Economics Synopsis
Business models and firm performance

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Introduction

Economists have long puzzled over the large differences in performance between firms and countries, both in terms of productivities, market shares, and participation in the export market. The industrial organization literature has demonstrated that differences in productivity are huge, even when comparing firms that belong to very narrowly-defined industries. The international trade literature has shown that measures of performance in the export market are also widely different across firms and countries, and are significantly, but not exclusively, related—in both directions—to differences in productivity measures.

This article is built around five key issues in the economic literature on managers, management practices, corporate reorganizations and firm performance. First, we document the large difference in performance across firms within narrowly-defined industries, and argue that this heterogeneity at the firm-level is relevant for policy purposes since it translates into large differences in performance at the country-level, and in differential learning opportunities for workers. Second, we claim that economic research can provide solid answers to the question of how these large differences in performance arise, thereby representing an essential tool for policymakers. Third we document the large heterogeneity in management practices across firms and countries, the frequency and characteristics of corporate reorganizations, and the transition of managers across firms with different internationalization status. Fourth, we discuss the key issue of establishing a causal relationship from management practices, managers' quality, and firms' organization to firms' performance. Finally, we provide a list of policy-relevant takeaways.

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Large differentials in performance across firms

In the first part of this article we summarize the existing evidence on the heterogeneity of firms, by comparing firms at a given moment in time—the cross-sectional distribution—, by following them along the life-cycle, and by measuring their success in the export market. Firm-level patterns are important to understand differences at the aggregate level, like differentials in income per capita across countries, and the resilience of countries to international crises.

Cross-sectional differences in productivity. The cross-sectional distribution of firms or plants reveals that differences in the level of productivity are huge: using disaggregated data on four-digit U.S. manufacturing industries (e.g. "Bakeries and Tortilla Manufacturing" or "Plastics Product Manufacturing") from the 1977 Census of Manufactures, Syverson (2004) found that plants at the 90th percentile produced four times as much as plants in the 10th percentile on a per-employee basis.[1] Only about half of this difference in labor productivity could be accounted for by differential inputs, such as capital intensity: considering total factor productivity instead of labor productivity, the average 90-10 percentile productivity ratios across industries are about 2 to 1 or 2.7 to 1, depending on the measure of total factor productivity used. These large differences in productivity exist even for goods that are very homogeneous—for which we do not expect to see significant differences in quality: Foster *et al.* (2008) show large differences in total factor productivity even within very homogeneous goods industries such as production of boxes and block ice.

Life-cycle dynamics. New firms tend to be small in size and, conditional on survival, grow substantially as they age. Hsieh and Klenow (2014) show that in the United States, the average 40-year-old plant employs more than seven times as many workers as the typical plant 5 years or younger. Similarly, Cabral and Mata (2003), using data from the Portuguese matched employer-employee dataset *Quadros de Pessoal*, find that the average size of Portuguese firms with 30 or more years is at least seven times larger than the average firm with 4 years or less.[2] The pattern of firm dynamics in developing countries

1. A key distinction that is made in the productivity literature is between quantity-based productivity (or physical productivity or TFPQ) and revenue-based productivity (or TFPR). The distinction is crucial since the first measures how effective is a firm in transforming inputs and factors—like capital, intermediate goods and labor—into output, while the other measures how effective is a firm in transforming inputs and factors into sales, and therefore also measures any price variation, perhaps related to markups, that results from market power.

2. Cabral and Mata (2003) estimate an extended generalized gamma distribution, a very flexible distribution that can capture both positively skewed, symmetric, and negatively-skewed distributions. They document that the firm size distribution is quite positively-skewed (long

seems to be quite different: In India and Mexico the ratio between the size of 40-year-old and 5 year-old or younger plants is only 2, suggesting lower investments in process efficiency, quality, and in accessing markets at home and abroad.
One reason for this differences in size growth between developed and developing countries could be associated to education. Queiró (2018), using data for Portugal, finds that only highly educated entrepreneurs are able to undertake those innovation activities (e.g. new production techniques, management practices, organizational design, product upgrading...) that can enhance productivity and spur firm growth. The author finds that when comparing firms whose entrepreneurs have 15 or more years of schooling with those whose entrepreneurs have 6 or less years of schooling, the former are 23 percent larger at entry, and 75 percent larger after 20 years.

