Sneaker Resale Market Model From Fashion Trends

Arturas Malinauskas & David Martinez

**General Introduction**

There is a growing market for the resale of athletic sneakers. This phenomenon is driven by sneaker manufacturers who produce limited product lines that sell out at initial release. Most initial buyers then turn around to other platforms, like eBay and Instagram, to sell the same product with up to 1000% markups. These prices are paid by consumers looking to gain social recognition with rare and aesthetically unique sneakers. Additionally, “trendsetters” such as famous athletes and musicians’ partner with sneaker manufacturers to promote those limited products and increase their social recognition. Consumers active in the resale market often exchange their older sneakers with others in the market to achieve a greater diversity in their wardrobe. Thus a pair of shoes may be worn two or three times and then sold again. These consumers constantly want something different to experiment with their fashion. And with wear and changes in perceived popularity, the value of a specific set of sneakers will fluctuate over time.

**The Model**

This project will model two key aspects of the sneaker resale market; consumer demand and product value. Both aspects will be represented with an agent-based model.

From a consumer’s point of view, their demand evolves with global trends and personal need. If a major trendsetter promotes a specific type of shoe, resale value will increase for resellers who own the same type. There are five key players in the market: trendsetters, socialites, collectors, scammers, and profiteers. The trendsetters stimulate the social value of the shoes. Socialites want to buy the most popular sneakers at a specific time, wear them sparingly, and then trade up for the next new thing. Collectors want sneakers with the best long term social value and take supply out of the resale market permanently. Scammers cheat other agents out of either money or sneakers or both. Profiteers ignore social value and look to maximize personal profit. An agent-based model will be developed to assign a fixed amount of money to each agent. A number of shoes can be bought, owned or sold by the agents. These buy and sell operations will be based on fashion and demand for the product.

From the product’s point of view, monetary value in the resale market is based on shoe age, shoe condition, available supply, and the social value appraised by the consumer agents. The agent-based model which will vary the social appeal of the product, affecting the trend value of their possessions and the consumers’ desire to sell or buy different articles.

**Fundamental Questions**

What is the range of money that consumers will pay for a pair of sneakers? How does this change based on trendsetters, available supply, and social cultural interactions?

What strategies should be used by each consumer agent to maximize their wants?

Can a bubble be created or predicted in this market? (I.E. there are many more profiteers and scammers than collectors and socialites, prices inflate until there is no sustained demand)

**Expected Results**

This project will answer the above questions. It should predict prices that are aligned with prices seen in the current market. Bubbles are expected to occur but prediction may be challenging due to the use of random variables in modeling.

**References**

Agent-based simulation of a financial market (project 17 folder)

Dissemination of Culture in the project 7 folder)