ABSTRACT
Under what conditions do businesses choose to reconsider their immediate, short-term competitive niches and engage in long-term, systematic thinking by searching for new business models? This crucial question is left aside by the contemporary literature on industrial policy insofar as it assumes that the problem of industrial upgrading and learning is one of states facilitating private firms’ pursuit of their already-established drives. Drawing from five cases in Latin America (two in Guatemala, two in Nicaragua and one in Colombia) where industries voluntarily broke free of inertial trajectories to seek new approaches to business, we find that conditions of “systemic vulnerability” (Doner et al. 2005) – a combination of shocks in demand, sectoral competitiveness and civil/social conflict – force business elites to reconsider their constituents and investment timeframes in a manner analogous to political elites in Doner et al.’s model. Based on these observations, we contribute to theories of industrial policy and industrial upgrading by identifying the factors that inhibit and encourage firms’ initiation of searches for new business models.
1. Introduction

In 2006, Dani Rodrik joined a growing choir in declaring the death of the Washington Consensus. Shaken by a flurry of disappointing results, the Consensus’ theoretical edifice crumbled. Even its high priests at the IMF and World Bank eschewed its tenets. Yet, its replacement remained much less clear. As Rodrik playfully remarked, the Washington Consensus had given way to the “Washington Confusion” (Rodrik 2006).

In this context of confusion, a “new industrial policy paradigm” has slowly emerged as a possible alternative. This promising replacement builds on the discredited old industrial policy paradigm. It carries forward the emphasis on market failure, particularly as it relates to information, usually in the form of production and/or organizational know-how. From a pro-industrial policy perspective, market competition is seen as insufficient to disseminate this costly information, which low-productivity producers require to exploit their factor cost advantages. As Chang (2008) puts it, “a backyard motor repair shop in Maputo simply cannot produce a Beetle, even if Volkswagen were to give it all the necessary drawings and instruction manuals, because it lacks the technological and organizational capacities that Volkswagen enjoys” (196). To address this debilitating imperfection, the new paradigm suggests “bringing the state back in” (Evans et al 1985).

At the same time, the new industrial policy literature nods to the Washington Consensus approach by lightening the strongly statist bias of the old industrial policy. It discards some of its less palatable authoritarian facets, casting aside the notion of “picking winners.” Instead, it promotes a mantra of assistance by encouraging states to enhance business
access to markets with investments in broadly beneficial goods that lower the risk of innovation and experimentation. In defining those goods, the new industrial policy paradigm underscores business-state collaboration: to inform their decisions and elicit the necessary information, state bureaucrats should maintain close but autonomous (i.e. disinterested in the outcomes for any one business) relations with business elites.

While illuminating, this exercise in synthesis is hampered by the problematic assumption that business will listen and vigorously respond to overtures from state bureaucrats for information on key obstacles and preferred interventions. Two crucial problems arise. First, business varies in its willingness to collaborate with the state. Trust between firm decision-makers and state bureaucrats is in no way a given. The literature on state corruption and the politics of state-business relations (e.g. Evans 1997, Tendler 1998, Chibber 2003) is vast and of great importance to articulating an effective industrial policy agenda. In this paper, however, we focus not on the capacities of the state, or business elites’ faith in it, but rather business elites themselves.

This second issue, of the knowledge, motivation, and capacities of the business elites, has received scant attention in the recent literature on industrial policy. Yet there is ample evidence from a wide range of countries that firm decision-makers are often single-mindedly focused on their short-term objectives and largely uninterested in the type of long-term, systematic thinking that is industrial policy’s irreducible goal. In addition, it is not uncommon for firm decision-makers to lack the type of information on bottlenecks and barriers to upgrading that state bureaucrats require. These shortcomings may as easily be
due to a lack of interest as a lack of resources. If one accepts that firms may easily
“satisfice” (Cyert and March 1992 [1964]) rather than maximize, then the institutional
environments of many developing countries should give one pause before assuming that
businesses are on a constant drive to reach or extend the global frontier.

Given these two problems, we argue that only when businesses choose to break free from –
or are forced to abandon – their inertial institutional environments and seek new methods
of production, sources of demand, and systems of industrial relations, will the predictions
of the new industrial policy paradigm materialize. Firms must collaborate, embrace longer-
term horizons and avidly search for innovations and new business models in order for
state-business relations to elicit the type of information envisioned by this promising
literature.¹ They must jettison conservative, risk-averse strategies.

We argue that for industrial policy to serve as a readily applicable, effective tool, scholars
and government officials alike need to problematize and understand how firms engage in
search for new approaches and models to doing business. Just as original and more recent
approaches to industrial policy suspend the assumption of perfect information in the
marketplace, we call for the suspension of the assumption of maximization. We ground the
introduction of satisficing approaches to the firm in the literature on the “varieties of
capitalism,” which explores how complementary institutions socialize actors into specific

¹ Implicit in this view is the belief that the main limitation to development is not the absence of any particular
form of capital. Rather, the crucial constraint is the absence of group-solving capacities. As Hirschman (195x)
argued, development trajectories are often defined by “capacity to problem solve in a capitalist world, the
ability to make development decisions... the ability to carry out cooperatively decisions and activities for
development...” (Adelman 200x, xx).
sets of expectations as economic actors (Hall and Soskice 2001), a phenomenon that in many institutional contexts produces a low propensity to innovate (Schneider 2013). We then connect the breaking of these low-equilibrium “inertial” tendencies to work by Doner, Ritchie and Slater (2005) who have considered the parallel problem of breaking state agents out of their own satisficing tendencies, which requires a structure of parallel pressures that they refer to as “systemic vulnerability.” Applying these insights from the literature to real-world cases of unlikely enthusiasm on the part of Latin American business managers for risky innovation allows us to build theory, detailing the mechanisms through which businesses initiate efforts to break from what is known, open up to collaboration with the state, and engender the dissemination of the ever-elusive technological and organizational know-how that fuels industrial upgrading.

In this paper, we begin to develop this argument through the study of five cases in Latin America where groups of firms – and in some instances, entire industries – engaged in varying degrees of search for new models without direct assistance or pressure from the state. We focus on three areas of search for new business practices: market niches, production processes and industrial relations. A market niche search focuses on new sources of demand; a production process search addresses such supply side concerns as alternative technologies and the organization of the supply chain; and lastly, an industrial relations search turns attention to a variety of labor and employment practices. Analyzed comparatively, the cases suggest that each type of search is triggered by a corresponding source of pressure, and that engaging all three realms of search is much more likely to break the logjams that are the motivating concern of industrial policy; only one or two
forms of search may be too incremental to produce durable change in the terms of trade.

Recognizing and accounting for this variation in firm search offers a useful demand-side complement to the new industrial policy literature. It reveals how business might usefully interact with the state to trigger processes of industrial transformation. It sheds light on the conditions that might drive firm decision-makers to pursue change and accumulate indispensable information on obstacles to upgrading. It refines our understanding of the contextual forces that might replace firm decision-maker single-minded focus on short-term objectives with longer-term, systematic thinking. Most generally, it forces us to move beyond the unsubstantiated assumption that business’ role to play in industrial policy is effectuated by mere invitation, to examine the particular mechanisms through which it may take an active role.

The rest of this paper is organized as follows. Section Two reviews relevant literature by documenting the emergence of the new industrial policy approach and problematizing the role that business plays in it – its “demand side.” Section Three overviews the methods employed for this research, describing the case selection, analytical approach and data collection strategies. Section Four presents the five cases of this work. It details the search processes observed in the different firms and industries, and accounts for their variation. Section Five discusses the results and Section Six offers a conclusion.

