for tokens on a DeFi platform may be treated as an exchange.
  - Borrower should receive the same collateral back to avoid the exchange treatment.
    - Any sale of collateral upon a triggering event may be treated similar to foreclosure. The borrower would be treated as selling the collateral for the amount of debt received in exchange for the collateral.
  - The transaction may qualify as a tax-free securities lending transaction.
    - Refer to Lummis-Gillibrand bipartisan Responsible Financial Innovation Bill introduced on June 7, 2022.

2. How are lending transactions on market-places like AAVE taxed? – Germany

- What are the tax implications for the lenders?
  - Lenders retain economic ownership of the crypto assets lent.
  - Interest on lending of (crypto) assets:
    - does not qualify as (preferentially taxed) income from capital investment, since there is no capital claim;
    - qualifies as income from services taxed at marginal rates (sec. 22 (1) s. 1 no. 3 GITA)
  - Timing of taxation and valuation of interest income: time of inflow (credit to "account"); subsequent value difference might only lead to gain/loss if sold. Loss cannot be balanced against the interest.
  - Lending by itself does not lead to a trading business.

2. How are lending transactions on market-places like AAVE taxed? – Germany

- What are the tax implications for the borrowers?
  - Interest paid to the platform might be tax deductible, if the loan was made in connection with the generation of income.
  - The posting of the collateral should not result in any tax event, as the economic ownership should remain with the borrower.
  - In the case of a liquidation of the collateral, the loss may be tax deductible if the borrowing was related to the generation of income.

2. How are lending transactions on market-places like AAVE taxed? – Switzerland

- Swiss civil law
  - Is there a lending contract and, if yes, who is the counterparty (the protocol, the community of users, the lender)? The Lender cannot lend "to" the protocol and cannot receive "interest" from the protocol. The protocol itself has no legal personality and cannot be a counterparty.
  - Minority view in Swiss law: Participation in a blockchain results in a comprehensive system agreement with all users. Anonymity does not prevent the conclusion of a contract.

- Deposit of tokens
  - No transfer of economic ownership. The Lender has a right to return of identical cryptocurrencies. The deposit should not constitute a taxable event.

- aTokens
  - Represent a claim for return of deposited cryptocurrencies. Retransfer of aTokens against deposited cryptocurrencies should not constitute a taxable event.

2. How are lending transactions on market-places like AAVE taxed? – Switzerland

- Liquidation of collateral
  - Capital loss in private assets should not be tax deductible.

- Loan?
  - Payment tokens are treated like fiat currency for Swiss tax purposes.
  - Taxable interest from credit balances (art. 20(1)(a) FTA).
  - Swiss WHT on interest from bonds issued by resident taxpayers (art. 4(1)(a) FWHTA). But who is the contractual counterparty and the Swiss borrower respectively?
  - Interest deduction subject to statutory limitations (art. 33(1)(a) FTA).

- Renting or leasing (same tax treatment as securities lending)?
  - Taxable income from renting or leasing (art. 20(1)(d) FTA).
  - Lending fee not subject to Swiss withholding tax.
  - No deduction at the level of the Borrower.

2. How are lending transactions on market-places like AAVE taxed? – Switzerland

- Principle of factuality and economic approach to the concept of income?
  - Taxable remuneration for non-exercise of a right (art. 23(d) FTA).
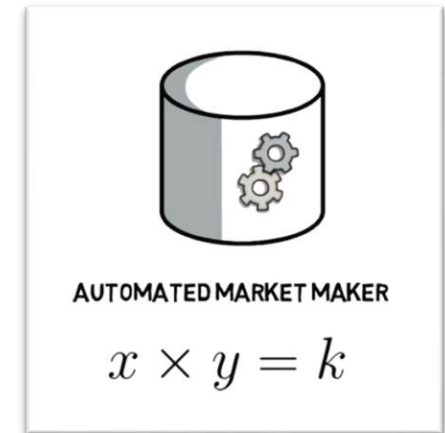 - No deduction at the level of the Borrower.

