

The Ethics of Market Design

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April 15, 2020

Abstract

A study of the potential applications and limitations of Market Design in free market economies. In this paper, we discuss how Market Design can solve market inefficiencies and externalities, while examining the limitations of a market design approach.

Keywords: market design, externalities, market ethics, efficient outcomes, game theory, price mechanisms, moral markets.

Introduction

From information asymmetry to negative externalities, market failures are as old of a concept as markets themselves. While common remedies - typically taking the form of authoritative regulation or price mechanisms - attempt to correct these market failures, the novel field of Market Design tries to prevent them from happening in the first place. To do so, market designers rethink the structures and rules that dictate market transactions rather than taking them as given[3]. The inception and application of this approach by economists like Alvin E. Roth has proved to be rather successful in a variety of markets[5]. But can markets always be bettered through design?

In this paper, we examine how market design can solve market failures and externalities, and discuss the limitations of a market design approach with regards to moral hazards. The first part of our paper focuses on the nature of free and organic markets and the externalities they display, and how Market Design can potentially remedy these externalities so as to enhance market efficiency. The second part of our research examines the limitations of Market Design with regards to moral hazards. In comparing the work of Michael J. Sandel on market thinking[7], with that of market designers like Al Roth, we attempt to answer the following question: Are the moral issues encountered an inevitable consequence of a new market's creation, or simply a product of its poor design?

1 Possibilities: Market Externalities

1.1 Don't Panic, it's Organic

How do markets come to be, and what is an efficient market? Simply defined, an efficient market is one where outcomes maximize society's aggregated utility. In other words, an efficient market allocates resources optimally, such that no individual party can be made better off without making another worse off. The way about which an optimal allocation is attained, is what economists tend to disagree on. One common theory of *laissez faire* would have markets regulate themselves and reject the use of government intervention. In his 1945 manifesto "*The Use of Knowledge in Society*", free-market economist Friedrich Von Hayek indeed argues that markets emerge organically, and that an efficient economic system is best achieved through self-regulation and the price mechanism[1]. He explains that reaching an efficient allocation of resources must entail the utilization of knowledge that is dispersed and constantly changing. However, according to his text, adjusting to this dispersion of information in a complete and timely manner is an impossible task to achieve by a single central market planner. Instead, the solution to this knowledge utilization issue lies in the price system, which communicates information directly to market participants. By internalizing changes relating to time and place, prices aptly reflect market conditions to buyers and sellers. In doing so, this mechanism turns the aggregation of market

participants into a form of decentralized market planner. While F.A Hayek is but one of many economists to find this "marvellous" mechanism unmatched in its simplicity and efficacy, market failures and inefficiencies are still of common occurrence in free market economies. One prevailing instance of such market failures with respect to price mechanisms is the concept of *externality*.

As Bucovetsky defines it[6], an externality is a two-party interaction whose effect is ignored. However, in free markets of organic nature, prices often fail to internalize certain externalities out of convenience or lack of information, hence leading to inefficient allocations of resources. Another risk of both positive and negative externalities is sub-optimal production levels due to competition amongst industry players. This issue highlights a major flaw in the price mechanism: its inability to completely integrate market information. Then are externalities and free markets bound to coincide? F.A. Hayek famously said that "the curious task of economics is to demonstrate to men how little they really know about what they imagine they can design"[2]. If it is so, then who is to blame for natural market externalities, how are they expected to be solved, and most importantly, what is the role of market designers with regards to free markets?

1.2 The Power of Design

In his article "The Art of Designing Markets"[4], Nobel Prize laureate Alvin E. Roth defines market design as a process that enables business to "create markets where there were none or fix them when they go wrong". Considered by many as a pioneer in his field, Roth's work on improving kidney exchanges, medical residency programs and Boston school admissions has completely reshaped the way we consider markets. However, while the alteration of a marketplace's rules and infrastructures may initially seem to contradict a free-market economist's ambitions, this may be far from the truth. In the last chapter of his "*Who Gets What - and Why*"[5], Roth quotes Friedrich Hayek for acknowledging the importance of designing systems that ensure prosperous competition within a market. In his comparison of Hayek's views with that of market designers', Roth also distinguishes the task of recognizing a market's particular needs from that of fulfilling a market's needs. Then it seems that regardless of political aspirations, market design can perhaps serve as a useful tool for free and governed markets alike. In trying to achieve efficiency, market design inevitably seeks to minimize risks of externalities. As mentioned by Bucovetsky[6], one particularly pressing case of negative externality is pollution and common resource depletion. In recent years however, market designers have tackled environmental externalities with great innovation. From carbon emission trading, to fishing quota marketplaces and land use incentive auctions, clever designs that utilize price mechanisms can prove to be much more successful, and efficient, than simple taxes and regulation[3]. In most cases, market design attempts to steer interactions towards a desired direction rather than restricting market transactions. By incentivizing players to interact honestly with each other, it allows a market to operate *freely*, and efficiently, within the confines of its respective designs.

