

# The GPU Market

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## I. OBJECTIVE

The objective of this project is to find correlations between historical GPU (Graphical Processing Unit) prices (namely, what percentage they are trading over MSRP) and related factors as discussed below. This will enable more accurate prediction as to when GPU prices can be expected to rise, fall, and stabilize. It may also enable insights to the future of the GPU market, namely, the price of products in the future. A final objective of this project is to rank the related factors in terms of highest to lowest effect on GPU prices, allowing us to empirically attribute the importance of dynamic changes in the market environment.

## II. MOTIVATION

GPU hardware has never been more sparse, inflated, or sought after than in present times and this trend has no signs of slowing. This project may shed insight on the possible end of the shortages, when to expect future shortages, the best times to buy GPUs, and important signs to be wary of that may adversely effect the GPU market.

## III. DATA

There will be several sources of data collected which will be compared. These include but are not limited to the following:

- historical GPU prices of many GPUs
- MSRP GPU prices
- GPU performance metrics
- availability
- new hardware releases
- new software releases
- general public's interest in GPUs
- general public's interest in related fields (gaming, modeling rendering, mining)
- crypto currency trading prices
- commonality of scalping
- covid19

## IV. RESPONSIBILITIES

Research - James Hammer  
Data collection - James Hammer  
Data synthesis - James Hammer  
Data comparisons - James Hammer  
Data Visualizations - James Hammer  
Writing - James Hammer

## V. MILESTONE TIMELINE

Milestone 1 - All relevant data collected  
Milestone 2 - All data synthesized to digestible format  
Milestone 3 - data comparison workflow created  
Milestone 4 - workable results  
Milestone 5 - data visualizations created  
Milestone 6 - final report, results, and visualizations complete

## VI. CHALLENGES

I expect milestones 1 and 3 to be the most difficult and time consuming. Statistical research will have to be done on the exact nature of the "comparisons" and how to rank their effects on historical GPU trading prices over MSRP.

Another challenge is managing this project with only 1 team member.

## VII. EXPECTED OUTCOME

I expect that there will be two main forms of data - "inside" factors, or factors determined by the attributes of the GPU itself, and "outside" factors, or factors that are not determined by the attributes of the GPU. I expect that inside factors will not have an effect on the impact on the margin over MSRP that respective GPUs are commonly sold for. I also expect to see that the relative importance (where "importance" is defined as how large an effect each factor has on the GPU price) of each outside factor to rank as follows:

- 1) Covid19
- 2) Availability (related to scalping)
- 3) All forms of Interests
- 4) Crypto trading prices
- 5) new releases

These predictions may end up incorrect, but at the very least an expected outcome would be a correct ordering of this list, along with key market features to be aware of when considering investing in a new GPU. Another expected outcome would be a prediction of when GPU prices will return to normal in relation to Covid19.