2. How are lending transactions on market-places like AAVE taxed? – Brazil

- Cryptocurrency transactions in Brazil are generally subject to capital gain taxes:
  - Tax rate for natural persons is 15%-22.5%, depending on amounts involved.
  - Token transactions may also be taxable if profits exceed BRL 35,000 (approx. USD 6,700) per month.
- Lending transactions in Brazil are subject to *Imposto sobre Operações Financeiras* (IOF)
  - IOF rate ranges from 0.0082% to 3% per year, depending on involved parties and amounts.
- Lenders in Brazil are also subject to income tax
  - Natural persons taxed at 7.5%-27.5% rate
- Current understanding of tax treatment for lending and crypto transactions in Brazil is not definitive and being challenged.
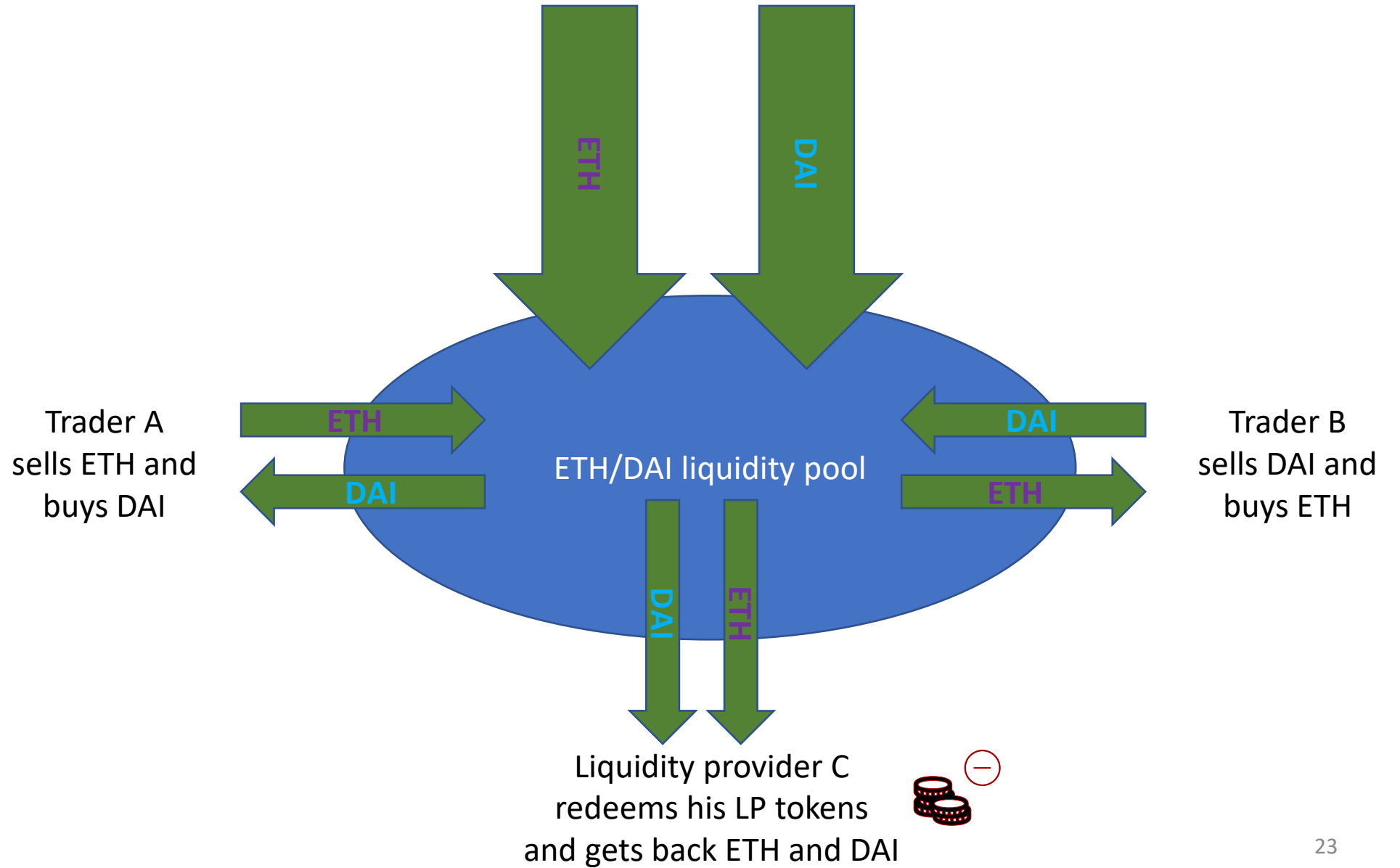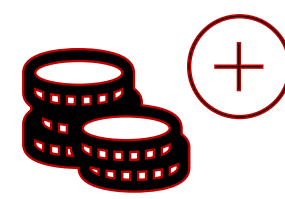
3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed?

