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Integrated Strategy: Residual Market and Exchange Imperfections as the Foundation of Sustainable Competitive Advantage

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Abstract. Market imperfections are central to understanding the mechanisms that permit firms to capture value. Many of these imperfections are competed away when firms struggle to attain and defend competitive advantages, making markets more efficient in the process. The remaining imperfections can become a primary impetus for government intervention. Hence, an understanding of residual market imperfections—those imperfections that persist after market competition and regulation are accounted for—must inform any assessment of the long-term attractiveness of firm strategies. Our framework provides an integrated view of competition and government intervention, two of the principal forces that influence variation in firm profitability.

Keywords: nonmarket strategies • market failures • competitive advantage • sustainability • competitive strategy • industry analysis • transactions costs • rents • strategy formulation

1. Introduction

Early in his first term, President Obama signed the Credit Card Accountability Responsibility and Disclosure Act of 2009. The CARD Act required disclosures that provided consumers with additional information about the cost of using credit cards, and it sharply limited the fees that banks could charge. The regulation reduced banks' revenues and net income significantly, saving consumers about \$12 billion annually. The largest decline in income occurred in the most profitable card segment: fees from consumers with low credit scores (Agarwal et al. 2015).

This example illustrates two features of market economies. First, profits vary significantly across market segments. These differences imply that banks that had focused on customers with limited access to credit earned a higher return on their credit card business than banks that targeted wealthier consumers.¹ Even over an extended period of time, competition did not fully dissipate the greater profitability at the lower end of the market. Second, the attractiveness of markets and the financial performance of companies are both vulnerable to government intervention. For example, the CARD Act's requirement that banks warn consumers before they exceeded their credit limit eliminated a substantial portion of the fees that contributed to the superior profitability of the subprime market.

The two questions that emerge from these features—What is the source of sustained supranormal profitability? And why does government intervention often undermine it?—turn out to have a single answer: *residual market imperfections*. Such imperfections soften competition and allow firms to capture a greater fraction

of the value that they create. Residual market imperfections persist notwithstanding competition among firms and intervention by the government. As such, this paper's two goals are, first, to provide a parsimonious characterization of the conditions under which firms attain such supranormal profits and, second, to better understand why governments frequently target precisely the markets that exhibit superior profitability. We focus on government intervention because of government's unique role in establishing and enforcing the rules under which markets function.²

Our framework is based on the economic theory of market failures (Bator 1958). The theory specifies a set of conditions that interfere with effective competition. Firms depend on these market imperfections to earn supranormal profits (Yao 1988, Oberholzer-Gee and Yao 2013, Mahoney and Qian 2013). Identifying such imperfections is a valuable starting point for analyzing potential sources of competitive advantage. But this analysis is incomplete because market imperfections are often reduced when firms compete to create and capture value (see, e.g., Chatain and Zemsky 2011). In our introductory example, prior to the 2009 legislation, some banks provided consumers with better information to attract a larger share of the highly profitable lower-income households. Others competed by charging lower fees when consumers exceeded their credit limits. These strategies reduced the importance of the initial market imperfection. As the example illustrates, the market imperfections that survive competition are typically firm specific. Some banks competed by reducing information asymmetries, others did not.

If sufficiently pervasive, market imperfections can become the target of government intervention. Through

the CARD Act, Congress further limited the market imperfections that had survived competition. Many forms of government intervention seek to preserve or enhance competition, putting the savvy strategist in tension with the determined regulator. *Residual market imperfections* are the imperfections that remain once both market competition and the public policy response to soft competition are taken into account. These residual imperfections constitute the true building blocks of longer-term strategic success.

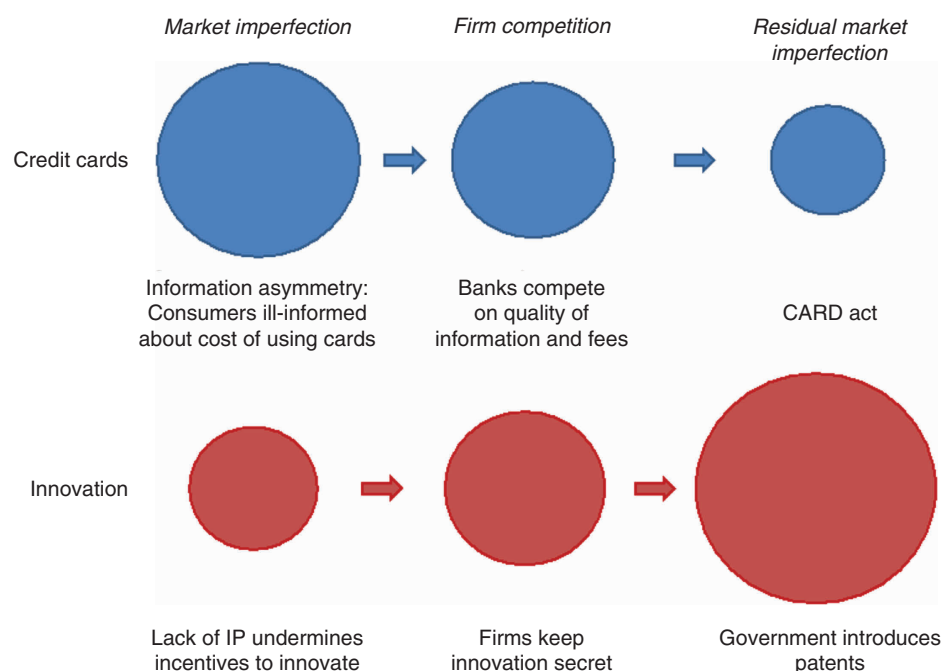
One might think that market imperfections help companies and hurt consumers and that government regulation generally limits business opportunities in the interest of protecting consumers. While the CARD Act conforms to this pattern, the intuition is misleading more generally. Market imperfections often hurt business, government interventions can increase firm profits, and residual imperfections are not necessarily smaller than the imperfections that survived market competition. Laws to protect intellectual property (IP) provide a striking example of these varied relationships. In the absence of patents, copyrights, and trademarks, firms earn socially suboptimal returns on innovative activity because rival firms can easily appropriate their intellectual property. In environments without intellectual property rights, some firms are able to keep their innovations secret, which, in turn, creates barriers to imitation that enhance their profitability. As in our previous examples, the ability to maintain trade secrets depends on firm capabilities and resources, giving rise to market imperfections that vary across firms. If governments then create formal IP

protection, innovative firms gain even greater market power and the value of the residual market imperfections increases. As a result, companies that rely on IP often earn returns far in excess of their cost of capital.

Figure 1 illustrates for the credit card and innovation examples how, from a firm perspective, the value of market imperfections changes with market competition and government intervention. In the credit card example, the value of market imperfections to firms is greatest if little competition exists among banks for lower-income households and there is no government intervention. When banks compete on improved consumer information and fees, the value of the market imperfection is reduced. In a final step, the CARD Act further undermines the value of the market imperfection. We observe the opposite pattern within the context of intellectual property. Without a means to protect their intellectual property, firms are worse off. As some firms begin to learn how to keep their intellectual property secret, profits increase. But innovative firms fare even better if government creates and enforces intellectual property rights (the lower right circle in Figure 1).

Our framework contributes to the literature and to current management practice in two ways. Similar to other frameworks in strategic management—for example, industry analysis (Porter 1980) and the resource-based view (Wernerfelt 1984)—we identify a small set of forces that account for a substantial portion of the variation in profitability across firms. Following Yao (1988) and Oberholzer-Gee and Yao (2013), we contend that three imperfections—market power, asymmetric information, and transaction costs—are particularly

Figure 1. (Color online) Competition and Government Intervention Influence the Value of Market Imperfections



important to our understanding of the variation in firm profitability.³

Our framework also helps integrate competitive strategy and regulatory concerns (Stigler 1971, Posner 1974, Baron 1995). While executives and academics alike recognize the importance of political and legal factors for a firm's financial performance,⁴ both communities lack an integrated framework that links market competition and government intervention (Durand et al. 2017). By providing such a framework, we hope to connect classic strategic management and political and legal analysis.

This paper proceeds as follows: In Section 2, we provide another example that illustrates the value of integrated strategic thinking. Section 3 then discusses market imperfections and their effect on profitability. Next, we address government intervention. Section 5 briefly focuses on the opportunities offered by strategies that exploit market imperfections and the competition to exploit them. We also introduce the concept of exchange imperfections, the firm-level analog of market imperfections. Finally, we conclude by considering how our framework can be used to formulate and implement sustainable strategies.

