Evaluating Sustainable Competitive Advantages: Entry and Exit Barriers

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"If I have seen further it is by standing on the shoulder of Giants." – Isaac Newton

"In business, I look for economic castles protected by unbreachable moats." – Warren Buffett

In our earlier research papers on the topic of high quality, Investment Returns to Quality in Developed Markets and High Quality Stocks in Emerging Markets, we showed that high-quality stocks generate superior investment returns with lower risk compared to their benchmark indexes. While both papers laid out a quantitative framework for identifying high-quality businesses, the optimal investment selection process includes a significant non-quantitative component: the existence of sustainable competitive advantages.

A strong competitive advantage and its sustainability are the most important attributes of a high-quality business. Much of the investment returns that accrue to investors from the quality factor depends on the ability of the business to persist with its supernormal returns on capital. However, the excess returns can persist only if the business is able to keep competition at bay, which is a factor of the sustainability of the competitive advantage of the business.

While it is possible to develop quantitative models that can differentiate businesses that possess sustainable competitive advantages from those that don't, this is best done within a well-structured human-decision-making process while recognizing its cognitive limitations. Our research paper on the limited rationality of the human mind further investigates the design of such a process such that errors of cognition are minimized.

This article is the first in a series discussing an assessment process for existence or absence of sustainable competitive advantages. In this article, we discuss the basic building blocks of an investment process designed to identify high-quality businesses: the entry and exit barriers.

There is nothing new about much of what is discussed here. The concept of sustainable competitive advantages and the building blocks to the assessment of sustainable competitive advantages have been discussed and elaborated by several market luminaries including Warren Buffett and Charlie Munger. Through this series of articles, we will present a structured investment process that lends itself to modification and adoption by the reader.

Barriers to entry

Buffett says that he looks for businesses with "unbreachable" moats. What does he mean by moats? Moats are deep, broad ditches that were filled with water and surrounded a castle. Historically, moats[1]

[1] https://en.wikipedia.org/wiki/Moat

served as the preliminary line of defense by restricting access to enemy forces and serving as entry barriers. If the playground of a business wherein it operates can be referred to as a castle, the entry barriers that protect that playground can be referred to as moats.

So why are moats important? Let's say that an industry or business is enjoying supernormal returns on capital. Those returns mean that every dollar of capital invested in the business will be valued at more than a dollar. The possibility of creating a superior asset by replicating such a business will attract other entrepreneurs to commit capital and resources.

This is where entry barriers come into play. If entry barriers are low or non-existent, other entrepreneurs will successfully enter the business, driving supply upwards and returns downwards. This process will continue until all the excess returns are competed away. However, if entry barriers are insurmountable, efforts of competitors will fail and they will be unable to make inroads into the business, allowing the supernormal returns of the business to persist.

Barriers to exit: The overpowering component

Much of the discussion on moats focuses on entry barriers. However, exit barriers are extremely relevant when analyzing the ability of a business to persist with supernormal returns. While entry barriers determine the ability of competition to make inroads in the business, exit barriers determine the competitive structure that persists among the incumbents within the industry. Essentially, exit barriers dictate what happens once you are inside the castle. If you find that life gets miserable, exit barriers determine your ability to leave in search of greener pastures.

Industries with exit barriers are hard to leave; even businesses with poor economics are forced to stay. In such businesses, the profitability of everyone is dictated by the dumbest competitor.

Car markers: A case of exit barriers nullifying entry barriers

Consider the case of automakers, an industry characterized by substantial entry barriers. One of the sources of entry barriers protecting auto makers is the cost of development of new models. The development cost of a new model varies significantly. Depending on the scope and complexity of the project, the costs of developing a new model can range from US$1 billion to US$6 billion[2] [3].

To be a viable competitor and occupy enough mind-space of consumers, an automaker requires about five to six models. Assuming the development cost per model of US$2 to 3 billion and useful life of a new model of five years, an automaker will need to sell 2.4 to 3.6 million vehicles per year in order to keep the development cost per vehicle down to US$1,000. With the U.S. market currently estimated at about 18 million passenger vehicles per year[4] [5], the market can accommodate five to six competitors.

The problem with this industry structure is twofold. First, there are enough competitors vying for the consumer's dollars that price competition is likely to be high. Second and importantly, there are substantial exit barriers. Development costs that served as entry barriers also serve as exit barriers.

