DISCUSSION

Reaching for Yield in Decentralized Financial Markets

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Reaching for Yield . . .

> "*the propensity to buy riskier assets in order to achieve higher yields*"
> (Becker & Ivashina, 2015, JF).

<u>Intuition</u>:
Investors will go for those assets with higher 'promised' yields, potentially ignoring (hidden) risks. $\Rightarrow$ May result in negative risk-adjusted returns.

- ▶ Exists in markets for *bonds*, *asset-backed securities* (Efing, 2020, RoF), or *housing* (Korevaar, 2023, JFE). **RQ**: <u>What about RFY in DeFi markets?</u>

. . . in Decentralized Financial Markets

Pancakeswap is listed as DEX/AMM protocol, but offers **YF** function.

Yield Farming (**YF**) $\approx$ AMM LP + Staking LP Tokens.

Pancakeswap offers incentive, *yield*, to provide liquidity to certain token pairs to the AMM.
Yield is paid as newly minted governance token (CAKE): $N^{\text{cake}} \times P_t^{\text{cake}}$.

Products

Our current list of products

Here are the articles in this section:

🔵 Exchange	🚜 Yield Farming
🍊 Syrup Pools - Stake CAKE	👤 Farm Auctions
💹 Revenue Sharing	📑 IFO (Initial Farm Offering)
🟦 CAKE Bridging	💜 Simple Staking

The paper in a nutshell

What do we get from this paper?

- DeFi **YF** data as laboratory for complex (retail) investment products.
- Evidence on YF performance and "Reaching for Yield" behaviour in DeFi ecosystem.

Strengths

- Clean conceptual framework for decomposing **YF** returns.
- Meticulous data work to create daily panel of yield farm metrics.

Weaknesses

- Validity of results beyond the *Pancakeswap* setup (and old data).
- Too short discussion on how to mitigate RFY behaviour in DeFi markets.

General comments

Mature empirical paper (+appendix) to learn about **YF** risk & returns.

Not much to add in terms of empirics – just providing some perspective.

Guiding discussion questions

1. **"Is it new?"** – *Positioning of the paper.*

2. **"Is it correct?"**
   a *How complex is yield farming?* (assumptions)
   b *Where is the risk in yield farming?* (intuition)
   c *How relevant is Pancakeswap?* (data)

3. **"Is it important?"**
   a *Are the results specific to this setting?* (validity)
   b *What should we do about RFY in DeFi?* (implications)

Comment 1: *Positioning of the paper.*

1. **DeFi & Yield Farming**: There are many papers studying AMM LP returns, *Pancakeswap* adds 'liquidity incentive' on top of AMM LP to study fund flows after investors observe *additional yield*. $\rightarrow$ **YF** as distraction from AMM LP?

2. **Literature**: CS literature and some WPs analyze (other) DeFi yield strategies, e.g., cross-protocol LP token staking or liquidity mining in lending protocols.
   - <u>Overview</u>: Xu/Feng (2023, IEEE TNSM) "Reap the Harvest on Blockchain: A Survey of Yield Farming Protocols." – Cousaert/Xu/Matsui (2022, IEEE Xplore) "SoK: Yield Aggregators in DeFi."
   - <u>Model & Evidence</u>: Li/Naik/Papanicolaou/Schönleber (2023, WP). "Yield Farming for Liquidity Provision." – Park/Stinner (2023, WP) "Phantom Liquidity in Decentralized Lending."

3. **RFY** – New evidence? DeFi YF markets are new, but quite small.
   $\rightarrow$ **Key question**: *What are the differences to other markets?*
   - Granular TX-level data, low switching cost, and decentralized governance to set **YF** parameters. $\rightarrow$ Discussion could be expanded.
   - Studying yield farms as unregulated, complex financial product is interesting.

Comment 2a: *How complex is yield farming?* (assumptions)

1. **Financial expertise**: Do investor understand the following risks?

   ▶ **Impermanent loss**: 'difference between HODL vs LP'
   ▶ **Capital gains**: token price volatility & price impacts.
   ▶ **Farm yield**: interplay of farm yields & staked liquidity flows.
   ▶ **Trading fee revenue**: trading volume and pool liquidity dynamics.

   ⇒ Complexity is in understanding risk-adjusted returns after fees and token movements.

2. **Technical expertise**: Web3 wallets & application interfaces; AMM functions/contract, GAS fees and waiting time (slippage). Starting to farm yield is just a few clicks away!

   2.1 Create Binance Chain wallet (or BSC configured MetaMask) and obtain token pair & BNB.
   2.2 Go to pancakeswap.finance and connect wallet.
   2.3 Functions: 'Add liquidity'; receive 'LP token'; 'stake LP token'.
   2.4 Wait and withdraw. Spend!

YF ∼ dangerous combination of <u>accessible</u> but financially <u>hard to navigate</u> investment product!

Comment 2b: *Where is the risk in yield farming?* (intuition)

Farm yield is on top of AMM LP returns. → **What is the downside?**

1. Both, complexity and losses, mainly stem from **IL** & **CG** in low liquidity pools, which need to be compensated with high yields to attract liquidity.

Panel A: Daily Component	Mean
Full Sample	
Capital Gains	-0.8127
Impermanent Loss	-0.3373
Trading Fees	0.0974
Farm Yields	0.9538

Why don't investors follow more stable yield strategies? (e.g., lending, liquid pools)

<u>Explanation</u>: salience theory!? (∼ investors simply like highest advertised yield)

2. **Where does yield come from?** Yield is paid in terms of CAKE governance tokens – newly minted (out of thin air?) every block. CAKE has utility within *Pancakeswap* ecosystem (voting, product access, initial farm offering).
What determines demand for CAKE and eventually price dynamics?