2. The Transformation of Market Failures

The market for automobile tires illustrates the value to considering both market forces and government activity in tandem. Consumers typically have imperfect information when they purchase replacement tires for their automobiles. Inspection does not allow them to observe the underlying quality characteristics of a tire, nor can their own experience provide much guidance. Some firms capitalized on this market imperfection by establishing a reputation for quality tires. Brand reputation not only addressed the consumer information problem, it also allowed companies such as Goodyear to earn higher premiums on their tires relative to companies with lesser reputations. While competition among brands reduced Goodyear's ability to capture the value it created, scale economies in brand building allowed the company to attain supranormal profits (Breyer 1982, Oberholzer-Gee et al. 2006).

The government response is not difficult to predict. In 1966 the U.S. Congress passed legislation that required the Department of Transportation to develop a tire grading system. The proposed system had the potential to reduce the information problem that consumers faced and, therefore, threatened to reduce the value of the reputation strategies through which some firms sought to capitalize on this information problem. Grading tire quality, however, turned out to be technically difficult. In 1979, after a long struggle between the regulators and the tire industry, Uniroyal, a tire company with a relatively weak brand but decent quality tires, broke ranks with its industry brethren and helped

the government develop the necessary testing procedures and standards. It is perhaps only mildly surprising that Uniroyal's products scored among the top tires on the new government rating. And it is of no surprise that Uniroyal subsequently built an advertising campaign around its impressive ratings performance.⁵

The example illustrates how profitable strategies can be built around market imperfections. The first imperfection (i.e., information asymmetry) made brands extra valuable, and the second imperfection (i.e., scale economies in brand building) prevented smaller companies from competing away the brand advantage. As will become apparent, it is often the transformation of different types of market imperfections that leads to sustainable supranormal profits.

3. The Core Framework

The intellectual basis for our approach is the economic theory of market failures. The approach categorizes failures as relating to market power, information imperfections, and transactions costs.⁶ Debreu (1959) and Arrow and Hahn (1971) showed that fully competitive markets would not allow companies to earn returns in excess of their cost of capital. Economists refer to this result as the First Welfare Theorem. From this glass mostly empty economic perspective we learn that a market failure, what we term a market imperfection, is necessary, though not sufficient, to sustain above-normal profits (Yao 1988, Oberholzer-Gee and Yao 2013).

Each of the three market imperfections reveals a specific reason why a company's profit margin is not eroded by competition and represents a fundamental mechanism through which companies can obtain or maintain supranormal profits. As these imperfections also identify the main sources of market inefficiency, they directly provide a public interest motivation for welfare-enhancing government intervention (Musgrave and Musgrave 1980).

3.1. Three Market Imperfections

Although our inspiration is drawn from the economic theory of market failures, we adapt the theory to accommodate the strategy context and focus on three classic market failures: production economies, information imperfections, and transaction costs.

3.1.1. Production Economies. Production economies are an important source of market power, the ability of a firm to price above the level that would prevail under perfect competition. Economies of scale are a classic example of a production economy. If a larger scale decreases costs and the scale economy exists at levels that are substantial fractions of overall market demand, economies of scale result in a reduced number of direct competitors. This reduction, in turn,

softens competition if there are substantial exit costs related to the investment in scale (Coase 1960). Other types of production economies are associated with product scope (Baumol et al. 1982), cumulative learning (Rapping 1965), or network size (Tirole 1994). Production economies can yield different types of competitive advantage. Network effects increase consumer willingness to pay while economies of scale lower costs.

Firms pursue numerous strategies to take advantage of scale. Prominent examples include the underpricing of initial public offerings and heavy investing in advertising (Sutton 1991), building capacity in advance of short-term demand increases (see, e.g., *U.S. v. Alcoa*, 146 F.2d 416 (2d Cir. 1956)), and altering one's location strategy to gain scale advantages (Ghemawat 2007). From a societal perspective, production economies create an interesting tension between increased efficiency (with potentially lower prices to consumers) and reduced competition (with potentially higher prices).⁷

3.1.2. Information Imperfections. In the presence of information imperfections, buyers or sellers lack information that is critical for efficient exchange. Often, the problem involves asymmetric information in which one party lacks material information that is known to the other (Ippolito 1986) either before the proposed exchange (e.g., the seller knows the quality of a product but the potential buyer does not) or after the exchange (e.g., the subsequent effort by one party cannot be observed by the other party).⁸ Information imperfections can help soften competition if buyers are unaware of near-equivalent products offered by a rival firm (e.g., Chatain and Zemsky 2011). For example, a company with a superior product may have difficulty breaking into existing buyer-supplier networks because buyers are unaware of (Butters 1977) or do not trust the new entrant. As a result, current suppliers are able to charge higher prices.

A common intuition is that (informed) firms benefit from information imperfections while (uninformed) customers lose. This view is too simplistic. Reducing asymmetric information, for instance by building brands, can benefit consumers and firms with strong brands (Shapiro 1982), while harming firms that lack a strong brand. In the hopes of gaining competitive advantage, companies also employ other types of welfare-enhancing quality assurance such as warranties or money-back guarantees (see, e.g., Akerlof 1970, for a discussion of how such actions can mitigate the information imperfections that might otherwise interfere with the efficiency or even existence of markets).

Third parties such as credit ratings agencies and *Consumer Reports* can also help alleviate information asymmetries. While markets for analysis and review help overcome information problems, they often face their

own market imperfections. For instance, hotels regularly post negative reviews on nearby rivals, thereby reducing the value of online evaluations (Mayzlin et al. 2014; see also Faulhaber and Yao 1989).

Regulatory actions to correct asymmetric information problems are common. Information regulation, for instance, seeks to improve market efficiency by mandating disclosures (Oberholzer-Gee and Mitsunari 2006). Examples include nutrition labeling, credit term disclosures, and energy efficiency labels. In the presence of severe information imperfections, governments sometimes resort to minimum standards to protect consumers (Fung et al. 2009). Finally, trademark law is designed to prevent consumer confusion and preserve firm incentives to reduce information asymmetries (Merges et al. 2012).

3.1.3. Transaction Costs. Transaction costs are the costs of drafting, negotiating, and safeguarding agreements. They include the costs of governing transactional relationships and securing commitments. Williamson (1985) argues that transaction costs are a particular concern when the proposed exchange is complex, uncertain, and when it requires transaction-specific investments. If the transaction costs exceed the value of the exchange, no market will exist for that exchange. More commonly, market frictions alter the nature and level of market activity (see, e.g., Joskow 1987 for a discussion of how contracting is affected by the need to invest in relationship-specific assets). Search costs are a good example of a transaction cost that alters equilibrium price levels (Stahl 1989). Transaction costs can also make it more difficult to overcome other market imperfections. For example, the transaction costs of returning faulty products reduce the value of product warranties.

As in the case of production economies and information imperfections, there are private and public actions directed toward reducing transaction costs. Mechanisms that speed settlement (e.g., third-party arbitration) or facilitate the enforcement of contracts (e.g., litigation) are particularly important. Patents, which allow companies to control the use of information about an innovation that is embedded in novel products or services, are another example.

3.2. Private Responses to Market Imperfections

Firms respond to market imperfections in diverse ways. At its simplest, a firm might choose to exploit its market power. Wal-Mart, for instance, exploits scale economies by raising prices in sparsely populated markets where it faces little competition (Ghemawat et al. 2003). Similarly, U.S. cable companies charge significant markups and oversupply quality in response to scale advantages that benefit incumbent firms (Crawford et al. 2015). In these instances, firms exploit market imperfections at the expense of consumers and at the cost of efficiency.

In other situations, however, competition among firms transforms market imperfections, creating potential gains for firms and consumers. Bayer aspirin is a good example. Sold at three times the price of its private-label equivalent, the Bayer product has the same active ingredient and dosage as the generic versions. But the Bayer brand is of value to consumers with limited medical knowledge who are nervous about the quality of private-label products. Doctors and pharmacists, by contrast, devote 90% of their aspirin purchases to private label aspirin (Bronnenberg et al. 2015). The case of aspirin is no exception. U.S. consumers spend \$166 billion annually on branded products for which nearly identical private-label substitutes exist.