[2] http://www.autoblog.com/2010/07/27/why-does-it-cost-so-much-for-automakers-to-develop-new-models/
[3] http://www.reuters.com/article/2012/09/10/us-generalmotors-autos-volt-idUSBRE88904J20120910
[4] http://online.wsj.com/mdc/public/page/2_3022-autosales.html#autosalesD
[5] http://www.motorintelligence.com/m_frameset.html

Once spent, development costs are essentially sunk costs and can be recovered only by sales of an ever-increasing number of vehicles. This results in substantial price competition such that excess returns, if any, are hard to maintain.

Iron ore: Yet another case of exit barriers cancelling out entry barriers

A similar dynamic is at work among commodity producers. Consider the case of iron ore miners. There are substantial entry barriers in the form of large initial capital investments, a large scale of operations and the time it takes to develop a new mine, which ranges from five to seven years. As per our calculations, the total capital cost for iron ore mining range from US$240-450 per tonne for the largest miners. Compared to these capital costs, the cash cost of production per tonne currently is at US$15 per tonne[6].

These large capital costs that serve as entry barriers also serve the role of exit barriers as an iron ore mine doesn't have much of an alternative use. Again, the result of the exit barrier is sub-par profitability for the industry over the full business cycle.

Mousetraps: Fixed costs and exit barriers

Let's say that we have an industry with strong but not insurmountable entry barriers. Let's assume that the primary entry barrier in case of this industry is the production capacity and the only economically viable production size is at 30% of the industry size. Let's further assume that there are three incumbent firms in the business with each one them operating at about 30% of the industry demand. The demand-supply imbalance that exists in this case will typically result in the existing firms earning supernormal returns on their capital. Attracted by excess returns earned by the industry, a new entrant commits enough resources to prevail over the entry barriers and enters the business. As the new competitor enters the business, the industry ends up with an oversupplied situation[7]. If exit barriers are high, either of the four firms will find it hard to exit the business with the result being a price war.

The intensity of the price war in an industry with high exit barriers will depend on the underlying cost structures. The higher the proportion of fixed costs in the industry's cost structure, the more intense the competition will be. For example, if any or all of the four competitors start to lose money if market share of a firm were to drop below say 26%, the price war will be extremely intense. The likely result of such an industry dynamic will be under-par returns on capital for all businesses in this industry, at least as long as the oversupply situation persists.

This is the primary reason for poor profitability of the airline industry. The airline industry is characterized by high exit barriers. When faced with industry overcapacity, it becomes very hard for existing players to exit as it is hard to put the airplane to an alternative use[8]. Further, the industry has high fixed costs and so airlines engage in price wars to fill their seats. The result is extremely poor returns on capital.

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[6] http://www.smh.com.au/business/mining/bhp-inches-ahead-of-rio-in-game-of-cents-20150906-gjg4yl.html

[7] 30% times 4 means supply now exceeds demand by 20%.

[8] It is important to note that exit barriers do not refer to the ability of an incumbent to exit the business by selling out to another incumbent or a new entrant. The important consideration is whether or not the assets of the industry can be employed for an alternative use. If not, entry barriers will assert themselves whenever the industry suffers from overcapacity.

Extreme caution is appropriate when investing in an industry that is characterized by high exit barriers and high fixed costs, even if the industry has strong entry barriers. In such industries, there is always a competitor, typically the most inefficient one, who is willing to cut prices to grow market share. Typically, in such businesses, even the most efficient producer suffers as the cash cost of production of the marginal unit will be less than the total cost of production of the cost leader.

Interaction of entry and exit barriers

Figure 1 shows the interaction of entry and exit barriers. Within this framework, there are four market structures:

1. **Free flowers – Low entry barriers with low exit barriers:** Existence of low entry barriers along with low exit barriers give rise to perfectly competitive markets. This is because any demand-supply imbalance is quickly resolved by entry or exit of market supply.