Uniswap (https://app.uniswap.org)

Various liquidity providers (LPs) provide ETH and DAI on 1:1 value basis and get LP tokens

ETH

DAI

Trader A sells ETH and buys DAI

ETH

DAI

ETH/DAI liquidity pool

DAI

ETH

Trader B sells DAI and buys ETH

DAI

ETH

Liquidity provider C redeems his LP tokens and gets back ETH and DAI

23

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed? – Germany

- Economic ownership of crypto assets remains with liquidity provider
  - Reasoning: liquidity provider keeps the risk of losses; provider can terminate the liquidity provision at any time
  - Consequence: rewards for the provision of liquidity are taxable income from other services; there might (only) be sale transactions as far as the composition of the token pair has changed
- Sale of crypto assets
  - Reasoning: liquidity provider receives a different token (LP token) which represents the share in the pool
  - Consequence: private sale transaction that is taxable if holding period did not exceed one year
  - Ongoing rewards are taxable income from other services
  - Trading back the LP token is again to be treated as a private sale transaction

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed? – USA

- Under the current IRS guidance, an LP token would be treated as a separate "virtual currency" as it represents value that functions as a medium of exchange.

- The exchange of tokens for LP tokens would likely result in a taxable exchange.

- Similarly, the exchange of LP token for tokens at the time of its redemption would also result in a taxable exchange.

- Would the taxpayer prefer this treatment?
  - Current ordinary income treatment with respect to any transaction fee accumulated inside the pool.
  - Capital gain/loss treatment as against ordinary income treatment. Potential for lower tax rate.
  - LP tokens can be exchanged for other tokens, used as a collateral for a loan, provide bridge financing and earn interest, etc. Each such transaction should be analyzed for its own tax treatment.

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed? – Brazil

- Exchange of ETH and DAI for LP tokens is subject to capital gain tax:
  - Rate is 15% to 22.5% for natural persons who profit more than BRL 35,000 (approx. USD 6,700) per month from token-for-token exchanges.
- Profits from providing liquidity are subject to income tax:
  - Rate for individuals is 7.5% to 27.5%.
- Current understanding of tax treatment for LP transactions in Brazil is not definitive and is being challenged.

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed? – Switzerland

- Swiss civil law
  - The reference to Uniswap Labs, which stands as the developer of the protocol, is hardly suitable to bring about a conclusion of a contract.

- Participating loan?
  - Deposit of cryptocurrencies pairs: No transfer of economic ownership.
  - LP token:
    - Claim for transfer of cryptocurrencies pairs.
    - Right to a share in the transaction fees: Taxable income from movable assets (art. 20(1) FTA).
    - Retransfer of LP token against cryptocurrencies pairs should not constitute a taxable event.

3. How is the provision of liquidity on Decentralized Exchanges (DEXes) like Uniswap taxed? – Switzerland

- Sale of cryptocurrencies and acquisition of forward/financial instrument
  - Principle of factuality and economic approach to the concept of income.
  - Deposit of cryptocurrencies pairs: transfer of economic ownership. LP has no right to return of identical cryptocurrencies. The deposit should constitute a taxable event (no practical significance).
  - LP token:
    - The exchange of deposited cryptocurrencies pairs against the LP token should constitute a taxable event and an acquisition of cryptocurrencies pairs (forward/financial instrument with a dynamic basket as underlying).
    - Claim for transfer of cryptocurrencies pairs.
    - Right to a share in the transaction fees: Taxable income from movable assets (art. 20(1) FTA).
    - Retransfer of LP token against cryptocurrency pair should not constitute a taxable event.

4. How is the provision of insurance coverage on Nexus Mutual taxed?

Nexus Mutual (https://app.nexusmutual.io/cover)

4. How is the provision of insurance coverage on Nexus Mutual taxed? – Switzerland

- Swiss civil law:
  - A smart contract itself is neither a contract nor is it smart. A smart contract is a computer program that executes only what is written in its program.
  - Is there a contract and, if yes, who is the counterparty (the protocol, the community of users, the capital pool, the Risk Assessor)? The Cover Holder cannot insure "with" the protocol and cannot pay "cover premiums" to the protocol. The protocol itself has no legal personality and cannot be a counterparty.
  - Minority view in Swiss law: Participation in a blockchain results in a comprehensive system agreement with all users. Anonymity does not prevent the conclusion of a contract.
  - Nexus Mutual is run entirely by its members. Only members can decide which claims are valid: A Decentralized Autonomous Organization (DAO) could be considered as a contractual construct between all participants or even as a simple partnership, so that a contractual agreement and thus a counterparty is given.
- Nexus Mutual cover protects against loss of funds (i.e. loss of tokens), not loss of value.