Uber and similar ride-sharing services provide another example of the mitigation of market imperfections that can benefit firms and consumers. The market for taxi services was traditionally plagued by information imperfections; supply and demand were mismatched in most markets most of the time. To make matters worse, industry regulations often had the effect of softening competition. For example, taxi licenses frequently imposed geographic restrictions on where taxi drivers were permitted to pick up passengers. Uber and similar services use technology to better match drivers and passengers, thereby making the market more efficient (Hall and Krueger 2016, Moon 2017). At the same time, the Uber business model benefits from local network effects that give rise to market power. One imperfection is competed away, but the residual imperfection has the potential to sustain supranormal profits.

Figure 2 provides a stylized representation of the incentives faced by a *single firm* in a market with significant market information imperfections. The x -axis indexes the degree of market imperfection that ranges from no imperfection (where the market is fully efficient and firms earn their cost of capital) at the far

left to significant imperfection at the far right. MI_0 indicates the benchmark structural imperfection associated with this particular market when neither the firm nor the government have taken actions to mitigate (or exacerbate) the imperfection. The y -axis indexes this firm's return on invested capital (ROIC). In this figure, a firm can choose from four distinct strategies (A through D) each of which has consequences for the market imperfections faced by potential buyers. The curves associated with each strategy represent the payoffs for that strategy given a level of market imperfection. For example, the ROIC curve for Strategy C declines as the imperfection is decreased more than MI_{C^*} , presumably because the additional investment in reducing this imperfection is not justified by the resulting returns. Strategy D can be thought of as a strategy designed to exploit the existing market imperfection, so it is optimal when the level of imperfection is highest. Strategy C, the most profitable strategy in the absence of government action, takes advantage of the market opportunity associated with some mitigation of the underlying information imperfection (to level MI_{C^*}).

Now consider a market with multiple firms (Figure 3). If all firms were to choose Strategy C, some of the value created through addressing the market imperfection would be competed away through price competition decreasing the payoffs from the dashed line (e.g., representing the ROIC to a single firm if all the others followed Strategy D) to the solid line that represents each firm's payoff when all the others follow Strategy C. If firms compete solely on price, the returns to a given strategy fall while the degree of market imperfection remains unchanged. For the strategies and payoffs shown in Figure 3, all firms would choose the equilibrium Strategy C*.⁹ The solid lines representing the ROIC curves for the other strategies can be thought of as potential "deviations" from Strategy C. That is, they are the payoffs to a single firm following that strategy when all the others follow Strategy C.

Figure 2. (Color online) Single-Firm Incentives to Reduce Market Imperfection

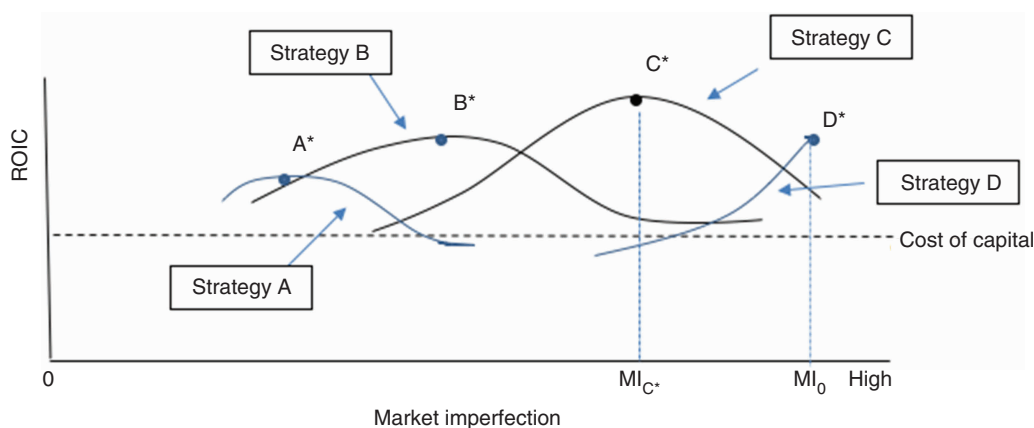
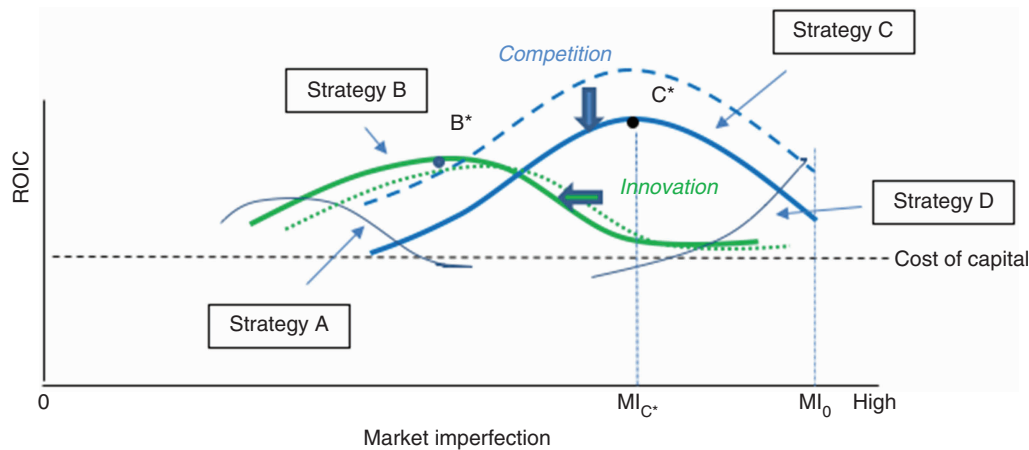


Figure 3. (Color online) Firm Incentives, Competition, and Innovation

The change from the dotted to the solid line representing Strategy B illustrates how an innovation that addresses market imperfections can be represented in the diagram. Such an innovation could lead the innovator to shift from Strategy C to B if the ROIC is higher with B*. Think of the introduction of extended-mile warranties in the automobile industry as an example. When considering the attractiveness of an innovation, firms take into account the resulting (short-run) ROIC as well as the likelihood that other firms would imitate the strategy, which would shift downward the solid curve associated with B, reducing the appeal of the innovation.

In the discussion that follows, we develop the government intervention equivalent of this graph and then use it to depict the residual market imperfection idea at the market level.

4. Government Intervention

While competition can reduce the value of market imperfections to firms, the persistence of imperfections even in fairly competitive environments may prompt government intervention.¹⁰ Some interventions wipe out much of the value of the existing imperfections. The telecommunications industry provides some striking examples. For years, the nonportability of individual cell phone numbers discouraged customers from switching telecom providers. Individuals who changed their carrier had to notify friends, acquaintances, and business contacts, a time-consuming task that made customers “loyal” to their providers. Not surprisingly, regulators eventually forced the portability of numbers in many countries, making markets far more competitive (Shi et al. 2006). Similarly, consumers in the United States (and in many other markets) incurred hefty charges when they used cell phone services that exceeded contractual limits, presumably contributing to profits. Pressured by the Federal Communications Commission, the industry eventually agreed

to send alerts to customers who were close to their service allowances.

It is rare, however, that government interventions magically produce fully competitive markets. Typically, some market imperfections persist post intervention and the effects of these imperfections will frequently vary across firms. Regulations that impose a fixed cost on firms, for example, will have asymmetric competitive consequences because they have smaller unit cost implications for larger firms.

Table 1 provides some examples that illustrate residual strategic opportunities that result from firm and government actions intended to mitigate various types of market imperfections.

The reasons that governments do not achieve fully efficient outcomes are varied. Sometimes, full efficiency is simply not attainable. The difficulties associated with designing and implementing government interventions are another reason why programs do not eliminate all market imperfections. Finally, government may pursue distributional goals or may be subject to influence-seeking activities that lead to less than fully efficient outcomes. In the following sections, we discuss these reasons in turn.