2. An Industrial Policy Renaissance?
Industrial policy emerges historically from the problem of late development – the fact that some countries have organizations with the technology, experience, and sophisticated
coordination to outcompete late developers despite their lower factor costs (Hamilton 1791, List 1856, Gerschenkron 1962, Amsden 2008, Chang 2011). The rationale for policy to assist in the acquisition of such knowledge is that its uneven distribution, particularly in terms of knowledge at the level of organizational capabilities, will not be brought to equilibrium by market forces. Thus, we agree with Amsden in defining industrial policy as showing organizational insight into the nature of firms’ acquisition of capabilities and with Chang in defining the desired outcome as firms’ shifting from narrow, short-term goals to systemic, long-term ones (Amsden 2008 p.23, Chang 2009 p.16).

By its very title, industrial policy suggests a role for the state in correcting market failures, especially information asymmetries. This was the case for much of the early postwar history of industrial policy, when the state shaped development decisively through centralized planning, and when many developing countries saw the need to protect national markets for the purposes of incubating local industries (Prebisch 1950, Hirschman 1968). The fall of Keynesian state-led development in the late 1970s and early 1980s also resulted in a fall for industrial policy (Hall 1993), but the idea has seen a bit of a renaissance as of late. After many years of replication and diffusion (Fourcade and Babb 2002), multiple resulting crises (World Bank 2005, Rodrik 2006), and a post-global recession shift of global economic power (Wilson and Purushothaman 2003, Dailami 2011), it is clear that the laissez-faire development approach known as “The Washington Consensus” has now fallen from grace. Its potential successors, however, remain incipient (Stiglitz 2008, Wade 2010, Crouch 2011, Ban and Blyth 2013). A revived toolkit for industrial policy promises to be one of the key components of any plausible replacement.
Given the steady discrediting of the Washington Consensus laissez-faire approach to development, many scholars have weighed in on an industrial policy “revival.” The key departure from older industrial policies is that instead of the former era’s laundry list of command-and-control policies such as states setting prices, ordering market actors by dictat, and owning and operating firms (Chang 2009 p.3), the new mantra is one of assistance – instead of making decisions for them, states clear the path for firms’ endeavors by easing information bottlenecks and helping to mitigate risks. These advocates have focused either on enhancing businesses’ access to markets by lowering the risks of innovation (Hausmann and Rodrik 2003, Rodrik 2004, Cimoli, Dosi and Stiglitz 2009, Sabel et al. 2012, Stiglitz, Esteban and Lin 2013), or by investment in research and development to produce basic innovation and public goods that can support broad industries (Block and Keller 2011, Mazzucato 2013). The former approach on inducing more (and presumably better) business investment is more tailored towards developing countries, where moving up manufacturing “value chains” (Gereffi 1999) is a foremost concern, while the latter, focused as it is on basic research, tends to apply more to the most advanced economies.

A key example of “new industrial policy” for developing countries is the “self-discovery” approach, advocated for most prominently by the economists Dani Rodrik and Ricardo Hausmann (Hausmann and Rodrik 2003, Rodrik 2004). The problem according to this approach is twofold – first, businesses lack access to market information that would help them to see where new investments should be made, and second, even when this hurdle is overcome, they are unlikely to have the information necessary to consolidate their new
investments via rationalization (Hausmann and Rodrik 2003). The solution is state intervention with a distinctly light touch – state agents are encouraged to consult with the private sector to “elicit information...on significant externalities and their remedies” (Rodrik 2004 p.3). The state-as-assistant role is described as one of “strategic collaboration...with the aim of uncovering where the more significant obstacles to restructuring lie and what type of interventions are most likely to remove them.” (ibid.) Thus the model revisits the industrial policy problem of uneven information access with injunctions for the state to work as an active listener and convener to help the private sector to express its needs, with the state helping to “discover” the real costs and processes that will overcome them. Beyond shepherding such conversations, the state provides low-cost credit and rewards for export success (Hausmann and Rodrik 2003 p.32). As Rodrik (2004, p.4) notes, this model shares a great deal with Peter Evans’ (1995) concept of “embedded autonomy,” in which highly trained, impartial bureaucrats collaborate intensively with private sector actors.

While this body of research has quite a bit to say about how states can assist businesses without being heavy-handed, it frequently takes it as given that businesses will listen and vociferously respond to such overtures. There are both intuitive reasons and a fair amount of research that raise significant questions about this assumption. For example, Vivek Chibber’s comparative historical research on industrial policy demonstrates forcefully that unless the state’s industrial policies are met by business interests ready to act in the same spirit, even the best programs will be severely hampered (Chibber 2003). And as Schneider points out, the “embedded autonomy” approach (Evans 1995) to close collaboration
between business actors and highly capable state bureaucrats has thus far yielded precious little insight on how such relationships can be created, especially in the context of post-Washington Consensus political economies where the state may lack the clout of a Korea or Taiwan in the 1960s (Schneider 1998 p.117). In fact, there are models of the firm and market institutions that focus our attention on the possibility of firm inertia and private-public sector disconnects. The following discussion of these helps to frame the importance and contribution of our empirical cases.

**Problematising the Demand Side of Industrial Policy**

The notion that maximizing, in the sense of striving for the maximum achievable value of any given goal, is not the default behavior for economic actors is not novel. One well-established approach that speaks well to the businesses we observe in Latin America is the behavioral model (Simon 1997 [1947], Cyert and March 1992 [1964]), which suspends the assumption maximizing behavior. Instead, this approach posits that businesses tend to “satisfice,” meaning that they carry with them a base-level aspiration that, once reached, triggers satisfaction and the suspension of further search for change. Competition will not necessarily drive actors’ aspirations toward maximization in the long run because optimal equilibrium cannot be assumed – a critical perspective shared with much of the literature on industrial policy.² This highlights the importance of how aspirations are set and what renders them satisfied or conspicuously unresolved.

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² See Simon 1959 p.263 for comments on taking exception from the optimal equilibrium assumption. For an example of similar comments from industrial policy scholarship, see Hausmann and Rodrik 2003 pp.4-5.
A focus on decision makers who seek to meet aspirations and who settle once they are met seems especially apt for the institutional context of many developing countries. Although global capitalism makes profit-seeking a nearly ubiquitous modus operandi, local context determines to a great extent the “hows” and “for-whats” that will guide such activity in important ways - a set of issues sometimes referred to by the concept of “embeddedness” (Polanyi 2001 [1944], Granovetter 1985, Baumol 1990). The literature on “varieties of capitalism” (VoC) offers a compelling approach to embeddedness in contemporary economies by showing how locally distinct, mutually reinforcing institutions socialize actors their own set of “shared expectations” that may produce locally specific approaches to economic activity (Hall and Soskice 2001). The main institutions involved in the VoC framework include wage determination, vocational training, corporate governance, inter-firm competition dynamics, and industrial relations. Although originally put forth as a framework to understand differences between “liberal” vs. “coordinated” advanced market economies, there has been a steady stream of research which has sought to apply and/or modify this line of thinking in relation to developing and former socialist economies as displaying their own distinct “varieties” (Boyer 2005, Lane 2005, Carney, Gedajlovic, and Yang 2009, Nölke and Vliegenthart 2009, Nattrass 2014). Many of these further applications of the framework focus on how institutional environments can establish and reproduce signals that elicit non-maximizing behavior from market actors.