Productivity or Demand? Is the increasing age-size profile that we observe mostly in developed countries associated to higher productivity of older firms (or plants)? Foster *et al.* (2016) find that the difference in size between young and old firms is not associated to significant differences in measures of physical productivity. Young firms are as productive as old firms, but they have not built a large customer base yet. A recent paper, Forlani *et al.* (2016), paints a more nuanced picture pointing to a trade-off between product appeal and physical productivity. In Forlani *et al.* (2016) the authors develop a new procedure to jointly estimate firms' product appeal, quantity-based productivity and markups without imposing, unlike the previous literature, any correlation between the three variables.[3] Using Belgian data at the firm-year-product level, they find a strong negative correlation between TFPQ and product appeal. They provide a very neat example, to explain this finding, based on the car industry where:

"...there is the co-existence of manufacturers (like Nissan) producing many cars for a given amount of inputs...and manufacturers (like Mercedes) producing much less cars for a given amount of inputs...At the same time,

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tail at the right) for new firms, and then becomes more symmetric—almost approaching a log-normal distribution— as firms age.

3. Most of the literature on productivity estimation relies on the so-called "proxy-variable approach". The key endogeneity issue that the econometrician has to face when estimating a production function is omitted variables: the firm observes and takes decisions based on productivity shocks that are unobservable to the econometrician. As suggested in Olley and A. (1996), the econometrician can resort to observable firm decisions—like investments—that do not impact productivity today and that can, under certain conditions, be used as a proxy for productivity shocks. This proxy variable approach has been further developed in Levinsohn and Petrin (2003), Wooldridge (2009), Ackerberg *et al.* (2015) and De Loecker *et al.* (2016). Forlani *et al.* (2016) depart from the "proxy-variable approach" by introducing demand heterogeneity and exploiting both the revenue and quantity equation.

however, Mercedes produces cars of a higher quality...and so the equilibrium price of Mercedes will be higher than the Nissan price...Mercedes and Nissan face very different demands which leads to different prices as well as different markups. Both plants are profitable and perhaps generate a very similar revenue productivity...Yet, their business model is quite different..." (Forlani *et al.* (2016))

Export Performance The international trade literature of the last 20 years has focused on firm heterogeneity. Participation in the export market is a rare and concentrated activity: only 4 percent of U.S. firms were active on the foreign market in 2000 and, among these, the top 10 percent accounted for 96 percent of U.S. exports (Bernard *et al.* (2007)). International trade is dominated by very large firms: Intel is the largest industrial employer in both Oregon and New Mexico and accounts for 20 percent of Costa Rica's exports (Melitz and Trefler (2012)). Participating in the export or import markets is a difficult task. In Portugal, the exit rate of new exporters is particularly high in the first year of life, as almost one out of three exits foreign markets. The ratio of exports per firm increases on average about 70 per cent in the first year of the cohort, meaning that those that survive strongly increase exports (Amador *et al.* (2017)). Forlani *et al.* (2016) show that the dividing line between firms that import and firm that do not is positively associated to the scale of the firm—larger firms are more likely to be importers—to firms' physical productivity, and to the appeal of their products.
The literature on gains from trade focuses on three sources of gains: 1) love for variety associated to intra-industry trade, 2) allocative efficiency gains associated to shifting production inputs from less productive to more productive firms, and 3) productivity gains associated to trade-induced innovation activities (Melitz and Trefler (2012)).
Both the participation in the foreign market, and the sources of gains from trade can then be linked to differences in firms' characteristics.

A better understanding of the sources of firm performance, both in the domestic and the foreign market, is important not just in itself but also for, at least, two other reasons: first, differences in firms' performance may turn into differences in performance at the country-level; second, differences in firms' performance may map into differential learning opportunities for their workers. We elaborate on both aspects here below.

Aggregate effects. Large differences in performance across firms may map into large differences in performance across countries. Based on their evidence about the steeper age-size profile of plants in the U.S. compared to Mexico and India, Hsieh and Klenow (2014) find that, in simple general equilibrium models, the difference in life cycle dynamics could lower aggregate manufacturing productivity on the order of 25 percent in India and Mexico relative to

the United States.
Caliendo *et al.* (2015a) show that corporate reorganizations are tightly linked to firms' productivities, and account for more than 100 percent of the overall change in productivity of expanding and downsizing firms. Failure to reorganize in order to grow can, therefore, result in an inability to exploit available productivity improvements. This would imply that firms remain inefficiently small, as has been documented in some developing countries (Hsieh and Klenow (2014)).
Differences in productivity at the aggregate level are of utmost interest for policy-makers: Hall and Jones (1999) and Jones and Romer (2010) show how the stark differences in productivity across countries account for a substantial fraction of the differences in average per capita income; Dias *et al.* (2018) show that the heterogeneity in productivity across firms may lead to a cleansing effect during financial crises. Using Portuguese firm-level data for both the manufacturing and services sectors, they find that (i) the crises reduced the probability of survival of both low and high productivity firms, but more than proportionally for the former; (ii) reallocation of resources improved among surviving firms.