4.1. Second-Best Considerations

In a world in which many markets are distorted, even an optimal government intervention sometimes leads to further distortions. Economists refer to this insight as the theory of the second best (Lipsey and Lancaster 1956). For example, optimal innovation policy is a second-best intervention. To provide incentives to innovate, governments grant innovators temporary exclusive use positions in the form of patents, a residual market imperfection, which allows higher-than-efficient pricing for considerable periods of time (Jaffe and Lerner 2004). For our purposes, the key insight of the theory is that even a perfect government

Table 1. Examples of Market Imperfections, Responses, and Strategic Opportunities

General category	Market imperfection example	Response of firms	Response of government	Residual strategic opportunity
Production economies	Large economies of scale result in market power or natural monopolies in portions of the value chain	Expand geographically and aggregate production in a few locations	Regulates access prices to portions of value chain	Regulatory implementation may have asymmetric competitive consequences
Information imperfections	Buyers cannot evaluate quality of product	Build brands that signal quality level to consumers	Mandates quality rating system	Firms compete to influence rating system; lesser brands market using government rating system
Transaction costs	Uneconomic to prevent rivals from learning critical IP or imitating innovations	Vertically integrate to reduce information leakage	Provides intellectual property protection (e.g., patent rights)	Uneven IP protection; R&D, licensing, and alliance strategies adapt; IP litigation as tactical tool

would choose to distort the economy, thereby providing a basis for the superior profitability of some firms (Spence 1975, Train 1991).

4.2. Messy Solutions

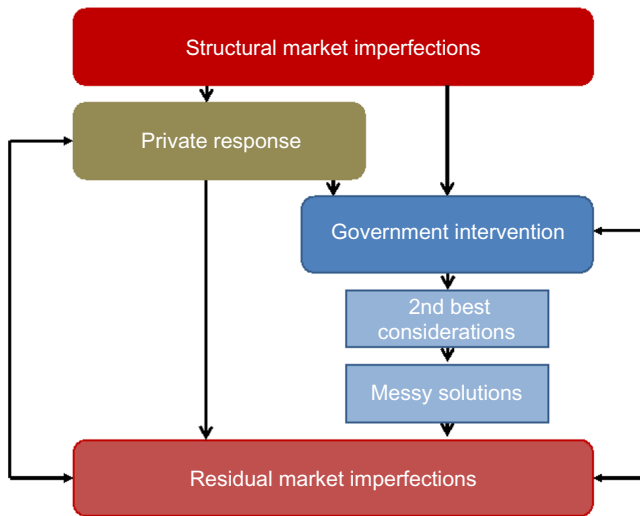
Real-world governments are less than perfect, of course. Residual market imperfections also persist because lawmakers and regulators find it difficult to design and implement interventions and may respond to private rather than social incentives. This is particularly true in environments that allow stakeholders to influence policy (Baron 2001).

4.2.1. The Design of Interventions. Experts within the fields of economics, law, and policy—let alone across those fields—frequently disagree over the appropriate design solutions to market imperfection problems. With respect to controlling market power, for example, voluminous literatures exist arguing for and against various ways to regulate pricing by natural monopolists (Joskow 2007). Experts also disagree about which mergers to block to preserve competition and which ones to allow (see, e.g., Scherer 1980). And while most observers agree that information imperfections can be reduced through the provision of more information, considerable debate exists regarding crucial details of what and how that additional information should be provided (Fung et al. 2009). If experts disagree, it is likely that at least some government interventions leave markets imperfect, opening avenues to sustained superior profitability.

4.2.2. Influence Seeking and the Incentives of Government Decision Makers. Expert disagreement is not the only force affecting governmental interventions. Private parties, including firms, consistently use their influence to promote their own interests as opposed to social gains (Tollison 1982, Frey 1983). Similarly, government decision makers are motivated by societal goals and their own private interests. Legislators, for example, worry about reelection, which motivates

them to heavily weigh powerful members of their constituency. Agency management too may bias some of their decisions to take into account both individual advancement and organizational goals. In this complex political environment, groups with significant resources and focused interests are particularly influential (Stigler 1971). For example, adoption of overall welfare-enhancing regulations whose costs intensely affect one group but whose benefits are widely diffused will be more difficult to pass owing to the challenge of mobilizing diffuse interests (Lowi 1979, Wilson 1980). In some cases, it is even possible that intervention could increase market imperfections.

While the influence of well-organized interest groups is widely recognized (Austen-Smith 1997, Rodrik 1995, Yackee and Yackee 2006), important forces prevent policy outcomes from being entirely inefficient. One such force is competition among interest groups (Becker 1983). For every group that wants less regulation, there is often an opposing group that represents the interests of those who stand to gain from regulation.¹¹ Another reason that efficiency considerations influence political decisions is electoral competition (Baron 1994, Grossman and Helpman 1996, Riezman and Wilson 1997, Besley and Coate 2001). Lawmakers who support policies and programs that hurt their constituents require compensation, typically in the form of campaign contributions or political favors. Organized interests employ two tactics to keep the cost of political favors limited. When choosing between policies with similar private but different public benefits, the interests choose the policy that is better for the electorate. Another tactic is to couch the arguments for private benefits in terms of the public interest. Policies favored for their distributional consequences, for instance, are then said to be desirable for their impact on entrepreneurship or the labor market. Disguising private interest in public interest clothing is less costly to the proposing party if the proposed policy is in fact closer to the public interest (Grossman and Helpman 1994).

Figure 4. (Color online) Paths to Residual Market Imperfections

Design difficulties and influence-seeking activities often combine to limit the efficiency gains from government intervention. While regulation might diminish or even eliminate some market imperfections, other imperfections are likely to persist and new ones might even emerge as a result of government activity.

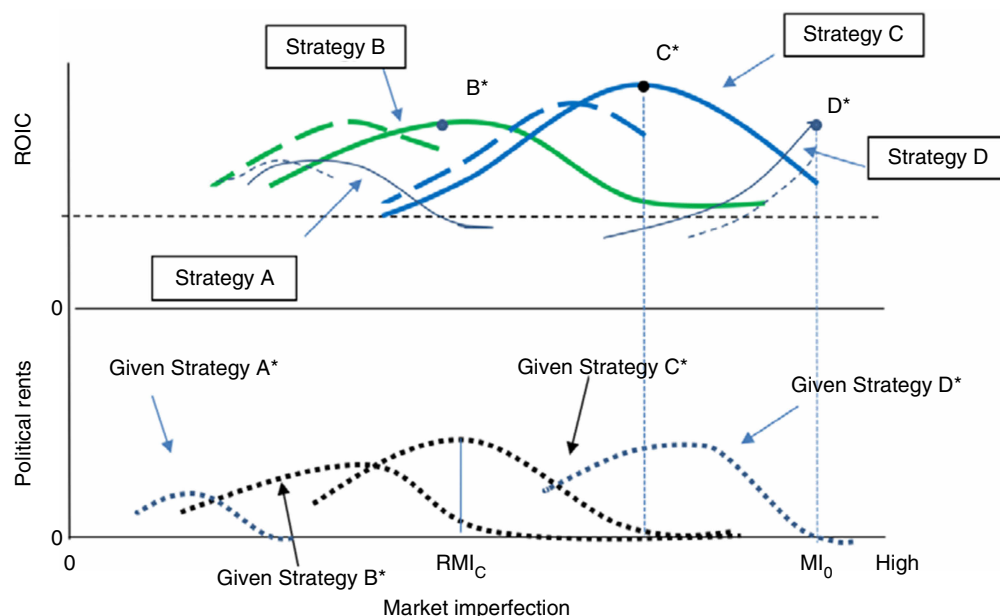
4.2.3. Implementation. Even when there is agreement regarding policy design and only limited influence seeking by special interest groups, implementation of a given policy still has the potential to introduce additional inefficiencies (Tirole 1994, Prendergast 2007). All governmental action requires some administration either by a government agency or the courts. For example, merger interventions frequently involve settlement

negotiations with antitrust agencies and sometimes rulings by courts with limited antitrust law experience. Information disclosure interventions often depend on an underlying testing procedure as well as monitoring and enforcement of such procedures and disclosures. And government interventions to reduce transaction costs raise collateral problems. Patents, for instance, are granted and enforced within a system that is expensive and error prone (Bessen and Meurer 2008).

The paths to residual market imperfections are summarized in Figure 4. The structural market imperfections box represents the market imperfections that would exist before any firm or government action that would mitigate such imperfections. Actions by firms and the government, then, operate on these imperfections resulting in residual market imperfections, which, in turn, may elicit further actions.

