



We previously identified Capital Flight as one of the primary challenges in maintaining a functioning, balanced game with an open economy. This is the consequence of economic policies and game design choices that do not adequately incentivize capital to stay within the game.

The fluidity in which money flows in/out of game economies is a relatively new concept, the challenges in addressing imbalance within them are not.

We wanted to investigate past economic and game design choices for insights into designing persistent and open economic systems for the blockchain era.

Part 2: Examples in Economic Management Under Stress — Sfermion Research

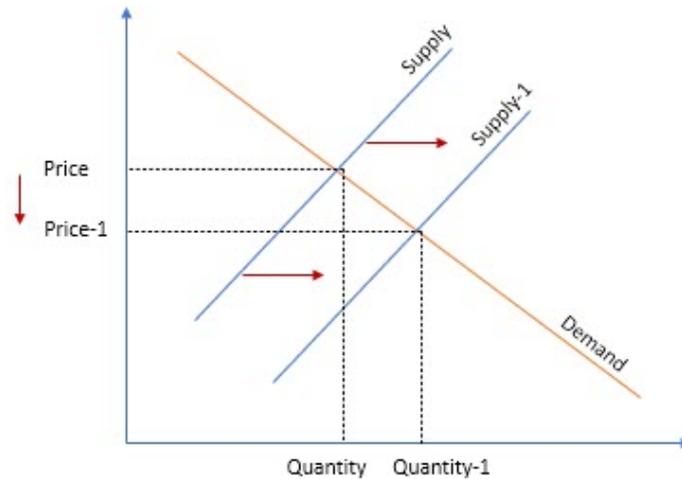
We have identified several events, instances, and flaws that introduced imbalance into the functi...

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Overproduction - results from skill-based systems that improve through use and rely on repetitive actions to level up. These systems are widespread in role-playing games such as World of Warcraft, Ultima Online, and Skyrim, to name a few.

The improve-through-use skill systems are a massive grind and introduce imbalance into the economic systems through deflation. Simply put, players craft many low-level goods that they turn around and sell to an NPC merchant.

Not only is the overproduction of goods injecting significant amounts of goods for which there is no demand into the game economies, but players are also actively selling these goods for in-game currency with the expectation of persistent demand.



Ultima Online - Example of Economic Trial and Error

The game pioneered many concepts that drive current MMOs ranging from open-world design, layered game systems, and flexibility to pursue whatever you want, whether exploring, building, or being an aspiring real estate speculator

Numerous economic models were tried

- 1: Closed economy with dynamically adjusting merchant prices in response to localized supply/demand.
- 2: Open economy featuring faucets and drains which created and destroyed items instead of recycling them
- 3: More More More -> Currency collapse

Diablo 3 Real Money Auction House

Players responded to the potential for earning real cash by turning to loot runs and gold farming en masse, dumping these items on the auction house, which tanked the market price for these items, completely distorting the game mechanics.

Blizzard responded with Scorched Earth and completely removed the fiat-linked economy from the game when the Reaper of Souls expansion was released. The patch also severely restricted trading and exchange of in-game items to the point where it is effectively eliminated.

Inflation/Deflation is a common occurrence across games with dynamic economic systems. Sometimes the result of bad mechanics, othertimes bugs.

Ultima Online had a bug that enabled players to dupe certain items, gold, and base agents. This created hyperinflation that would put Zimbabwe, Venezuela, or Weimar Germany to shame. Players were conjuring up a few hundred million gold for use in-game or selling via eBay.

Interestingly, the affected servers featured a higher standard of living than others. The hyperinflation of gold resulted in players purchasing better real estate and higher quality items and other trinkets to decorate their vast real estate holdings.

Animal Crossing New Horizons - Players discovered a flaw in the systems governing interest on savings. Players were time traveling to collect compounded interest payments made over decades of jumped time on past deposits and throwing the economy into chaos.

World of Warcraft attracted a significant number of gold farmers who would grind resources which they sold for gold and eventually fiat. They needed liquidity and merchants served this purpose, depressing earning potential which reduced earning potential.

Then the bots came for the farmers and priced them out of the market.

One of the more interesting schemes, subscription tokens, was implemented in both EVE Online and WoW.

Players could purchase the subscription tokens with real money and sell the pass in-game for their base currency. Players were able to subsidize their game subscription by playing the game (Play-2-Game?), bypassing illicit sellers and commodifying playing time.

This helped stabilize the price of the in-game currency somewhat and enabled the operating company to capture the profits that were exiting the system through the black market.

The above examples illustrate a few of the challenges that arise when building and maintaining virtual economies. Buried within them are some interesting lessons that we intend to build on in the next part of this series.

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