Different firms offer different learning opportunities. Differences in firms' growth rates can also reflect differences in learning opportunities for their workers. Lagakos *et al.* (2018) show a pattern in the labor market that parallels the one documented by Hsieh and Klenow (2014):[4] experience-wage profiles—the worker's return on experience—are on average twice as steep in rich countries than in poor countries. Their results are consistent with lower learning over the life cycle, and higher search frictions in poor countries labor markets, preventing workers to climb the job ladder.
Mion *et al.* (2018) delve deeper into this topic and suggest that part of the relationship may be explained by differential characteristics of firms in rich and poor countries. They show that—and explain why—the experience-wage profile in internationally-active firms is quite steeper than that in domestic firms. In their sample of Portuguese firms, young managers that change firm and are employed by domestic firms have a 20 percent probability of moving to internationally-active firms. On the contrary, young managers that already are in internationally-active firms have a 60 percent probability of moving to domestic firms. The wages of managers that are employed by internationally active firms rise much faster than those of comparable managers employed by domestic firms. There are a number of potential explanations why wages of managers rise faster in internationally active firms: internationally active firms may rely more on performance-pay remuneration policies, they may

4. The author thanks Veronica Rappoport (http://personal.lse.ac.uk/rappopor/) for pointing out this parallelism.

employ more educated managers, or managers with higher bargaining power, or they may offer a steeper wage schedule with a lower entry wage, or they may reward more tenure. Finally, internationally-active firms may simply be bigger than domestic firms, and as such put in place more investments or innovations that create faster wage growth. Mion *et al.* (2018) show that the steeper experience-wage profile in internationally active firms is robust to all these explanations, and they suggest that the participation in the international market, either via exporting, or importing, or multinational status, offers more learning opportunities to managers. Distinguishing between experience in international vs. domestic firms becomes then crucial to evaluate the "quality" of a manager. Mion *et al.* (2018) show that international experience contributes to explaining roughly as much variation in the cross-sectional distribution of wages as standard individual variables like experience, education, and tenure combined together.

How economic research can help

Given the extent of firm heterogeneity in terms of productivity, market share, and foreign market performance it seems crucial to adopt a micro perspective to understand better why some firms, and therefore some industries and countries, are more efficient and grow faster than others.

In the popular business and management press, as well as in the academic management literature, there are numerous articles on "corporate reorganization", managers, and management practices. These articles provide anedoctal evidence of the determinants and consequences of corporate reorganizations and management practices, as well as on the impact of managers. While certainly useful and interesting, these are often case studies, they are not based on the systematic collection of empirical data, and therefore lack econometric rigour and cannot be used to test an internally consistent theory. It is then difficult to draw conclusions that are not tied to a specific firm or episode, and sometimes it is not scientifically possible to understand not only the magnitude but also the direction of the effects. As a consequence, it is not possible to gain meaningful lessons for public policy.

A recent strand of the economic literature uses firm-level cross-sectional and panel data to study how managers, management practices, and firm reorganizations affect the performance of firms, and how important these effects are at the industry or country-level. The importance of these studies relies on the quality of the data used, the identification strategy, and the connection with economic theories. It is then sometimes possible to scientifically avail the presence of a cause-effect relationship between quality of the managers, quality of the management practices, and corporate reorganizations on one side, and measures of firm performance, like revenue- and quantity-based productivity or export market performance on the other

side. It is also possible to properly evaluate the strength of such an effect. Finally, when a structural approach is adopted, it is also possible to evaluate, within the realm of an economic theory, the effects of alternative policies aimed at improving firm and country performances.
In order to do all of the above, it is necessary to measure differences, across firms and countries, in terms of managers' quality, management practices, and the occurence of corporate reorganizations, as well as differences in terms of firms' performance. This poses two main challenges: first, it is necessary to access detailed information on firms' and their workers over long periods of time. Second, it is necessary to establish a causal link—a cause-effect relationship—between differences in manager's quality, in management practices, in firms' organizations on one side, and differences in firms' productivities or market performance on the other side.
While the latter challenge is often a matter of ingeniousness of researchers, the former is a matter of data availability. Portugal is a very good example of a country where researchers have access to high quality micro data that allow them to, potentially, produce research that can be useful for policy purposes, that is, to improve the country's performance and well-being of its residents. Micro datasets like *Quadros de Pessoal*, the *Informação Empresarial Simplificada*, the *Inquérito Anual à Produção Industrial*, and the *Microdados do Comércio Internacional*, that provide detailed information on firms' characteristics and their performance in the domestic and foreign markets, are precious resources for the whole country. Just like clinical trials for new drugs, economic theories and econometric testing can take advantage of detailed micro data to provide important insights into the potential effects of specific economic policies, as well as evaluate existing policies.