4. How is the provision of insurance coverage on Nexus Mutual taxed? – Switzerland

- Principle of factuality and economic approach to the concept of income
- Insurance-like product (at discretion)
- Cover Holder
  - Cover premium (NXM): no tax deductible expense (regarded as living expenses because private movable capital asset leads to tax-free capital gains (art. 32(1) FTA))
  - Discretionary payout: should be regarded as tax-free indemnity (art. 16(1) FTA)
- Risk Assessor
  - Share of cover premiums (NXM): should be treated as other taxable income (art. 16(1) FTA).
  - Burning of the staked NXM: no tax deductible loss

4. How is the provision of insurance coverage on Nexus Mutual taxed? – USA

- It is community driven governance and finance – also known as a Decentralized Autonomous Organization ("DAO"). DAOs are generally business entities for US tax purposes and would likely be characterized as corporations (assuming all its members have limited liability).

- Any person can become Nexus Mutual member by buying NXM in exchange for ETH. Members can use NXM to purchase insurance coverage and/or to participate in the governance process (*e.g.,* assessing risk, voting on any changes to the protocol, determining the price of coverage etc.).

- The purchase of NXM in exchange for ETH would be taxable exchange as NXM represents value that functions as a medium of exchange.

- Gain or loss will be based on the taxpayer's basis in ETH and FMV at the time of exchange.

4. How is the provision of insurance coverage on Nexus Mutual taxed? – USA

- A non-US DAO such as Nexus Mutual could be treated as a passive foreign investment company (PFIC) as its crypto assets would primarily be characterized as passive assets. US members' PFIC income pick-up and reporting would be very complicated. It could result in ordinary income treatment for the sale of NXM tokens.

4. How is the provision of insurance coverage on Nexus Mutual taxed? – USA

- Any reward received by risk assessors would likely be characterized as ordinary income at the time of such receipt.

- Is the amount treated as a payment for insurance coverage deductible?
  - It depends on whether the expense is treated as ordinary (common and accepted in the business) and necessary (expenses that are appropriate and helpful in the business.

4. How is the provision of insurance coverage on Nexus Mutual taxed? – Brazil

- Capital gains tax would be levied upon the exchange of ETH for NXM.
- Insurance premiums are generally subject to a federal tax called the *Contribuição Social sobre o Lucro Líquido* (CSLL), which is levied on the profits of legal entities.
- The tax rate for insurance premiums is generally 9%, but it may be reduced to 7.5% for certain types of insurance companies that operate in specific sectors, such as health, life, and personal accident insurance.
- Insurance premiums received by a natural person may be considered taxable income, depending on the specific circumstances of the coverage and the risks being insured.

4. How is the provision of insurance coverage on Nexus Mutual taxed? – Germany

- Although the provision of token takes place in an insurance context, the taxation is quite similar to "normal" staking.

- Rewards for the warrantors of smart contracts are to be treated as income from other services; if a hack occurs, a loss of the staked token should be accounted for as expenses related to the income from other services, *i.e.,* it should be deductible.

- Rewards for voting success are income from other services.

- Insurance premiums paid should be considered as expenses if the insurance is related to income, *i.e.,* if the expenses incurred to acquire, secure and maintain income. Insurance benefits in turn would then generally qualify as taxable income.

5. What are the tax consequences of DeFi "rug pulls"?

rekt

1. **Ronin Network – REKT** *Unaudited*
   $624,000,000 | 03/23/2022

2. **Poly Network – REKT** *Unaudited*
   $611,000,000 | 08/10/2021

3. **BNB Bridge – REKT** *Unaudited*
   $586,000,000 | 10/06/2022

4. **Wormhole – REKT** *Neodyme*
   $326,000,000 | 02/02/2022

5. **BitMart – REKT** *N/A*
   $196,000,000 | 12/04/2021

Grap.finance @GrapFinance · Dec 28, 2020
Next time, take care of your own shit.
@CoverProtocol @chefcoverage

etherscan.io/tx/0xc2fd5094c...