2 Limitations: Moral Hazards and Concerns

2.1 Market Constraints

We have briefly explored ways in which market design can triumph in solving externalities while allowing for free markets to operate, but what of instances when design must concede to moral justice?

In his influential work of literature *What Money Can't Buy, the Moral Limits of Markets*[7], political philosopher Michael J. Sandel discusses the moral hazards that new markets often display. His first chapter on market limitations introduces three ways in which queue jumping markets have emerged in the past couple of decades or so. While these markets may appear similar due to their use of time and money as exchangeable goods, they differ vastly from each other in the types of parties they involve, the directions in which they allow transactions to take place, and most importantly, the level of moral concern they raise. Markets for *Fast Tracks* in airports only cause mild levels of ethical discomfort and client frustration. This may be due to the fact that one individual's time-saving purchase does not lengthen another passenger's wait. It is somewhat evident however, that Ticket Scalping for doctor's appointments and Pope visits may cause much more controversy. In his explanation of market reasoning, Sandel considers two main arguments in defense of market thinking. The first, supports an individual's right to dispose of private possessions as they please, whether that possession is money, time, or even organs. However, in several markets, allowing for the use of money puts many participants at a disadvantage. In the case of a Free Shakespeare play, busy individuals can pay line standers and buy there way into the theater, but by doing so, they inevitably reduce the number of seats available to those willing to wait and unable to pay. As for the market for organs, governments generally forbid organ sales and market designers cannot resort to price mechanisms, so as to ensure equity for all patients in need of a transplant regardless of their financial situation[5]. The second argument often brought up by economists states that for a market to exist, it must be benefiting both parties engaging in market transactions, and is therefore maximize society's total utility. Yet, Sandel is quick to point out how this argument can easily be flawed. There is a clear distinction between an individual's ability to pay, and his willingness to pay for a good, which often makes "money" a distorted measure of the value individuals attribute to a good. But how can market design adjust, when price mechanisms are forbidden by law or prohibited by morals?

2.2 Design Constraints

Sandel mentions two obstacles standing in the way of more efficient and morally just markets. The first is that it is difficult to assess who values a good the most, as we often mistake people's ability to wait or pay with their willingness to do so. The second lies in the ethical argument against the use of a price mechanism to reveal people's utilities, as such a mechanism may lead to the

moral corruption of a good that is meant to be free.

If we consider economic efficiency to be but one of many factors that market designers consider when determining what outcome is most beneficial to society[3] then Sandel's arguments are most applicable to all market designers. *Repugnance*, as Roth qualifies it[5], is perhaps at the heart of many of these design and market constraints. Many markets are deemed unethical, or *repugnant* by parties that are not subject to the market's transactions. For example, an individual may strongly disapprove of prostitution without having necessarily taken part in a prostitution transaction in their entire life. When dealing with these *Repugnant* transactions, designers face risks of public retribution on one hand, and the creation of dangerous black markets on the other.[5] But queue jumping is by no means the market where the use of money is most contested, and where alternatives to cash are most needed. Sometimes, cash reluctance is diverted by devising systems that involve matching mechanisms, one remarkable example being that of kidney exchange systems.[5] In other cases, the *repugnance* turns out to be caused by the type of currency used rather than the use of currency itself. The invention of a scrip-based marketplace exclusive to food banks in the US for instance, has dramatically increased the number of donations that Feeding America can gather[3], which goes to show how useful price signals can be under specific circumstances.[1]

Discussion

It is especially apparent in times of crisis and panic how quickly we recognize a market's flaws, and how slowly we adapt to a market's needs. While some markets cause little to no moral hazards and provide ample room for improvement, others display constraints so large it becomes hardly possible to dispute their existence in the first place, let alone improve them by design. At the end of his chapter, Sandel draws the reader's attention to the implications of switching from market economies to market societies[7]. It is true that market designers often consider matters of fairness and equality as priorities[3], but difficulties invariably arise when optimal outcomes come at a moral or social cost. Market Design can indeed mitigate feelings of *repugnance* as it has done in many markets[5]. However, it may also serve as proof of how indispensable market thinking has become to us, showing that we would rather correct moral flaws than forgo of problematic markets all together. Ultimately, Market Design is more of a necessity than a choice. Better design can prevent a lot of the troubles we are encountering today, but in doing so it carries the risk of creating even more ethical noise. In conclusion, the shift from market economies to market societies[7] grants current market makers and market designers a role of unprecedented importance and accountability. The challenge that market designers face is determining how to navigate players towards a an optimal outcome without tampering with moral norms. In designing the markets of the future, understanding the moral implications of economically optimal outcomes as well as the effects a marketplace can have on its stakeholders becomes primordial.

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