Management practices, managers' skills, firms' organization as drivers of firms' performance

Management practices and firms' performance

Measuring differences in management practices. Measuring the quality of management practices across firms and countries is not an easy process. Bloom and Van Reenen (2007) develop a new methodology to measure the quality of management practices in a cross section of about 6,000 firms across many countries and industries. They score 18 management practices, covering three broad areas: monitoring, targets and incentives. MBA students carry on interviews of plant managers under a "double-blind" approach, designed to reduce possible biases: managers are not told that they are going to be scored, and interviewers are not told in advance about the firm's performance. The authors randomly sample medium-size firms, employing between 100 to 5,000 workers. These firms are big enough for management practices to matter,

and they are small enough to be unknown to interviewers, so that the risk of preconceptions is minimal.
Bloom and Van Reenen (2010) summarizes the results. When comparing patterns of management across countries, they find that the United States has the highest management score, followed by Germany, Japan, Sweden, and Canada and then followed by a block of mid-European countries (France, Italy, Ireland, the United Kingdom, and Poland) and Australia. At the bottom of the score are countries in southern Europe like Greece and Portugal, along with developing countries like Brazil, China, and India. When separating the overall score into the monitoring, target, and incentives broad categories, the U.S. has the highest score in incentives, while Sweden and Germany lead the target and monitoring categories. These rankings could be explained by the relatively lighter labor market regulations in the U.S. which enable firms to promote highly-performing workers and remove poorly-performing ones. When analyzing the within country distribution of management scores over firms, it is clear that the main difference between the top countries and the others is the larger share of poorly performing firms in the latter group: countries like Greece and Portugal, for example, have a thicker tail of badly managed firms. A possible explanation for this is the high frequency of family businesses.[5] Bloom and Van Reenen (2010) show that family-owned firms that are managed by a chief executive officer (CEO) that is a member of the family are characterized by a distribution of management practices with a large tail of badly managed firms. On the contrary, family-owned firms with an external CEO have a distribution of management practices that is very similar to that of firms with dispersed shareholders—the most common ownership category in the United States.

Are better management practices the source of better firms' performance? Bloom and Van Reenen (2010) show that their measure of the quality of management practices is positively correlated with a number of measures of firm performance, like labor productivity (sales per employee), the return on capital employed, Tobin's q (the ratio of the firm's stock market value to its capital stock), the growth rate of sales, and firm survival. Similarly, Statistics Portugal's recently published "Management Practices Survey" shows that Portuguese firms with more structured management practices present higher profitability ratios, turnover and gross value added growth rates, and investment rates during the 2010-2016 period.[6]
Differences in management practices can be even more important for firms

5. According to European Family Businesses `http://www.europeanfamilybusinesses.eu/` about 75 percent and 80 percent of the companies in Portugal and Greece, respectively, are family businesses.

6. The digital publication "Management Practices Survey" (*Práticas de Gestão 2016*) can be found at https://www.ine.pt

that aim at penetrating foreign markets. Artopoulos *et al.* (2013) describe how management practices differ between domestic and international firms, and how they diffuse from firm to firm. The authors—relying mostly on an extensive set of interviews that they carried on with the relevant actors—describe four case studies of export emergence in differentiated-good sectors in Argentina, namely wine, television programs, motorboats, and wooden furniture. The authors find that consistent exporters to developed countries adopt business practices that are radically different from those that prevail in the domestic market. These practices include adapting products to foreign demand and establishing information channels to keep up to date about its evolving patterns; upgrading production processes to improve quality; complying with stringent requirements of foreign distributors, and seeking to establish long-term relationships with them to secure up-to-date information about foreign markets. The authors also find that in all the industries except wooden furniture the new business practices diffuse through each industry thanks to the role of an export pioneer who possessed tacit knowledge about the foreign markets.

While providing strong insights, the management practices analyses discussed above are based on cross-sections of firms, or on case studies, and cannot make strong claims of causality: their results can only suggest (even though in a credible way) that better management practices lead to better firm performance. We will return to the issue of causality in the next section.