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3 Note that to accept the importance of embeddedness, one does not need to abandon rational choice as the main model for economic behavior. Neither Baumol (1990) nor work by Hall and Soskice on “varieties of capitalism” (discussed below) questions the primacy of rational utility maximization. Nevertheless, embeddedness and satisficing models of firm behavior show an “elective affinity” insofar as social embeddedness raises the possibility of alternative logics of behavior to rational choice.
One salient application of “varieties of capitalism” thinking to developing country contexts is Schneider’s work on primarily, but not exclusively Latin American “hierarchical market economies.” This variety, which may also have some applicability to developing countries in other regions such as Turkey, South Africa, and parts of Southeast Asia (Schneider 2009 p.572), identifies family-owned business groups, affiliates of multinational corporations, low workforce investments, and atomistic labor relations as exemplifying the array of institutions that establish actors’ expectations and the terms of competition (Schneider ibid., 2013). Economic policy is generally “business-led,” and the owners of the domestic family-owned business groups prefer their investments to be low-risk, low-technology industries with high barriers to entry. As one financial executive in a Chilean diversified business group put it, the priorities are “sectors with high profitability, regulated, but also, as a consequence, low risk and capital intensive” (Schneider 2009 p.559). It is these preferences and expectations – conditioned by large-scale institutions, but reproduced by actors – that we refer to as “inertial.”

Under these inertial conditions, it becomes less obvious how the kind of voluntary transformation implied by “self discovery” will enter the picture. Our observations across the five cases discussed below illustrate situations in which the business aspirations in hierarchical market economies may shift, offering an opportunity for theory-building regarding the enabling conditions. The conditions appear as sources of pressure that render established aspirations impossible, leaving businesses to seek new goals and means of achieving them. The main sources of pressure can be characterized as “supply shocks,” whether in the form of a production process that has been rendered untenable by intra-
industry competition or by national macroeconomic instability; “demand shocks,” in which demand from a consumer market shifts, whether due to consumer preferences, government standards, or trade regulations; and “civil society conflict,” in which social groups place pressure on businesses, usually in the form of labor/capital conflict.

We consider these pressures to be analogous to Doner et al.’s (2005) work on the “systemic vulnerability” of Asian states, wherein the satisficing goal of a minimum winning coalition can be rendered unattainable due to extraordinary pressures. In their account, the main systemic pressures on these states were internal upheaval threatening domestic governing coalitions, external geopolitical threats, and heavy constraints on the state’s fiscal resources. According to this approach, it is only when pressures mount from multiple directions that state agents take recourse to the kind of long-term, systemic investments in productivity and wellbeing that can be considered “developmental.” While our analysis of changes in business models departments from Doner et al.’s story in several important respects (see cases and discussion below), the parallel is noteworthy first because, similar to this work, they hew towards the behavioral approach to organizations when they model state agents’ efforts as oriented toward a “minimum winning coalition.” Second, they are analogous in that like Doner et al., we posit a small set of distinct forces that push organizations toward a series of search thresholds, each with its own consequences for agents’ search behavior, and with cumulative effects that appear to be more than the sum of their parts. In the case of this research, we find that when businesses engage in successful searches generated by supply, demand, and civil society shocks, the total set of changes brought about results in much more robust change than one or two searches. We
term successful search in developing country firms that results from full systemic vulnerability as a new “business model.”

3. Methods
The above discussion overviews a significant amount of work on the supply of industrial policy, which highlights a puzzling disparity with regards to what precious little has been established about the demand by business for these new practices/models. The paucity of ready examples is in keeping with the institutional contexts of “inertial” business environments. For example, in Latin America, the state of business innovation of the kind that industrial policy seeks is quite low. As was mentioned above, Schneider (2009, 2013) ascribes this to a “hierarchical” market structure in which the leading firms are predominantly either family-owned diversified business groups or affiliates of multinational corporations. The former are privately managed with effectively no public shareholder governance. In part because of their government institutions, these firms direct policy and hedge against market and policy volatility by focusing on economies of scope in low-technology sectors. This role is buttressed by the presence of multinationals, which tend to import skilled labor and to reserve their highest levels of research and development work for facilities in more advanced nations (ibid.) Moreover, these and other aspects of hierarchical market economies (e.g. low workforce investments and atomized industrial relations), as occurs with the complementary institutions of any variety of capitalism, mutually reinforce into feedback loops, shaping actors’ preferences, contributing to the continued reproduction of the institutional system, and increasing the costs to modifying the system (Schneider 2013 pp.32-33). More concretely, this means that domestic firms will be less likely to engage in innovation because of the boundaries of the
sectoral niches they have carved out vis-à-vis MNCs; that MNCs will be less likely to cultivate local workers' skills because of the low baseline level of domestic skills investment; and that local firms will be unlikely to invest in local skills for fear of poaching from MNCs.

As Table 1 below shows, R&D expenditures as a proportion of GDP in Latin America lag far behind East Asian and advanced OECD nations by a factor of approximately two to four. Within the context of these anemic R&D expenditures, the private sector’s share is disproportionately low, historically in the range of only about 10%, in Latin America (Katz 2001 p.117). Local business formation occurs under highly constrained conditions, with informality historically high and increasing increasing since the era of neoliberal reform (Perry et al. 2007 p.37), and firms’ access to domestic credit only a small fraction (20-33%) of the amount available to firms in countries in East Asia and OECD members (see Table 1). Under the inertial conditions of hierarchical markets post-liberalization, Latin American countries expanded exports rapidly without increasing their portion of value-added, leading Moreno-Brid et al. to conclude that “it is past time to give attention to the long-standing problem of Latin America’s elite failure to invest domestically in a significant way” (2005, 352-3).

The purpose of the above is not to push the strongest negative interpretation of Latin American economies, for at least two reasons: first, these conditions, in part or nearly in full, appear elsewhere. As mentioned in the previous section, many other developing countries have institutional environments that reinforce a reticence on firms’ part to take
risks and engage actively in structural economic change. Second, there is significant variation within Latin America. For example, in the 2000s, five Latin American countries had “high,” near East Asian-level labor productivity growth averages of over 3.5% per year, thirteen averaged between one and two percent, and five less than one percent (Paus 2014 p.27)4

Table 1: Indicators of inertial business environments in Latin America and case study countries

<table>
<thead>
<tr>
<th>Country/Aggregate</th>
<th>Domestic Credit to Private Sector (%GDP 2010)</th>
<th>Research and Development Expenditure (%GDP 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income OECD</td>
<td>166.3</td>
<td>2.36</td>
</tr>
<tr>
<td>East Asia &amp; Pacific (all income levels)</td>
<td>136.8</td>
<td>2.51</td>
</tr>
<tr>
<td>East Asia &amp; Pacific (developing only)</td>
<td>116.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>40.5</td>
<td>0.62</td>
</tr>
<tr>
<td>Colombia</td>
<td>43.8</td>
<td>0.16</td>
</tr>
<tr>
<td>Guatemala</td>
<td>23.35</td>
<td>0.035</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>25.32</td>
<td>No data</td>
</tr>
</tbody>
</table>

Source: World Bank Jobs Database, 2014

In this study, we selected our five cases from the three countries listed at the bottom of Table 1: Colombia, Guatemala and Nicaragua. In Guatemala, we explore the searches that took place in the apparel industry, located primarily in Guatemala City, and among the country’s sugar mills, which operate in the country’s southern, Pacific coast. In Nicaragua, we examine two sets of producers involved in the country’s cheese industry: first, a group of cheese processing cooperatives of cattle ranchers; and second, a group of Salvadorian-owned cheese processing plants. Both groups of processors are located in the largely rural, rural,

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4 It is worth noting that this nuance does not prevent the author from concluding that Latin America faces a region-wide problem of “serious gaps in social and firm level capabilities compared to other middle-income countries” (Paus 2014 p. 49)
central northern region of the country. Lastly, in Colombia we turn to the actions of producers in the apparel industry, primarily located in Medellin.