Figure 5 illustrates these ideas in terms of the payoff versus market imperfection graph by expanding Figure 3 to include the incentives of government in the lower panel and the impact of governmental intervention on firm payoffs in the upper panel. The payoff curves in the lower panel represent a summary statistic of the rewards to government from decreasing the market imperfection given the firms' choice of strategy. To keep things simple, we suppress the complex political dynamics that underlie actual political or administrative choice involving multiple players with differing incentives and treat government as a unitary actor who responds to firms' strategy choices.¹²

The curve labeled "Given Strategy C*," for example, graphs the political rents to government that result from differing levels of the residual market imperfection that results after government action and, perhaps,

Figure 5. (Color online) Firm and Government Incentives

subsequent firm responses. If the firms have selected C^* for their market strategies, the government maximizes political rents by responding with an intervention that leads to the residual market imperfection (RMI_C).¹³ The aggressiveness of the regulatory intervention is implicit, with more aggressive interventions resulting in lower levels of residual market imperfection. Notice that political rents are only positive when government intervention decreases the imperfection beyond the level that results from market action alone.

As drawn, the political rent curves are single peaked to represent the increasing gains to consumers from decreases in market imperfections. If these reduced imperfections harm firm profits, companies will resist more aggressive interventions, reducing government political rents. The precise shapes of the political rent curves depend on the nature of the market imperfection and the tools that government employs to reduce it. Figure 1, for example, suggests that they will look very different for credit card regulation and IP policy. In Figure 5, it is not optimal to pursue full efficiency, reflecting our discussion of the messy nature of government intervention.

The dashed lines in the upper panel show how firms' ROIC curves shift following a government intervention (e.g., an intervention leading to RMI_C). The dashed lines start at the firms' preintervention choices.¹⁴ This two-panel graph of firm and government incentives to reduce market imperfections provides the foundation for our subsequent analyses.

5. Integrated Strategy and Residual Market Imperfections

This section explores the market opportunity and sustainability implications of the residual market imperfections framework. We first argue that market imperfections offer opportunities for a firm to create value rather than merely being mechanisms that facilitate value capture. Second, we address the question of competition to exploit these imperfections and connect our framework to the positioning and resource-based view (RBV) schools of strategic thought. Finally, we examine sustainability from the viewpoint of regulatory threats and firms' varied approaches to counter those threats.

5.1. Strategic Opportunities Lead to Firm-Specific Exchange Imperfections

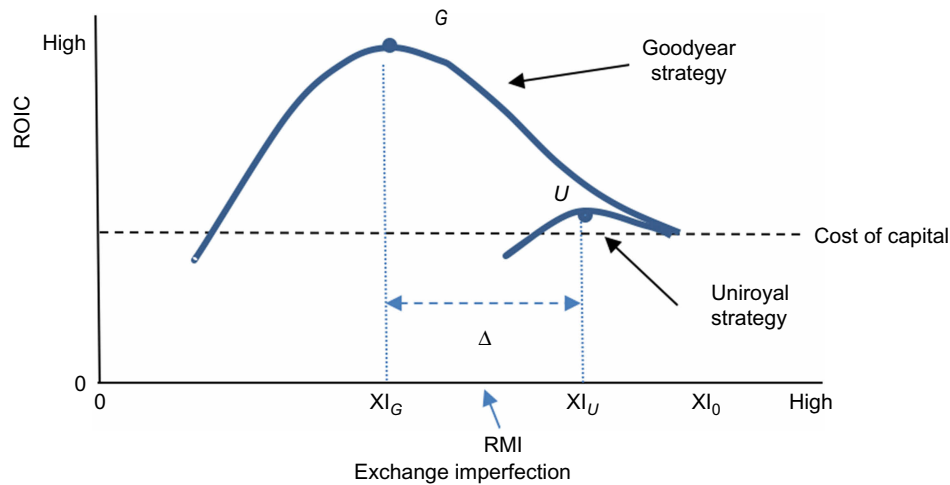
Companies whose strategies do not exploit one or more market imperfections face the full force of competition and, therefore, will find it difficult to attain sustained profitability. Hence, in evaluating a strategy, it is valuable to understand (1) what imperfections, if any, characterize the market, (2) how one's strategy (and the strategies of rival firms) might exploit such imperfections, and (3) how and why the market imperfections may change over time. The third element in the evaluation involves not only projecting future market

strategies, but also anticipating potential government intervention.

Many market imperfections are opportunities for firms to create value. Our framework, therefore, has the additional contribution of suggesting fertile targets for business development and innovation.¹⁵ Consider, for example, a few of the many ways in which innovative firms reduce transaction costs: Apple's extensive use of vertical integration to avoid compatibility problems (Yoffie and Baldwin 2015); Toyota's close collaboration with suppliers (Williamson 2008); and Tata's creation of more efficient firm-internal labor and capital markets (Khanna and Palepu 1997, 2000). In each of these cases, competition among firms encourages the innovators to share the transaction costs savings with consumers.¹⁶

Whether and how firms decide to create and capture value by reducing market imperfections will depend on the expected profitability of the available strategies, which, in turn, is a reflection of firm resources and capabilities. When firms choose strategies that affect the prevailing market imperfections differently, the resulting imperfections are firm specific; we refer to them as *exchange imperfections*. Exchange imperfections refer to the particular imperfection facing the firm and the party that is considering transacting with the firm. For example, from the viewpoint of a potential consumer, a firm with a strong quality brand presents a smaller information imperfection than a firm whose quality reputation is unknown. This approach facilitates identifying customers who are most effectively targeted by a particular strategy—customers who would most suffer from the market imperfection that underlies the strategy—creating a link between market segmentation and strategy through the analysis of exchange imperfections. This segmentation also provides a foundation for understanding the nature of political rents. For example, specific exchange imperfections will affect some consumers more than others, providing the former with greater incentives to exert political influence.

Consider the tire-grading example from Section 2. We graph the preregulation period in Figure 6 focusing on Goodyear and Uniroyal. The ROIC curves reflect each firm's strategy.¹⁷ Goodyear's curve represents the payoffs to its quality-oriented branding strategy while Uniroyal's curve represents the payoffs to its strategy that focuses more on OEM sales. Given their strategy choices, both Goodyear and Uniroyal reduce their exchange imperfections to profit maximizing levels, XI_G and XI_U , respectively. Hence, preregulation, consumers face a different level of exchange imperfection when considering buying Goodyear versus Uniroyal tires: the difference Δ presumably allows Goodyear to extract a relative price premium for its tires leading to a higher ROIC. When firms pursue different

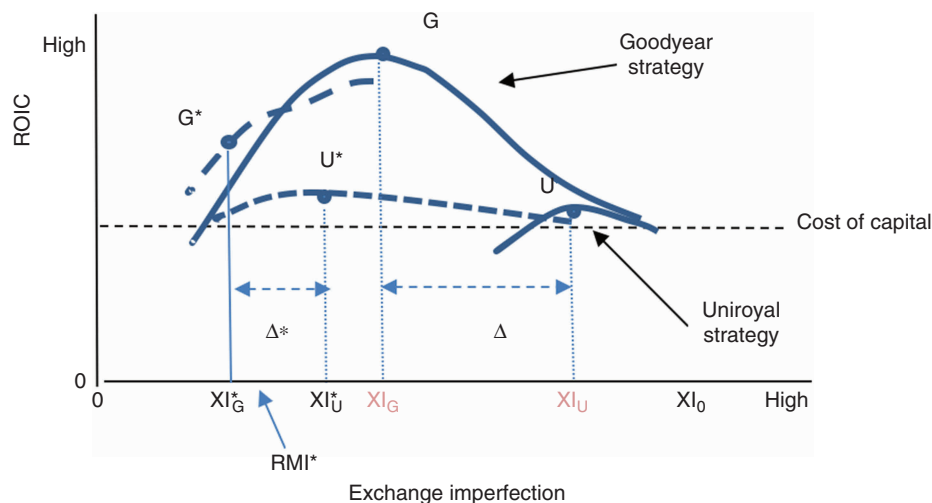
Figure 6. (Color online) Tire Firm Strategies and Firm-Specific Exchange Imperfections Before Regulation

Note. Simplified with ROIC given other firm's strategy.

strategies, the residual market imperfection is a summary statistic of the market, for example, a market-share weighted average of the exchange imperfections. In considerations of aggregate welfare, industrial organization economists look to residual market imperfections to assess markets. In the strategy context where firm profitability is of interest, scholars typically focus on exchange imperfections.