1. No gains.
2. The Obtained Funds from LP has been returned to COVER.

lilOTTERoss (9,9) 🐚 Yesterday at 9:23 PM
sir this isnt a corporation with customer support. this is defi... dyor or ngmi

5. What are the tax consequences of DeFi "rug pulls"? – Switzerland

- LP tokens received against deposit of cryptocurrencies are worthless due to fraudulent actions.

- Capital loss has no practical significance, since capital gains are tax-exempt and capital losses are not tax-deductible.

- Principle of factuality and economic approach to the concept of income: Concept of income is based on what has really happened.

5. What are the tax consequences of DeFi "rug pulls"? – Switzerland

- Two scenarios:
  - Asset transfer is not regarded as executed for Swiss tax purposes if actually contested with a substantial retransfer probability: The claim for retransfer of deposited cryptocurrencies neutralizes the asset disposal, which is why no capital loss occurred.
  - Asset transfer is regarded as executed for Swiss tax purposes if not actually contested with a substantial retransfer probability: Capital loss is realized upon asset disposal. In case of subsequent contestation and reversal, the tax assessment (*i.e.,* the recognition of capital loss) is corrected in the retroactive revision procedure. The later retransfer of the deposited cryptocurrencies neutralizes the earlier asset disposal, which is why no capital loss occurred.

5. What are the tax consequences of DeFi "rug pulls"? – USA

- Can an investor claim a deduction or capital loss for cryptocurrency contributed to a liquidity pool in exchange for LP tokens in the case of a "hard pull" by developers?
  - Depends on several factors, including the characterization of LP tokens, criminal prosecution of the developer, amount of loss (does it exceed standard deduction), etc.

- Are LP tokens treated as a security for tax purposes?
  - If yes, taxpayers may consider worthless securities deduction as a capital loss.
  - The term security for US tax purposes generally includes stock in a corporation, interest in a widely held partnership or trust, certain notes, bonds, debentures or other evidences of indebtedness, notional principal contracts, certain derivates, etc.

5. What are the tax consequences of DeFi "rug pulls"? — USA

- Is theft loss deduction possible?
  - Generally, not available after 2017 (until 2025) if the loss is treated as a personal theft loss, which is available only for a federally declared disaster.
  - Rev. Rul. 2009-9: Any investment loss should be treated as a business theft loss (*e.g.,* in the case of ponzi schemes) and not a personal theft loss. Some taxpayers may be able to claim it as an itemized deduction.

- If nothing else works, a taxpayer may consider selling the worthless LP token for a loss to claim capital loss.
  - May not be beneficial for some taxpayers if they do not have corresponding capital gain to offset.
  - Capital loss can offset only up to $3,000 ordinary income.

5. What are the tax consequences of DeFi "rug pulls"? – Germany

- Crypto assets will still be property of the investor (no „theft"); nonetheless, the investment is essentially worthless.

- Respective losses are unrealized until the tokens are disposed of (act of realization).

- Tax relevant losses require that the holding period did not exceed one year; losses might only be offset of are only can be only offset with profits from the sale of (crypto) assets, not with other income, *e.g.,* from services.

5. What are the tax consequences of DeFi "rug pulls"? – Brazil

- Capital gains or losses from sale or exchange of cryptocurrency are subject to capital gain taxes
  - Rate for natural persons is 15%-22.5%, depending on the amounts involved.
- Investors who suffer losses in a DeFi rug pull may be able to claim capital loss deduction to offset capital gains in the same tax year.

6. What should we know about DeFi regulation in the EU?

- On 5 October 2022, the EU moved forward with the proposed and long-awaited EU regulation on crypto-assets ("MICA").
  - MICA intends to support innovation while ensuring investor protection and market integrity by building a single European crypto market,
  - MICA applies to entities that issue crypto-assets or that provides services related to crypto assets within the EU.
  - MICA is a bespoke regime that is supposed to catch all crypto-assets not yet covered by existing EU regulation.

6. What should we know about DeFi regulation in the EU?

- MICA provides for a broad definition of crypto-assets: "a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology."

- MICA is a first step in the regulation on crypto-assets in the EU, but is not broad enough and does not cover DeFi. However, MiCA will apply in some cases to:
  - intermediaries that perform their services as part of wider DeFi arrangements; for example, if a crypto asset is issued to the public on a decentralised basis, the operator of the trading platform must produce the white paper for the crypto asset;
  - DEXs that carry out the service of an exchange of crypto assets and operate a trading platform for crypto assets.

Questions?