All of our cases qualify as existing in inertial environments. All three countries have been low-to-medium performers within Latin America in terms of some of the basic indicators of structural transformation, such as capital formation, labor productivity growth, and research and development (Paus 2014, World Bank). None of our cases involve sectors whose changes were prompted by state actors, and so far as we have been able to identify, none of these sectors had any prior history of being especially progressive or forward-thinking in any way so as to influence the events we documented. To prepare these cases, the authors spent anywhere from three to five months in the field, with unique interviewees ranging from 25 in Colombia to 60 in Nicaragua. Interview methods were semi-structured for the sake of learning about managers’ experiences of competing and dealing with market pressures. The first research study, regarding Guatemalan apparel, began in 2004 and ended in 2006, and the most recent research on cheese producers in Nicaragua, was conducted from 2012 to 2013. Table two below clarifies the timing, duration, and number of interviews involved in each case.

Table 2: Field research for the five cases included in this paper

<table>
<thead>
<tr>
<th>Case</th>
<th>Time period of research</th>
<th>Months in the field</th>
<th>Number of interviewees</th>
<th>Documentary followup?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guatemalan apparel</td>
<td>Winter 2004 – Spring 2006</td>
<td>5</td>
<td>46</td>
<td>Y</td>
</tr>
<tr>
<td>Colombian apparel</td>
<td>Summer 2007</td>
<td>3</td>
<td>25</td>
<td>Y</td>
</tr>
<tr>
<td>Guatemalan sugar</td>
<td>Summer 2010- Spring 2011</td>
<td>4</td>
<td>37</td>
<td>Y</td>
</tr>
</tbody>
</table>

17
In terms of study design for this paper, we have been able to draw from extensive research completed on these distinct cases to draw new patterns and implications that were not apparent in their original, separate research contexts. The power of examining all of these cases in parallel is twofold: first, they are all rare instances that diverge markedly from the normal outcomes prevailing in these environments. And second, the case selection is helpful insofar as it provides a range of variation that illustratively reinforces or “replicates” the logic of search for business innovation as an outcome of cumulative systemic pressures (Yin 1989).  

4. Variations in systemic vulnerability and firm search responses

Colombia, Guatemala and Nicaragua, the three countries where our five cases exist, represent the type of “hierarchical market economies” whose institutional arrangements elicit inertial environments and aspirations. Large diversified business groups and multinational corporations (MNCs) capture large swaths of the national economy. For instance, Bull, Castellacci and Yashara (2014) document a growing presence of MNCs in Central America, coupled with increasing diversification of large domestically-owned business groups as they consolidate their positions in domestic markets (often, by forming alliances with MNCs).

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<table>
<thead>
<tr>
<th>Nicaraguan cattle rancher associations*</th>
<th>Fall 2012-Spring 2013</th>
<th>5</th>
<th>59</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicaraguan-based Salvadorian cheese processors*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>17</td>
<td>167</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Research on the Nicaraguan cattle rancher associations and the Nicaraguan-based Salvadorian cheese producers was conducted simultaneously.

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5 More specifically, our case selection matches with Yin's category of a multiple case study involving “theoretical replication,” wherein the cases “produce contrasting results...for predictable reasons” (Yin 1989 p.46).

6 For instance, Bull, Castellacci and Yashara (2014) document a growing presence of MNCs in Central America, coupled with increasing diversification of large domestically-owned business groups as they consolidate their positions in domestic markets (often, by forming alliances with MNCs).
and East Asia. And atomistic labor relations mean that weak labor unions, high turnover, faulty mechanisms of worker-employer mediation, and high levels of labor informality prevail. The combination of these “core factors” (Schneider 2009) commonly shapes the preferences of firm decision-makers in such a way that they opt to pursue low-risk, low-technology investments in industries with high barriers to entry.

Yet, notwithstanding these inertial environments, and despite having traditionally eschewed major changes in their business practices, firms in our five studied cases suddenly engaged in active searches for new business practices, defying the risk-averse status quo. These searches pertained to three general areas of business activity: market niches, involving products and sources of demand; production processes, centered on production technologies, organization and supply chain management; and lastly, industrial relations, addressing labor and employment practices such as wages and benefits.

The scope of search in these three areas of business activity varied across our cases, however. As Table 3 shows, firms in the studied industries pursued distinct search trajectories. Some set their sights on transforming their entire business models by reconfiguring their labor relations, production processes and market niches. Others instead focused on one or two of these areas, executing only partial searches. Table 3 also suggests that these contrasting search trajectories were instigated by the extent to which

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7 For example, according to the results of the 2012 Programme for International Student Assessment, Colombia ranked among the bottom 9 countries (out of 65) evaluated in three areas: math, reading and science (Inter-American Development Bank, 2014).
8 Gasparini and Tornarolli (2007) show that informal workers (including those employed in small firms, self-employed in unskilled occupations, and employed but receiving no income) represented 61% of the workforce in Colombia, 69.6% in Guatemala and 64.7% in Nicaragua. Naturally, the possibility of these workers joining trade unions or enjoying long-term employment is low.
firms faced three conditions of vulnerability: first, demand shocks, driven by changes in consumer demand for firm or industry products; second, supply shocks, fostered by changes in intra-industry competition; and third, civil society conflict, a result of growing pressures on business, usually related to capital-labor conflicts. It is to a discussion of these conditions in our studied cases that we now turn.

Table 3. Overview of the cases

<table>
<thead>
<tr>
<th>Civil Society</th>
<th>Demand threat</th>
<th>Competitiveness / Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Industrial Relations</td>
<td>Niche-seeking</td>
</tr>
<tr>
<td>Guatemalan sugar</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Guatemalan apparel</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Nicaraguan dairy – cattle rancher associations</td>
<td>Y*</td>
<td>Y</td>
</tr>
<tr>
<td>Nicaraguan dairy – Salvadoran-owned</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Colombian apparel</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

Y: Yes  
N: No  
*: A form of pressure was indirectly felt (i.e. via an intermediary)

Environmental changes, conditions of vulnerability and systemic vulnerability

Until they encountered conditions of vulnerability, the business models of firms in our studied cases reflected their inertial contexts. Focused on satisficing, decision-makers in
these firms found little motivation to pursue changes, since they met their target aspirations with relative ease. In Guatemala, the sugar industry sold its low quality output in the protected domestic market, as it had for decades, while apparel export markets were still being explored as a possible form of investment for local capitalists, having fallen mostly under traditional forms of production for the local market. Similarly, in Nicaragua cattle rancher associations mostly avoided cheese production, and Salvadorian cheese processors in the country relied on a cost-cutting approach developed by their ancestors to produce their cheap cheese for the Salvadorian market. In Colombia, apparel manufacturing was essentially an appendage to the country’s longstanding, vertically-integrated, tariff-protected textile manufacturing firms. In none of these cases did firm decision-makers feel the need to relentlessly search for new ways of producing and increasing their profits, since their business models fulfilled their target aspirations year after year.