Figure 7 shows Goodyear's and Uniroyal's ROIC after government introduces the tire-grading regulation. Because our focus is on the heterogeneous impact of government intervention on firm payoffs, we suppress the choice of regulation faced by government and assume the regulation introduced is optimal given the two firm's strategies. Government regulation changes the two firm's strategies. Government regulation results in different exchange imperfections and profits (e.g., Uniroyal's payoff corresponds to U^* on its dashed

postregulation ROIC curve), which further reduces the resulting exchange imperfections associated with each firm's offerings, but does so disproportionately (to XI_G^* and XI_U^*). In this case, tire grading and quality information signaled through brand are partial substitutes, so the relative exchange imperfection difference between the strongly branded Goodyear tires and the weakly branded Uniroyal tires shrinks from Δ to Δ^* . Given that both firms make high quality tires, Uniroyal benefits more from regulation—its ROIC (at point U^*) is higher than preregulation while Goodyear's ROIC (at point G^*) is lower than preregulation because brands are more valuable in high consumer information uncertainty environments. A comparison of the before and after provides a partial indication of the incentive of each firm to resist (or support) the proposed regulation and its subsequent implementation.

Figure 7. (Color online) Tire Firm Strategies and Firm-Specific Exchange Imperfections After Regulation

Note. Simplified with ROIC given other firm's strategy.

As this example illustrates, an integrated discussion of firm strategy operates at both the firm and the market levels of analysis. Government interventions can be motivated by residual market or exchange imperfections. Market inefficiencies loomed large in the CARD and phone number portability debates. In other instances, merger analysis being an important example, the primary motivations involve both (expected) market and exchange imperfections. Firms, on the other hand, are motivated by the impacts of the residual exchange imperfections, which drive relative value as perceived by customers (or suppliers) and the potential value capture by the firms.

5.2. Competition to Exploit Residual Market Imperfections

All perspectives on the sources of firm performance require some explanation for why created value will not be competed away (Rumelt 1979, Barney 1986). Both the positioning school (Porter 1980, 1996) and the resource-based view (Wernerfelt 1984) identify circumstances under which the number of firms that compete for customers remains limited. In a classic five forces analysis, for instance, markets are deemed attractive if the firm faces few rivals and a multitude of suppliers and customers. The key to longer-term profitability, then, depends on the number of competitors in the relevant markets. The positioning school relies heavily on the idea that each strategic position involves trade-offs over how a firm creates value and for whom, implicitly suggesting that in many markets the number of firms that compete in exactly the same way for the same group of customers is limited. Trade-offs reduce the willingness of current rivals to imitate the positions of other firms. Entrants, who lack such preexisting trade-offs, are deterred for other reasons, economies of scale and other examples of barriers to entry playing a critical role (Mahoney 2001).

The resource-based view of enduring competitive advantage ultimately turns upon the number of firms in a market as well. Because resources are not tradable, they qualify as a source of rents that stay with the firm (Peteraf 1993). In the RBV, as in the positioning school, firms are intrinsically different and do not compete in exactly the same way. Superior resources for creating value thus lead to superior performance.

One contribution of the residual market imperfections framework is that it directly addresses the question why the number of firms remains limited. Production economies, information imperfections, and transactions costs, a subset of which have been addressed by Mahoney (2001) and Chatain and Zemsky (2011) as market frictions, all serve to keep limited the number of firms vying for a segment of customers. These market imperfections serve as isolating mechanisms (Rumelt 1984), which allow individual firms to sustain supranormal profits.

In the aspirin example, the effective number of competitors is small because consumers are skeptical of the benefits of private-label products. Similarly, the cost of identifying and contracting with potential suppliers typically limits the number of firms that customers would consider. As these examples make clear, our framework incorporates the classic reasons for a limited number of competitors (e.g., production economies), but we emphasize that the effective number of rivals is often smaller than government statistics or Yelp would suggest.

Because the residual market imperfections framework is squarely focused on understanding why the number of competitors remains limited despite attractive returns, the approach has the potential to lead to deeper insights and sharper recommendations. For instance, substantial capital requirements are sometimes used to illustrate high barriers to entry in the positioning school (Bain 1956). While financing constraints can be an impediment to entry, capital markets will have little difficulty supporting even very large projects in the absence of information asymmetries (McAfee et al. 2004). Information imperfections are the true source of competitive advantage. The difficulty of obtaining finance is a mere manifestation of the underlying imperfection.

We also see residual market imperfections as underlying the RBV analysis. Resources remain unique to firms because they cannot be easily identified and traded (Itami and Roehl 1987, Dierickx and Cool 1989).¹⁸ Market imperfections constitute the impediments to trade. For example, outsiders often have difficulty understanding why a rival has a greater capability. Metacapabilities, such as dynamic capabilities that involve an entire system of learning, are particularly difficult to penetrate (Teece et al. 1997, Rivkin 2000, Helfat et al. 2007). In fact, these capabilities may be so hard to understand and implement that even replication inside the firm can be a problem (Winter and Szulanski 2001). Whether within a single firm or across rivals, competitively relevant differences persist because market imperfections interfere with imitation.

While the uniqueness of resources can be traced in large part to market imperfections, the competitive implications of heterogeneous resources across firms are better understood by analyzing exchange imperfections. This type of analysis facilitates an understanding of the sources of differentiation as well as the consumer segmentation that accompanies that type of differentiation.

To understand how our framework can lead to more precise strategy prescriptions, consider the power of brands. Brands can constitute a valuable resource (Grant 1991). But it is not difficult to find firms with widely recognized brands that fail to achieve supranormal profits. The residual market imperfections framework suggests that brands are particularly valuable

in markets with substantial information asymmetries. Where brands serve as a valuable signal for quality, firms are more likely to experience attractive returns to brand-building activities.¹⁹ While the positioning school, the resource-based view, and the residual market imperfections framework are close cousins—each approach treats the number of competitors in a market as a key determinant of profitability—the market imperfections framework is arguably the most closely focused on the reasons why superior returns do not induce entry and ultimately perfect competition.

Overlaying this snapshot of firms and markets is the question of timing and the recognition of profitable strategies. Even if imitable, innovative business ideas can give the innovator first-mover advantages (Lieberman and Montgomery 1988). These can be leveraged into a sustainable competitive advantage if the first-mover advantage is linked to a market imperfection.²⁰ For example, Toyota gained a significant cost and performance advantage over other automobile manufacturers through its extensive field experience with its hybrid automobile engine systems because it had the dominant market share of such vehicles (Reinhardt et al. 2006). These advantages, of course, depend on a wide range of considerations including pioneering costs, the tolerance of early adopters, as well as the growth rate of the market. Another intriguing barrier to imitation involves cognitive failures. These failures may not only impede the occurrence of the initial creative jump, but also the recognition of the strategic importance of a rival's new strategy (Gavetti 2012).

Strategies that exploit one or more imperfections through an implementation that involves nontrivial development, then, would seem to offer the best opportunity for sustained profitability. The market imperfections intrinsically reduce competition, while nontrivial development, especially when it involves some business innovation or underappreciated opportunity, would slow rival recognition of that development and reduce the attractiveness of late imitation.

5.3. Sustainability and Integrated Strategy

The previous subsection focused on classic sustainability threats from market competitors. We now broaden our sustainability discussion to include government action.

We begin by examining three approaches that firms take when they consider the effect of the political and legal environment on their strategy (Weidenbaum 1977; see also Dorobantu et al. 2017, for a closely related argument).²¹ One approach is to take the regulatory environment as given. These firms treat government and legal institutions as providing the exogenous rules of the game and consider the sustainability of a given strategy as dependent on the current and future set of rules. Essentially, these firms are “rule takers” as

they do not expect their actions to influence government, though they may anticipate future regulations. A deeper level of integration occurs when firms anticipate that their market strategies might elicit a government response. These companies account for the likelihood that subsequent changes in the rules of the game will influence returns from their market strategy. Companies in this group, which we term “passive rule shapers,” anticipate government action but are not directly involved in the public policy process. A third group, the “active rule shapers,” simultaneously consider market strategies and opportunities to actively shape the rules of the game (Bonardi et al. 2005, 2006; Henisz et al. 2014; Holburn and Vanden Bergh 2014).²² These firms align their political and regulatory strategies to benefit their market strategy and thus take an endogenous view of rules when assessing the sustainability of their strategic choices.²³

Firms benefit from anticipating possible regulatory changes. But for any given firm, there is a plethora of environmental forces that may impact its profitability. Which ones are the most relevant? Our framework suggests that those relating to market imperfections typically have long-lasting strategic consequences. Those relating to other policy considerations, while important in some cases, do not as frequently affect the core of the firm's competitive advantage. Help with the identification of relevant policy parameters is one of the advantages of the residual market imperfections framework.