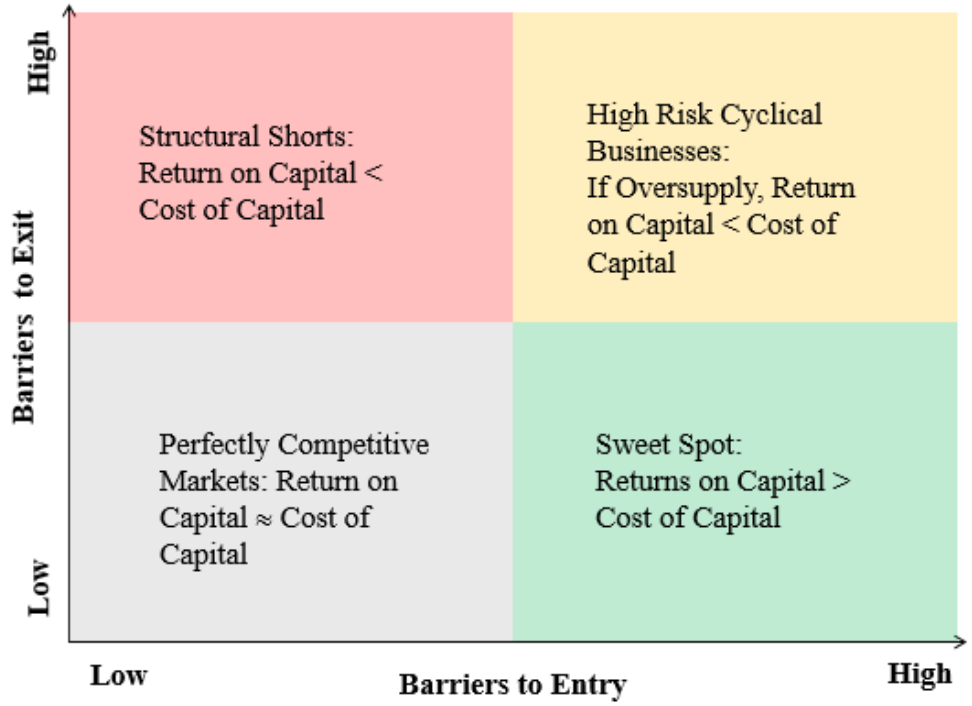
2. **Junkyards – Low entry barriers with high exit barriers:** Such market structures give rise to nightmarish experiences to entrepreneurs. Demand-supply mismatch conditions where demand exceeds supply are promptly resolved by increased supply as new supply enters attracted by excess returns. However, once supply exceeds demand — which is how most demand excesses are resolved — industry's returns on capital drops below cost of capital. This happens due to the existence of high exit barriers as existing players drop prices to acquire higher market share.

3. **Mirage – High entry barriers with high exit barriers:** Such market structures give rise to cyclical markets. Depending on the number of competitors that the industry can support, returns on capital over time can range from miserable to reasonably good. Cyclicality of profitability for businesses in such industries is mostly driven by the existence of exit barriers. Any demand-supply mismatch where supply exceeds demand is resolved by price cuts as existing competitors compete to acquire market share[9].

4. **Natural moats – High entry barriers with low exit barriers:** Such markets give rise to natural moats. High entry barriers help keep competition away, allowing existing competitors to earn superiors returns. Further, low exit barriers allow excess supply to be weaned out such that any supply excesses are quickly resolved in favor of lower supply, reinstating industry's profitability.

[9] Such industries run into significant problems if a determined new entrant is willing to throw in enough capital and resources to overcome the entry barriers. If such a competitor is able to overcome the entry barriers and enter the business, the existence of exit barriers result in sub-par profitability for all players until such time that demand grows to match supply.

Figure 1: Interaction of Entry and Exit Barriers



Just as Buffett talks of multiple components when discussing the desirable attributes of a good business[10], there are multiple components that determine the strength and sustainability of the competitive advantage of a business. However, barriers to entry and barriers to exit serve as the basic building blocks of that process. An investor who is able to appropriately judge the existence and strength of these two barriers is on his way to investment genius.

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MAEG is an investment manager managing global investment funds registered with the Cayman Islands Monetary Authority.

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[10] "…. it's a simple business. It's not an easy business. I don't want a business that's easy for competitors. I want a business with a moat around it. I want a very valuable castle in the middle. And then I want…the Duke who's in charge of that castle to be honest and hardworking and able. And then I want a big moat around the castle, and that moat can be various things." – Warren Buffett