However, sudden changes in their environments would challenge those aspirations, rendering them unattainable. Contrary to comparable firms and industries in their countries and regions, which continued to exist in inertial environments, the firms in our studied cases encountered at least one of the three conditions of vulnerability: demand shocks, supply shocks and/or civil society conflict. These new conditions disrupted their comfortable niches, undermining their favored business approach and even calling into question their survival. In response, firm decision-makers launched desperate searches for solutions to respond to their new environment.
As Table 4 shows, in every one of our cases firms faced a demand shock that imperiled their sales outlets and called into question their product choices. Representing an analog to Doner, Ritchie and Slater’s (2005) “external geopolitical threats” insofar as they emerge primarily from sources external to export producers (demand markets), these demand shocks involved market closures, changes in market regulations, shifts in consumer preferences, and introduction of certifications or standards. They threatened firm decision-maker aspirations regarding their traditional product niches.

For instance, in the late 1970s and throughout the 1980s, Guatemalan sugar mills faced declining international raw sugar prices, the loss of their access to the U.S. quota market, and a marked reduction in domestic sugar consumption. A similar scenario unfolded among Guatemalan apparel firms. They encountered the same shrinking, recessive domestic market in the 1980s, and during the 1990s were forced to deal with an increasingly liberalized international trade environment.

In Nicaragua, following the Sandinista electoral loss of 1990s, cattle rancher associations lost the relatively stable, subsidized market of state-owned industrial dairy plants that they had supplied under the revolutionary regime. Dire national economic conditions also depressed local markets for artisanal cheese produced on ranches. As a result, ranchers could no longer rely upon these traditional markets. In the same country, but years later,

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9 Declining demand coincided with a period of world overproduction of sugar, shrinking international raw sugar prices by as much as 70% between 1977 and 1979 (Molina 2005, USDA 2008). In the midst of this changing context, the US government tightened its protectionist measures, slashing Guatemala’s quota by almost 80% between 1981 and 1982 (Oglesby 2000, ASAZGUA 1981). Domestically, the mills encountered comparable demand challenges: sugar sales in Guatemala fell by almost 25% in the early 1980s as the country entered a pronounced economic recession (ASAZGUA 1984).
Salvadorian cheese plants encountered their own demand troubles. These plants exported all their cheese output to El Salvador. But, in 1998, the Salvadorian government ratified a consumer protection law which, among other things, required pasteurization of all dairy imports, site visits and processor certification by Salvadorian health inspectors, and registration of all cheese importers. Because most of the Salvadorian plants’ production “did not follow hygienic milk collection procedures, nor pasteurize their raw milk, they were prohibited from selling to El Salvador” (Perez-Aleman 2011, 181).

Finally, in Colombia, between the late 1980s and early 1990s, tariffs, currency restrictions, foreign investment and labor market regulations underwent radical change. For example, in the mid-1980s, the country had the highest tariff levels in Latin America; by 1992, they were the second-lowest in the region (Urrutia 1994 p.286). At around the same time, a government subsidy for apparel exports known alternately as the “certificate of tax reimbursement” or the “certificate of tax payment” (CERT / CAT) was red-flagged by the US Department of Commerce in 1985 as an illegal subsidy. Soon after, the apparel industry agreed to give up the system and had to demonstrate that the revenues still held by the central bank would not subsidize exporters directly. This was merely the final blow in a complete shift in the shape of the demand market that these producers enjoyed; it signaled that producers could no longer benefit from a restricted, protected market and would have to reconsider who would buy from them.

To summarize, in all these cases the demand crises rendered firm decision-maker market niche aspirations unattainable, thrusting firms into a search for new markets and products.
For example, owners and managers from Guatemalan sugar mills openly recognized the radical reappraisal of their markets that the 1970s and 1980s demand crisis forced upon them, as they began to explore possibilities even in seemingly inconceivable geographical locations, such as the Soviet Union. In a comparable manner, in Nicaragua ranchers described how they found themselves bereft of their trusty sources of demand and began exploring the possibility of producing cheese. Or, to give a third example, the Colombian apparel sector turned to exports as a possible solution to the decay and eventual abandonment of the country’s old import substitution model.

Table 4 shows that, with the exception of the Colombian apparel cases, firms in the studied cases also faced supply shocks which directly impacted their production processes and aspirations. Supply shocks represent a parallel to Doner et al.’s (2005) “constraints on the state’s fiscal resources,” insofar as they restricted firm capacity to respond to the new demand-competitive environment. Arising as a result of the rapid market entry of additional, more sophisticated firms, these supply shocks rendered decision-maker production aspirations outmoded. They spawned increased competition for both inputs and markets, eroding the “slack” that established firms had enjoyed and revealing the inefficiencies of existing production approaches and technologies.

For example, the established Guatemalan sugar mills faced a growing field of competitors, as the number of mills in the country nearly doubled between 1974 and 1978. This expansion triggered aggressive competition for the industry’s main input, sugarcane, sparking a price war in the domestic sugarcane market. As established firms struggled to
respond, the supply shock unmasked the major limitations of the traditional production organization and technology, which constrained their capacity to increase their productivity, given the scarcity of sugarcane, in any significant way (Molina 2005, Wagner 2007, ASAZGUA, 1981, Oglesby 2000).

In Guatemala’s apparel industry, in turn, a wave of technically advanced Korean firms entered the country in the late 1980s. Domestic producers, beholden to a production model less sophisticated than the Koreans, were increasingly relegated to lower value-chain positions. Conditions for both the original Guatemalan producers and the new Korean plants in the country only worsened in the mid-1990s, with the rapid rise in exports from large, populous and very low-wage competitors in East and Southeast Asia.

In Nicaragua, the supply shocks affecting rancher associations and Salvadorian-owned processing plants were distinct. For the cattle ranchers, the supply shock came in the early 1990s, when a large number of demobilized military forces from the Sandinista and Contra armies returned to their pre-war activities in cattle ranching. With their return, milk production rapidly increased, disrupting price stability and generating significant difficulties for established rancher associations. The supply shock affecting the Salvadorian producers, in turn, arose in the late 1990s. During this time, individual and cooperative entrepreneurs – including many of the cattle ranching associations – erected a growing number of cheese processing plants. The expanding population of processing plants provoked a war for higher quality raw milk, engendering severe supply problems for Salvadorian plants.
In these four cases in which firms faced supply shocks, decision-makers were forced to reconsider their production process aspirations. For instance, in the late 1990s Salvadorians producing cheese in Nicaragua could no longer simply bid raw milk prices down. Competition for this indispensable input had increased to such an extent that, despite growing raw milk production in the country, its prices – particularly high quality milk prices – rose. Similar aspiration changes among decision-makers followed from supply shocks in the Guatemalan sugar and apparel industries, and among Nicaragua’s cattle rancher associations.

Lastly, as Table 4 suggests, in only two of our cases, the Guatemalan sugar and apparel industries, did firms also encounter civil society conflicts, which are analogous to the “internal upheaval” that Doner, Ritchie and Slater’s (2005) see as threatening the “governing coalitions.” In our two cases, those conflicts primarily centered on demands to improve the conditions of work for firm employees, placing tremendous pressure on firm decision-makers to change their industrial relations arrangements. Emerging alongside the demand and supply shocks, they generated what we call instances of systemic vulnerability among Guatemala’s sugar mills and apparel producers.

Guatemala’s sugar mills encountered widespread mobilization and civil strife as labor and guerrilla organization exploded in the mid to late 1970s and early 1980s, military coups multiplied, and brutal warfare spread across the country. In mills, workers formed unions, struck and even created an industry-wide confederation (FETULIA) (Oglesby 2000, Bossen
On plantations, cane cutters organized the paradigmatic “zafra” strike of 1980 that involved over 80,000 workers and paralyzed production (Jonas 1991, Porras 2009).