Two-panel graphs of the payoffs to firms and the government with different levels of market imperfections (similar to Figure 5) are useful to see the value of anticipating regulatory interventions. Figure 8 depicts rule-taking firms competing in a market in which the structural market imperfection is MI_0 . Recall that each solid ROIC curve represents a firm's payoff when other firms are taking the same action and the government does not intervene. The dashed lines represent the payoffs for that strategy given the government's political rent maximizing response. Figure 8 represents the myopic outcome that results when firms do not anticipate any further government action. Rule takers choose Strategy C. In response to C*, government chooses a regulation that decreases the resulting market imperfection to RMI_R . The rule-taker firm receives a much lower ROIC than anticipated (corresponding to C** versus C*).

Now consider the same situation as seen by passive-shaper firms (Figure 9). These firms anticipate that a choice of C* would result in a payoff corresponding to C**, whereas a choice of B* results in a higher payoff corresponding to B**. Hence, the passive-shapers choose Strategy B rather than C.

Now consider active-shaper firms (Figure 10). These firms not only recognize that their market action affects

Figure 8. (Color online) Rule Taker Choice and Government Response

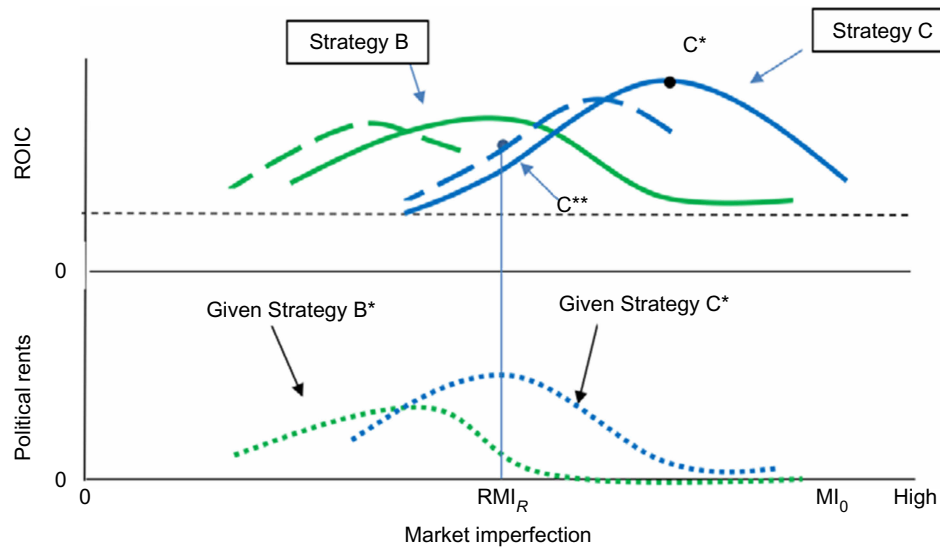
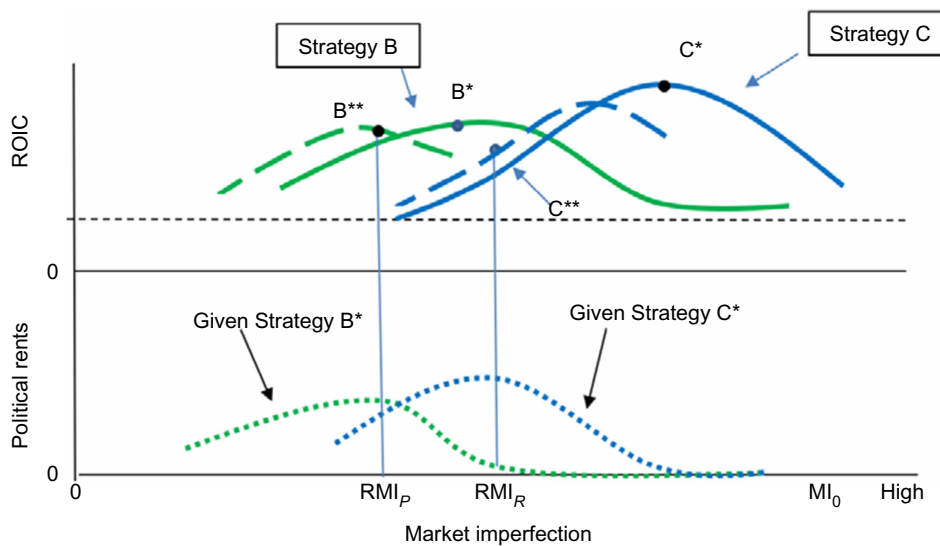


Figure 9. (Color online) Passive Shaper Anticipating Government Choice

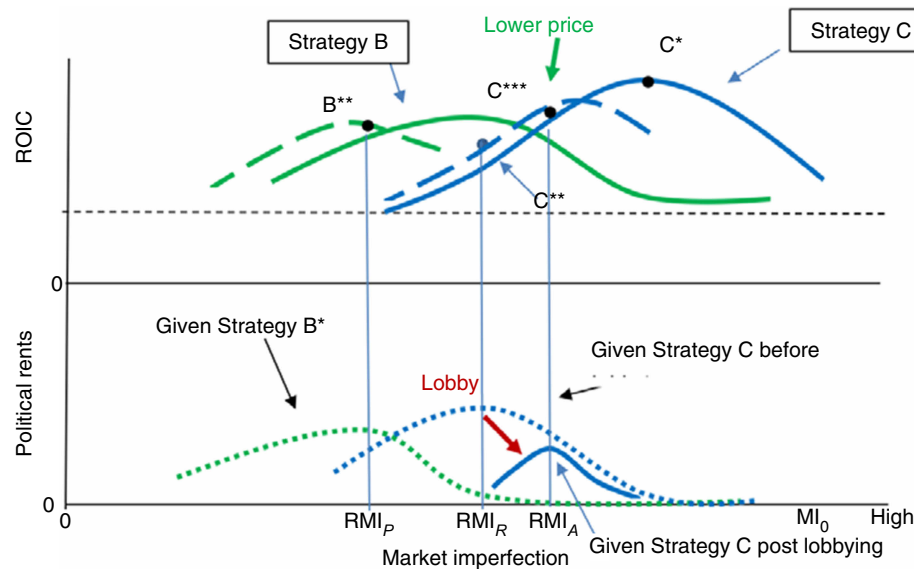


regulation, they also engage in influence-seeking activities to alter the government's payoffs.²⁴ Figure 10 shows the results. In the absence of lobbying efforts, the government would have chosen RMI_R . Faced with active shapers, the government now selects RMI_A , a level of market imperfection that makes it optimal for the firms to pursue Strategy C. In this example firm interests are aligned because of our assumption of symmetrically situated firms choosing the same strategies. When firm interests are in partial or full conflict such as described in the tire regulation example in Section 5.1, much of the political activity of firms may, of course, be neutralized.

Influence-seeking activities are but one of many possible responses to impending government intervention. Active-shaper firms might also choose to exploit an exchange imperfection less aggressively, for instance

by lowering prices. Even more sophisticated pricing strategies might reduce the harm to particularly salient groups (e.g., lower income consumers) or the politically powerful. Active shaping may also involve self-regulatory activities to facilitate the mitigation of market imperfections, which may entirely preempt government regulation (see, e.g., King and Lenox 2000 and Delmas and Montes-Sancho 2010).