Comment 2c: *How relevant is Pancakeswap?* (data)

October 20th 2023: 103 farms on pancakeswap.finance/farms;
TOP 50 farms combined $\sim$ \$147 million *staked liquidity*.
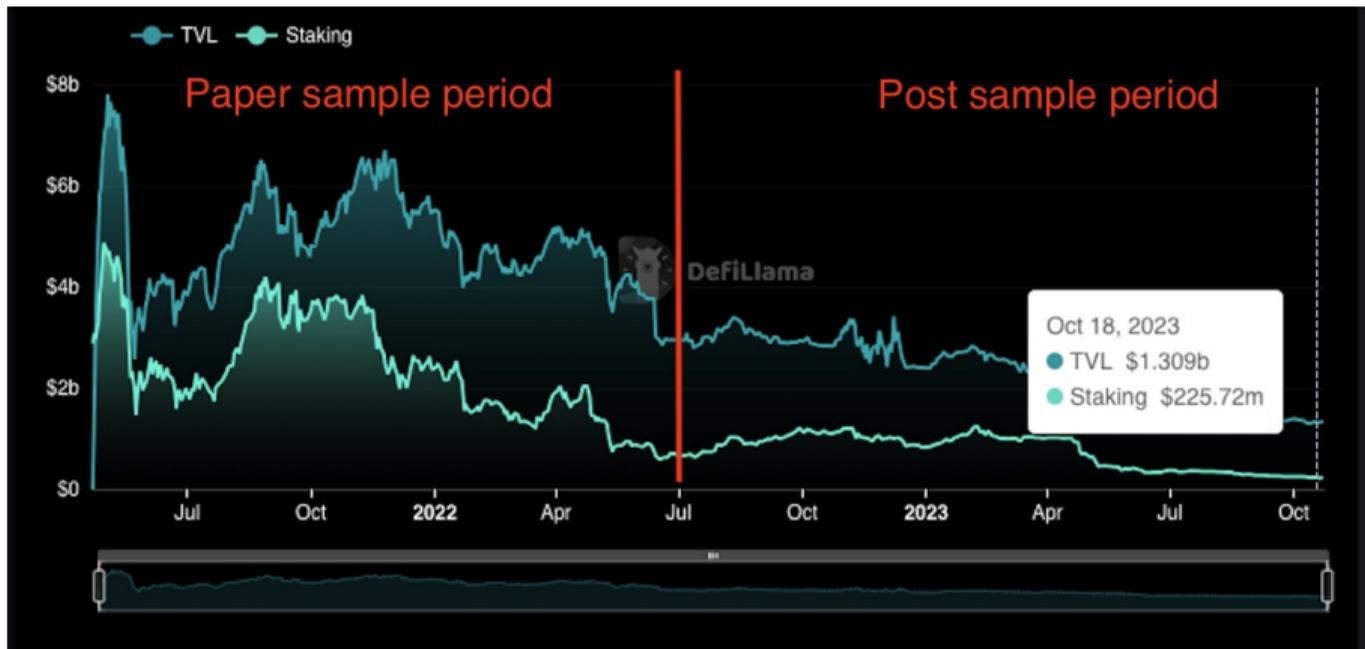
Comment 3a: *Are the results specific to this setting?* (validity)

How representative is Pancakeswap of **YF** activities?

▶ 'Yield Farming' could mean different things (cf. defillama.com):
  ▶ **Yield protocols**: Protocols that pay you a reward for your staking/LP on their platform.
    → Combined TVL $\sim$ \$3 billion.
  ▶ **Yield aggregators**: Protocols that aggregated yield from diverse protocols. $\sim$ DeFi Asset Manager?
    → Combined TVL $\sim$ \$0.9 billion.

  Terminologies and strategies in DeFi are all over the place.

▶ **Do we observe similar salient yield chasing in other platforms?** Ethereum (e.g., Uniswap AMM LP + staking platform) not used because of high TX/GAS costs.
  → Would we expect different results? (e.g., more concentration among farms?)

▶ **Simple AMM LP returns** (yields) may also be advertised and compete for liquidity.
  → Can we observe how investors decide between AMM pools w/o YF liquidity incentive? Is there RFY in AMM LP without YF?

Comment 3b: *What should we do about RFY in DeFi?* (implications)

Information disclosure helps investors to stay away from salient RFY behaviour.

1. **Does more information disclosure help investors?**
   - ▶ YES, it works. Evidence provided in this paper!

2. **Do CAKE (governance) token holders have incentive to disclose risks?**
   - ▶ Good question! If YES, then why don't we see this on *Pancakeswap*? ∼ Automated reporting difficult?
   - ▶ Not necessarily! Disclosing risk-related information may result in less liquidity overall, if it pushes away high-yield-loving investors, resulting in less staked liquidity.

3. **Do third-parties have incentive to provide additional information?**
   - ▶ YES, if they get paid (e.g., YieldWatch.net).

Summary

Nice one! Comprehensive paper on DeFi investment strategies with attention to detail.

Discussion points:
- ▶ Comment 1: *Positioning of the paper.*
- ▶ Comment 2a: *How complex is yield farming?* (assumptions)
- ▶ Comment 2b: *Where is the risk in yield farming?* (intuition)
- ▶ Comment 2c: *How relevant is Pancakeswap?* (data)
- ▶ Comment 3a: *Are the results specific to this setting?* (validity)
- ▶ Comment 3b: *What should we do about RFY in DeFi?* (implications)

Thank you very much!