Similarly, the Guatemalan apparel producers encountered a tremendous degree of instability and uncertainty endemic throughout the country’s economy and society for the first half of the 1980s. Two military coups between 1982 and 1983, brutal warfare in large swaths of the country’s predominantly rural territory, and shocking events of public violence such as the burning of the Spanish embassy contributed to the atmosphere of social disruption. In the particular case of the Korean firms operating in the country, problems also erupted around their highly controversial systems of labor control, as high-profile congressional investigations and scrutiny from the Ministry of Labor challenged their industrial relations approach.

In a third case, Nicaraguan cattle rancher associations encountered “indirect” civil society pressures during the 1990s, since they arose not out of national contexts of social disruption, but rather from the actions of foreign aid agencies. Closely aligned with the Sandinista revolutionary project, these agencies made their technical and financial support for the rancher associations contingent on improvements in labor conditions. Thus, as supporters of the Sandinista revolutionary objectives, these agencies introduced the civil society pressures through the backdoor. At the same time, because they lacked the leverage of a striking workforce or attacking guerrilla, their pressures on rancher associations proved less coercive than those observed in Guatemala.

Table 4. Summary of the environmental shocks, by type
<table>
<thead>
<tr>
<th>Case</th>
<th>Demand shock</th>
<th>Supply shock</th>
<th>Civil society shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guatemalan sugar mills</td>
<td>Domestic economic recession, falling international demand and prices, collapse of U.S. quota market</td>
<td>Increasing number of mills increases competition for inputs, markets</td>
<td>Mill worker, cane cutter and guerrilla mobilization in national context of civil disarray</td>
</tr>
<tr>
<td>Guatemalan apparel plants</td>
<td>Domestic economic recession (1980s), changing international trade regime (1990s)</td>
<td>Korean manufacturers hold early advantage through higher capital investment and productivity (1980s and 1990s)</td>
<td>Social pressures of forced migration and urban underclass motivate creation of firms (1980s); investigations and scrutiny from Labor Ministry in 1980s/90s</td>
</tr>
<tr>
<td>Nicaraguan cattle rancher associations</td>
<td>Domestic recession, collapse of stable, subsidized market</td>
<td>Growing number of dairy ranchers lead to oversupply in early 1990s</td>
<td>None</td>
</tr>
<tr>
<td>Nicaraguan Salvadorian-owned cheese plants</td>
<td>Rapid tightening of main market due to new government regulations</td>
<td>Growing number of processing plants increases competition for high quality raw milk, Salvadorian market</td>
<td>None</td>
</tr>
<tr>
<td>Colombian apparel plants</td>
<td>Rapid market liberalization (late 80s/early 90s) bleeds into restructuring of global apparel market (1990s)</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

In these cases of direct and indirect civil society shocks, prevailing industrial relations arrangements proved incompatible with the new conditions, threatening the industrial peace that firm decision-makers had come to expect. In Guatemala’s sugar industry, for example, the traditionally repressive practices favored by mills and sugarcane plantations to control workers only led to exacerbated confrontations and strengthened labor organization. In Guatemala’s apparel industry, in turn, business owners invested in a relatively new sector in the hopes that they could purchase market predictability by investing in social stability; thus the shop floor was perceived as a tool for integrating rural
populations into the capital city, making investments in worker welfare to help stabilize roiling labor markets.

Along with the demand and supply shocks, civil society conflicts created existential challenges for firms. These three conditions of vulnerability undermined decision-maker aspirations, compelling them to search for new business practices. Crucially, different conditions of vulnerability instigated distinct searches. Indeed, as the following section shows, the thematic areas of the searches undertaken were in large part determined by the problems that the conditions of vulnerability highlighted.

**Search**

The firms in our cases faced a varied range of environmental changes wrought by conditions of vulnerability. On one end, firms in the Guatemalan sugar and apparel industries encountered systemic vulnerability, as demand and supply shocks, along with civil society conflicts arose. On the opposite end, Colombian apparel producers faced only a demand shock, as the country abandoned the old import substitution industrialization model. Between these two extremes, the Salvadorian cheese producers in Nicaragua responded to a demand and supply shock, while cattle rancher associations were additionally affected by an indirect civil society conflict introduced by foreign aid agencies.

The subsequent experiences of these cases illustrate how the conditions of vulnerability affected the search processes of firm decision-makers. As Figure 1 describes, the searches varied across our cases. This variation responded to the conditions of vulnerability that
they encountered. The Guatemalan sugar and apparel producers, facing systemic vulnerability, embarked upon aggressive wide-ranging searches for new business models. Their efforts targeted their industrial relations, production processes and product/market niches. From a development perspective, these searches offered the most promising prospects out of our five cases: they focused on possible innovations not only in the processes of production and marketing strategies, but also in the labor conditions of the workforce.10

For instance, in Guatemala’s sugar industry, owners and managers participated in numerous joint efforts to find new markets (e.g. Venezuela, Mexico and the Soviet Union), improve conditions in their existing markets (e.g. the United States quota market), reorganize production (e.g. negotiations with cane producers) and develop productivity-enhancing projects (e.g. training for administrative staff in the tripartite national training institute (INTECAP), plans for a new port, cane research stations). Mill decision-makers’ also pursued independent efforts to restructure their production organization, including their wage and hiring policies, by negotiating with unions, visiting other sugar industries around the world, and employing specialized consultants.11

The Guatemalan apparel industry offers a similar search scenario. Local producers, often with support from the United States Agency for International Development (USAID), examined different Guatemalan approaches to labor relations, and looked to Korean

10 Echoing Schrank (2004), we believe that by possibly leading to the adoption of entirely new business models previously unknown to and untested by competitors, such searches could furnish the innovative firms with the type of “oligopolistic underpinnings” that characterize “developmentally nutritious sectors.”

11 For a more detailed description of these changes, see Fuentes (2014).
manufacturers for lessons on scale and full-package production management. To encourage experimentation and the adoption of new practices, the apparel exporters’ association (VESTEX) also formulated, with Korean and Guatemalan partners, a thirteen-course series in full-package manufacturing systems that was completed by forty firms between 1999 and 2005. In addition, VESTEX partnered with the national tripartite training institute (INTECAP) to develop training programs for the industry’s workforce on full-package production, and design and buyer consulting services; and spearheaded a search to find new buyers for the industry’s products. Lastly, during the mid- to late-1980s, apparel producers vigorously pushed for increased government support for duty-drawback manufacturing, eventually obtaining a comprehensive “maquila” law that facilitated the industry’s rapid growth in the late 1980s and early 1990s.