More generally, active shapers will tend to shy away from strategies that are associated with political rent curves that rise sharply at the prevailing level of exchange imperfection. For example, a tactic that aggressively exploits information imperfections as well as decision-making biases on the part of consumers would more likely induce government intervention. In contrast, if firms selling products in a market prone to information imperfections build high-quality

Figure 10. (Color online) Integrated Strategy with Active Shaper

reputations and provide customer friendly return policies, the residual market imperfection and consumer harm is reduced, lowering the likelihood of regulatory intervention.²⁵

6. Conclusion

The residual market imperfections framework serves two purposes: it helps identify the source of a firm's competitive advantage, and it assists in predicting the likelihood of government interventions that have the potential to undermine this advantage. Because strategies that lead to supranormal profits depend on exploiting one or more market imperfections, government interventions that alter the nature of this market imperfection are first-order threats to a firm's competitive advantage. The residual market and exchange imperfection framework sharpens the relationship between market and nonmarket strategy, and it offers a filter through which managers can focus on the non-market forces that are strategy relevant.

Importantly, the framework illustrates that market imperfections present value creation opportunities. By reducing imperfections, a firm creates value that it can share with its own customers and suppliers.²⁶ Hence, it is useful to augment the residual market imperfection analysis with an analysis focused on exchange imperfections that operate at the firm level of analysis. Thus, a residual market and exchange imperfections perspective points the way toward sustainable strategies that allow a firm to be compensated for improving net social value. These strategies contrast with strategies that only exploit market imperfections.²⁷ Any strategy that increases individual firm profits invites imitation by one's competitors. Likewise, strategies that increase profits at the expense of consumers are likely to lead to government intervention. Thus, our analysis provides

a framework for considering which strategies have win-win characteristics for the firms and for society.

Finally, transcending the individual firm perspective, our integrated analysis of the interaction of firm strategy and government action also suggests that market outcomes can be highly path dependent. When the underlying market imperfections are significant, firm actions may transform the market imperfection. If they mitigate the problem, less severe or no regulation is likely to follow. But if they do not, a stronger regulatory response is more likely. The response will, in turn, alter the residual market and exchange imperfections that shape subsequent firm strategies.²⁸ Hence, even putting political economy considerations aside, markets with similar underlying market imperfection characteristics may evolve to distinctly different end points.

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Endnotes

¹ Charge-offs are higher among customers with lower credit scores, but higher interest rates and incremental fees more than make up for the difference (Agarwal et al. 2015). While Agarwal et al. do not make ex ante risk adjustments given their data limitations, they

characterize profits as “very profitable” based on a comparison to the financial sector average.

²The role and extent of markets is a societal decision that follows from the laws around which society is organized. Hence, in the organization of the market, government and governmental processes are fundamental. By limiting our examination to government interventions, we exclude an examination of other means through which market imperfections can be addressed, for example, “private politics” (Baron 2001).

³We discuss the relationship between these imperfections and the industry analysis and resource-based view perspectives in Section 5.

⁴Traditionally, strategic and unit planning has been separated from legal affairs (Schulz 1990). However, in recent years there is a strong trend toward including legal departments in a firm’s strategic planning conversations (Association of Corporate Counsel 2016, p. 6).

⁵See, for example, advertisement in *Popular Mechanics*, July 1981, p. 99.

⁶A fourth category, externalities, is not explored in this paper.

⁷This tension between the more efficient use of resources and softer competition, for example, is reflected in the government’s antitrust policy response to production economies that allows internal expansion. That is, firm size is not itself deemed anticompetitive (ABA Section of Antitrust Law 2007). By contrast, the authorities regularly intervene in M&A activities to prevent the artificial creation of market power.

⁸We include symmetric information problems here rather than grouping them with transaction cost imperfections because many of the strategic consequences are similar to those associated with asymmetric information problems.

⁹We suppress government action for now and add it in Section 4. In Section 5.1 we consider the case where firms follow different strategies.

¹⁰The importance of market failures as a rationale for regulation is reflected in the primary purposes of large U.S. federal regulatory agencies. An examination of the purposes of regulatory agencies with spending over \$100 million show that the large majority of those agencies have purposes that link to market failures of production economies (market power), information imperfections, transaction costs, or externalities. Other purposes include protection of rights (e.g., Equal Employment Opportunity Commission), protection of market boundaries (e.g., Drug Enforcement Administration), and macroeconomic policy (e.g., Federal Reserve).

¹¹Capron and Chatain (2008) examine actions that a firm can take against a rival’s resources in both factor and political markets that increase the focal firm’s profits and conditions under which competitor responses will influence the longevity of that profit increase.

¹²This political rent curve’s primary purpose is to represent that the political value to solving a market imperfection problem depends on the incremental amount of mitigation and the existing strategies of the market participants. It can be thought of as embedding the costs of organizing action, interest group resistance and support, and distribution of harm across affected groups. More simply, one could consider the curve as representing the actions that a “government” would take given its perceptions of the public interest.

¹³To provide a simple illustration of the forces at work, Figure 5 assumes a sequential structure in which firms act first without considering future government action and government responds with no further action. An equilibrium outcome where all parties anticipate the others’ actions and have no incentive to make additional adjustments would have firms choosing their best responses to the others’ strategies. We discuss the role of such anticipation in Section 5.

¹⁴To simplify the analysis, it is assumed that a firm cannot change its initial strategy (e.g., C^*) in response to the government choice though it may make adjustments to that initial strategy that would

affect the residual market imperfection. Exploring the implications of other timing and commitment assumptions is beyond the scope of this paper.

¹⁵Residual market imperfections can be thought of as static market outcomes that emerge as firms and the government choose best responses to each other. These RMIs, in turn, present opportunities for dynamic responses that require innovation (or pressures for new government action if government preferences change).

¹⁶Jia and Mayer (2016) suggest that a firm’s market capabilities could be a source of political capabilities.

¹⁷Each ROIC curve is based on the other firm taking its optimal choice of G and U , respectively.

¹⁸Market imperfections also may be the mechanism through which a given resource is valuable.

¹⁹Our framework focuses primarily on the functional value offered by brands to consumers. Brands, of course, frequently offer emotional and self-expressive benefits (Aaker and Joachimsthaler 2000) that serve to differentiate offerings and soften competition. Like the case of investments in innovation, investments in brand are affected by residual market imperfections relating to the ability of the firm to overcome the transaction costs (and also asymmetric information problems) associated with preventing other firms from free riding on branding investments. Here, trademark law protection functions in a similar way as patent protection to mitigate the market imperfection.

²⁰Early movers can acquire critical resources at below market value (e.g., intellectual property) or can lock up such resources through long-term contracts. Of course, these advantages would amount to rents on prescient forecasting rather than ongoing rent streams.

²¹Baron (1995, 2013) emphasizes the value to a firm of having its top managers consider both the market and nonmarket strategies when making overall “integrated” strategy choices. See, also, Shotts (2016) who analyzes a game-theoretic model of a firm’s investment choices in an environment where government expropriation is a serious risk and uses the analysis to underscore the importance of the integration of a firm’s political risk management with its operating units.

²²There is a rich literature that describes how firms engage political actors, influence the rules of the game, and reap private benefits in return (see, e.g., Hillman and Hitt 1999, Shaffer et al. 2000, Blumentritt 2003, Bonardi 2004, Cho et al. 2006, Cooper et al. 2010, Jia 2014, Macher and Mayo 2015). The resulting tensions inside the organization are analyzed by Shaffer and Hillman (2000).

²³For a skeptical view of the performance consequences of firms’ political engagement, see Faccio (2006), Aggarwal et al. (2012), and Hadani and Schuler (2013).

²⁴See, e.g., Keim and Zeithaml (1986) and De Figueiredo (2009) for discussions of corporate political strategies. Note also that the political rent curves in Section 4 (Figure 5) are agnostic regarding the degree to which firms are active in the nonmarket arena.

²⁵The degree to which a firm adopts an active-shaper posture depends on how it perceives its ability to anticipate government action and its willingness to maintain the level of nonmarket action needed to suppress forces that might push for additional governmental intervention.

²⁶A cost-leadership strategy that is built around exploiting economies of scale is one in which the value-capture component (reduced market competition) is indivisible from the value-creation component (efficiencies that lower the costs of production). This indivisibility makes it difficult for nonmarket actors to undermine value capture without engaging in direct market intervention.

²⁷Enron, for example, made substantial profits by exploiting arbitrage opportunities that were created as a result of early attempts to organize and run the California energy market.

²⁸Path dependency is exacerbated because the regulatory process exhibits significant inertia. Not only is the passage of regulation often

difficult (see, e.g., Kingdon 1984), but the process of adjusting extant regulations to reflect modest reductions in the degree of consumer harm that might result from new firm solutions is also challenging.

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