If the Guatemalan sugar and apparel producers engaged in extensive searches for innovations in their industrial relations, demand niches and production processes, on the opposite end of the spectrum the search scope among Colombian garment firm decision-makers proved much narrower. Facing only a demand shock, they endeavored single-mindedly to find new sources of demand by expanding and fortifying their positioning in specialized demand niches. They focused on developing their garment design and fashion capacity by hiring design teams to target difficult-to-win foreign consumers in the United States and wealthy European Union countries, creating the Institute for Exports and Fashion (INEXMODA), and organizing two large yearly trade fairs that draw crowds of

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12 Interestingly, while INEXMODA appears to recognize that there are many other important aspects determining the finding and meeting of foreign demand – from supply chain management to firm productivity to client relations – they have overwhelmingly focused on fashion design as their key intervention.
close to 15,000 visitors each (Inexmoda 2012). They also publish fashion publications, run colloquia with presentations from foreign consultants and buyers, and offer courses on fashion, design and marketing (e.g. “color theory,” “clothing categories and consumer profiles”) (CCMA 2007 p.139). Notably, Colombian apparel producers have largely sidestepped possible changes to their industrial relations and production processes.13

Falling between the ambitious searches pursued by the Guatemalan sugar and apparel producers, on the one hand, and the narrow inquiry of the Colombians, on the other, the Salvadorian owned cheese plants and the cattle rancher associations in Nicaragua engaged in searches that centered primarily, though not exclusively, on innovations in their production organization and demand niches. For example, some of the Salvadorian owners of cheese plant owners reached out to the Nicaraguan state and its inspectors from the Ministry of Health and the Environment, seeking ways to address their deficient hygiene and environmental standards, and the growing competition from new cheese processors. Others worked with the Institute for Rural Development, a state agency that supported small- and medium-sized firm development. The sought to develop new pasteurized versions of their main cheese, the “morolique”, and to transform their production processes. Still others experimented with different types of cheese altogether, most notably the unpasteurized “quesillo salvadoreno.” Tellingly, all of these Salvadorian-owned cheese producers failed to address their industrial relations.

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13 For a more detailed description of the Guatemalan and Colombian apparel cases, see Pipkin (2011).
The cattle rancher associations, in turn, similarly searched for alternative production processes and markets. In this search they approached the state, foreign aid agencies, MNC subsidiaries, Salvadorian merchants and cooperative associations during the 1990s.\(^{14}\) Several of these rancher associations would eventually build processing facilities with support from international aid agencies. As they upgraded into cheese processing, the cattle rancher associations expanded the scope of their searches to include new industrial relations approaches. In this endeavor, they were responding to the growing pressure from the foreign aid agencies, which made their technical and financial support for the rancher associations contingent on improvements in labor conditions.

Figure 1. Vulnerability and search in the studied cases

[Insert Figure here]

5. Discussion
This study focused on five empirically surprising cases of business-led industrial transformation. The cases are surprising both because of their outcomes – which to varying degrees illustrate the difficult-to-achieve goals of industrial policy – and because of their causal origins. How to instigate upgrading of the kind where the perspective of the firm is broadened beyond short-term profits to long-term, more systemic, and broader stakeholder concerns is a perennial goal for scholars of economic development, especially in Latin America (Bruton 1998, Hausmann, Rodrik and Velasco 2008, Jankowska, Nagengast and Perea 2012). Just as importantly, these cases reveal contingencies in

\(^{14}\) Perez-Aleman (2013), for instance, describes how ranchers who eventually organized a cheese processing cooperative engaged in “alternative search strategies” to address some of their weaknesses in raw milk production and develop new sales opportunities. Leguizamon (2002) describes how ranchers in another rancher union searched for processing options and market outlets for their raw milk. Similarly, in its project overview, the Finnish aid agency (FINNIDA) also notes how it extended and expanded its so-called PRODEGA project for dairy development in response to the “request of the farmers” (Eskola 2003).
industrial change that are not addressed by any theories of the state that tend to undergird industrial policy scholarship.

In none of the industries involved did local government actors induce firms’ changed behavior, at least not in any industrial policy sense of creating incentives for the acquisition of new information. Nor was there any established prior within-sector or national-level proclivity towards innovation or transformation in these cases. That is to say, all of these firms operated in broader sectors and national economies that were quite inertial before they transformed. Nor was their transformation prompted by a “natural” process of market learning, such as buyers asking them to lower their costs incrementally, or to offer a series of new functions or service related to their product. Rather, we found that businesses tend to only undertake the kind of fundamental re-evaluations that industrial policy seeks when business-as-usual is conspicuously obstructed or otherwise unavailable. More broadly, we find that for business strategies to shift, business aspirations need to shift. How those aspirations shift in developing economies has been relatively underexplored, leaving a gap in the literature on industrial policy.

Our cases suggest that the discrete pressures of systemic vulnerability relate in a patterned fashion to the types of search that firms pursue. These findings illustrate that good industrial policy requires an organizational theory of the firm. Neither scholars nor practitioners can assume that the base case for capitalist competition is firms ceaselessly innovating to survive. Rather, firms, and perhaps especially those in hierarchically-organized and/or inertial market economies, tend to stay within a niche – i.e. “satisficing”
to meet a certain set of minimum target aspirations – until something interrupts this pattern and renders their aspirations suddenly outside of reach or unavailable. This finding is cause for optimism in the sense that it suggests a certain universality to the possibility of change, even in environments that tend to stubbornly reproduce the status quo. At the same time, it establishes a higher threshold for business involvement than had previously been considered in most scholarship on industrial policy.

Based on the graduated changes from niche-finding only in Colombian apparel, to niche-finding plus production system redesign in Nicaraguan dairy industries, to niche-finding, plus production redesign, plus new industrial relations models in Guatemalan apparel and sugar, it seems that we can ascertain two main dynamics of systemic vulnerability-induced business transformation: first, that these three main areas of pressure on a business trigger their own, thematically independent (though not exclusive) areas of search for businesses to undertake. The fundamentally independent but ultimately interactive nature of these causes means that while it is possible to see spillovers and interactions between causes and effects, we limit the categorization of factors to the proximal cause that triggers’ firms’ search behavior. And second, our finding most in harmony with the original use of systemic vulnerability by Doner et al. (2005) is that the three forms of pressure accumulate together to force a comprehensiveness of search that is most “developmental” when compared to undertaking just one or two search themes.

\[\text{\textsuperscript{15} Thus, for example, a demand shock of a destination market eliminating trade quotas also implies that the firms whose quotas are removed are competitive threats, which one could argue should be categorized as a supply shock. But if we can observe that firms first took action at the announcement of the elimination of a trade quota, then that is a signal originating from demand markets, and therefore for our purposes a demand shock.}\]
There are several important limitations to the broad finding that the factors of systemic vulnerability have important individual and combined effects on firms’ search for new business strategies. First, unlike Doner et al., we do not draw conclusions about the developmental consequences of the initiation of search; in fact, we believe that this investigation is only the beginning of a broader research agenda regarding the business side of industrial policy. Based on the cases examined here, search processes have unique contextual determinants regarding group identities, politics, network connections, and readily available ideas that are likely to be decisive in what search results business actors arrive at. Furthermore, the results of a given search effort cannot be assessed without some information regarding the market contexts in which they are applied.

Our findings suggest a less deterministic model than Doner et al’s on the causal end as well, insofar as the “shock” aspect of systemic vulnerability’s components do not appear to require a strict temporal simultaneity. In the cases of systemic business model change in the two Guatemalan cases, for example, there were time lags between components of systemic vulnerability (e.g. between supply and demand shocks in Guatemalan sugar, or between civil society and supply shocks in Guatemalan apparel) of five to ten years. What seems to be important in these two cases is that each factor displayed sufficient urgency to be integrated into firms’ business models, such that when subsequent changes were made, they were cumulative. In this way, two or three phases of change over ten or more years could possibly result in an across-the-board revision as regards demand niches, production systems and industrial relations. Yet in the case of Nicaraguan dairy cooperatives, we can
see how the temporal and social mediation of individual factors can dampen their impact – thus, managers for whom proposals from the Sandinistas were anathema accepted Sandinista-like cooperative models when they were tied to European foreign aid, but without the comprehensive fervor of the Sandinista regime, adopting the model did not radically alter existing industrial relations.

6. Conclusion

With the fall of the Washington Consensus, industrial policy has been experiencing a renaissance. The new and improved industrial policy approach, particularly in its self-discovery variant, abandons the command-and-control mechanisms of the past. Instead, it recognizes the allocative efficiency of competitive market prices and prioritizes state assistance and multi-sectoral dialogue. While the approach represents a refreshing alternative to the Washington Consensus, it struggles on a number of fronts. We focus on one of these fronts: the state-business interface.

We suggest that the assumption that business will relentlessly pursue transformations to maximize profits, and in the process enthusiastically respond to state overtures to collaborate and share information, is unwarranted. Firms will often prefer the status quo, shunning close relationships with state bureaucracies, and avoiding the type of experimentation that offers necessary information on barriers to upgrading.

If we cannot take it as given that firms will assiduously maximize and innovate, then it becomes much more important to account for how businesses choose to engage in searches to transform their models. We offer an account founded upon three pillars: Simon (1997 [1947]), and Cyert and March’s (1992 [1964]) behavioral approach to firms as “satisficers,” Schneider’s (2013)
“hierarchical market economies” (HMEs), and Doner et al’s (2005) “systemic vulnerability.” In short, combining these three frameworks offers a solid basis for analysis firm behavior as a) oriented towards meeting, and not exceeding, set aspirations that are b) strongly conditioned by complementary sets of local institutions, sometimes resulting in inertial conditions that c) are only broken when certain specific types of threats conspicuously render actors’ aspirations as unmet.

The five cases of this work bear out and add specificity to this approach. After years of limited change, the studied firms and industries suddenly engaged in varied searches for new practices and business models. They did this in the absence of state support, when firms in the same industry but in neighboring countries remained reluctant to change, and while firms in different industries within the same country retained their business models. We have argued that the observed searches, and the variation across them, can be explained, at least in part, by the conditions of vulnerability facing the different firms and industries. By affecting decision-maker aspirations in varying ways, the combinations of vulnerabilities elicited the different search processes.

The empirical cases are also suggestive for future research avenues. In light of these findings, we propose to loosen inquiry from a narrow set of questions about certain bureaucratic activities offered by the state to business, toward a broader effort to problematize the shift of firms’ aspirations from narrow, short-term goals to systemic, long-term ones. Following from this logic, industrial policy should strive to foster search among business, to shape the nature of firms’ acquisition of capabilities, and to strengthen decision-makers’ ability to problem solve in capitalist games that are mediated by local rules. It should elicit learning among decision-makers by actively challenging them to broaden their horizons, not asking what is on their mind and assuming that their response is the voice of optimality. This broader effort should focus on producing transformed business models.
Recognizing this broader role for industrial policy brings to the fore a central contribution of this work to the literature on industrial policy and self-discovery: the explicit discussion of a theory of the firm. The self-discovery literature’s favored policies, which focus on easing information bottlenecks and managing risk, are useful only if decision-makers have an interest in transforming their firms. Yet this obtains only infrequently in much of the developing world for reasons that fit with a behavioral approach to firms satisficing under shared expectations that are established by different varieties of capitalism. As we have argued, vulnerability in the form of crises in the marketplace can provide the impetus to overcome such persistent inertia. But the definition of industrial policy suggested by our research also implies that this is only one way to foster widespread business model transformations. Indeed, we should recognize that seismic events in the political economy constituting instances of systemic vulnerability are not necessarily much more prevalent than enlightened leaders or “islands of bureaucratic excellence.” This introduces important scope conditions for our argument, but also offers a stimulus to find alternative, yet constructive ways of mimicking systemic vulnerability in order to induce firms and industries to both search for new business models and collaborate with state bureaucrats.

One promising avenue to explore the possibility of deliberately inducing search is offered by the regulation literature (Schrank et al. 2013). This literature addresses the role of different regulatory environments “simultaneously forcing and enabling producers to pursue unpopular or unfamiliar practices that are nonetheless in their own self-interest” (Schrank 2013, 488). Its focus is on national regulatory agencies, such as labor, environmental and health and safety inspections (Piore and Schrank 2008, ibid.). It examines how these agencies, and particularly their inspectors, enforce national standards and, in the process engage with firm decision-makers, elicit information sharing, and foster industrial upgrading.
This literature dovetails with our argument in two ways. First, it reveals an alternative mechanism through which firms are motivated to search for new practices and business models. By deploying regulatory “sticks” (Pires 2008), the inspectors render the traditional approach – and, as a result, decision-makers’ aspirations – unworkable. Like the three conditions of systemic vulnerability, the different types of inspections affect the three realms of business activity – industrial relations (e.g. labor standards), production processes (e.g. environmental standards), and demand niches (e.g. health and safety standards) – driving changes in decision-maker aspirations.

Second, the regulation literature illustrates a constructive approach to working with satisficing firms: the collaboration that often arises in instances of “rewarding regulation” (Schrank 2013). In those instances, the interactions and information sharing primarily take place among firm decision-makers and regulators. The inspector that acts as a “business consultant” has become the paradigmatic figure of this literature (Piore and Schrank 2008). However, one could conceive of such interactions spawning beyond regulatory agencies and bureaucracies to include those charged with industrial policy. Indeed, preliminary research in Nicaragua’s cheese industry suggested a growing integration of regulatory and industrial policies, particularly in the case of environmental inspectors working closely with bureaucrats from the national ministry dedicated to small firm and cooperative promotion (i.e. Ministerio de Economia Familiar, Comunitaria, Cooperativa y Asociativa). Moreover, standards could extend beyond those enshrined in domestic legislation to include private regulation initiatives such as those discussed in the literatures on global value chains and private certification schemes (e.g. Dolan and Humphrey 2000, Jaffee and Masakure 2005, Locke et al. 2009, Henson et al. 2011, Distelhorst et al. 2014). State agents themselves could encourage firm innovations via private prerogatives by assisting firms to meet or possibly exceed these private standards.
In addition to serving as a useful complement to the self-discovery literature, this work also contributes to the discussion on systemic vulnerability. Systemic vulnerability arose with the goal of explaining the emergence of “developmental states.” It accounted for these historical anomalies by claiming that three kinds of threats (broad coalitional commitments, scarce resource endowments, and severe security threats), when they appear simultaneously, increase the institutional capacities of states to make them “developmental” (Doner et al. 2005 pp.328-9). We build on this intriguing approach, expanding its scope beyond the state to focus on business as well. We construct analogous conditions of systemic vulnerability applicable to business: civil society, supply and demand shocks. In contrast with Doner et al. (ibid.), we find no evidence that the threats of systemic vulnerability must be simultaneous to induce a cumulative effect of building capacity in different arenas – in our cases, elements of systemic vulnerability could appear place five or ten years apart, but could still induce successful searches whose impacts were cumulative. We also refine the argument by reconsidering the outcome to be explained. In particular, we suggest that the theory proves most insightful when the outcome is not the generation of specific capacities, but rather attempts to learn or build them. We believe that a separate theory, one that takes into account the supply of available alternatives, the proclivities and capacities of actors to select and absorb them, and the fit between new models and their external environments is needed to explain when searches result in successful organizational rebuilding.

Future research should expand the body of cases used to inform the theory that we propose. One body of work that offers a wealth of cases to explore is the Global Value Chain (GVC) literature. This large and growing literature could not only supply test cases, but could also serve as a rewarding ground for theoretical advancement of this argument. Speaking more broadly, our cases and analysis can hopefully serve as an invitation to rethink some of the classic problems of development
by taking neither state or private sector capacities for granted, and centering the theoretical focus on the drivers of developmental learning in the global economy.
References