Two more drivers of firms' performance: managers' skills and firms' organization

Managers' experience, foreign market, and resilience to crises. Besides productivity, export market performance is another measure of firm success that is at the center of the public debate. Mion and Opromolla (2014) and Mion *et al.* (2016) study how the export performance of Portuguese firms is determined by the presence of managers with export experience. They use a matched employer-employee dataset, *Quadros de Pessoal*, to build a history of experience for every worker. Then they focus on those managers that were employed, in the past, in exporting firms, and therefore gained export experience, possibly related to a particular destination (e.g. France), or product (e.g. shoes). In the sample they use in their analysis about 8 percent of the firms have at least a manager with export experience, and about 5 percent of the firm have a manager with experience that matches the set of destinations that the firm exports to, or the set of products exported by the firm. Exploiting a natural experiment—the sudden and clear-cut end of a civil war that lasted for almost three decades—Mion *et al.* (2016) show that the presence of a manager with experience in exporting to Angola substantially helps firm entering into the Angolan market. The policy takeaway from this clear-cut result is that experience gained in international firms can, to some extent, be carried along to other

firms, as the manager changes employer, pointing to a sort of multiplier effect. Policies that solve market failures that prevent firms to access the international market, or that facilitate the flow of workers from firm to firm can enhance this performance multiplier.
The correct mix of managerial skills can also be crucial for firms that face large, unexpected, negative shocks. Sazedj *et al.* (2018) study the experience of Portuguese firms during the sovereign debt crisis of 2011-2013, when firms had to decide if to react to a large negative shock by choosing a CEO from within the firm, or by hiring a newcomer. The relevant trade-off faced by firms was that of balancing ready-to-use knowledge of the firm—possessed by an internal CEO—with openness to new business practices—associated to a newcomer CEO. Sazedj *et al.* (2018) shows that firms that hired a CEO from the external labor market perform better during the crisis, both in terms of gross value-added and in terms of sales. External CEOs seem to be better able to access credit, and to increase the presence of the firm on the foreign market.

Firms' organization and productivity. Caliendo *et al.* (2015a) study how the productivity of firms is affected by the firms' decision to reorganize. A firm is seen as a hierarchy of workers and managers distributed over different layers. Workers and managers are endowed with time and knowledge and communicate among themselves in order to solve the problems that come up during the production process. This combination of number of layers, number of workers within each layer, and knowledge of each worker is an endogenous object—that is, it is the outcome of a decision process by the firm's management—which replaces the usual, exogenous, wage bill used in the literature on productivity estimation. Caliendo *et al.* (2015a) find that, in their sample of Portuguese firms, reorganization are fairly frequent as about 20 percent of the firms reorganize from one year to the next by adding or dropping layers of management. The authors show that when firms grow without restructuring they increase the number of workers, and pay higher wages, in every layer of management. However, when firms grow so much that a reorganization becomes profitable they reduce the number of workers, as well as the average wages, in the pre-existing layers, and they leverage on the knowledge of the additional top layer of management. These results mirror those that Caliendo *et al.* (2015b) report for French firms. In the next section we will discuss how Caliendo *et al.* (2015a) are able to establish a causal link between corporate reorganizations and different measures of firm productivity.

Establishing a Causal Link

As mentioned above, one of the main contribution that a social science like economics can bring to the table is more convincing ways to establish

causal relationships. We review next a number of recent papers that point to strong causal relationships between corporate reorganizations, management practices, and managers' quality and firm performance.

Corporate reorganizations and firm productivity. As discussed above, Caliendo *et al.* (2015a) studies how the productivity of firms is affected by the firm's decision to reorganize. The issue that the authors have to face is that firms might reorganize following demand or cost shocks that are not observable to the researchers. If that were the case, the relationship between corporate reorganization and firm productivity might be spurious. Caliendo *et al.* (2015a) tackles this issue in two ways. First, they employ an instrumental variable approach that relies on their ability to construct measures of a firm's past productivity, demand, and markup shocks that are not correlated with current shocks, and can be used to instrument a firm's reorganization. They also experiment additional, more traditional, instruments based on real exchange rates and a firm's export and import patterns. They find that when a firm reorganizes and adds a layer of management quantity-based productivity rises by 8 percent (while revenue-based productivity drops by 7 percent, following a reduction in prices). Finally, Caliendo *et al.* (2015a) goes a step further and uses the quota removals in sub-industries of the Textile and Apparel sector, that resulted from China's entry into the WTO, as an instrument for a firm's reorganization. Exploiting this clearly exogenous negative shock, the authors find that the relationship between firm reorganization and productivity is confirmed. The authors also provide a series of case studies that confirm the more general results obtained in the econometric analysis.

Incentive-based pay and firm productivity. One of the findings of Bloom and Van Reenen (2007) that we highlighted above was that some top performing countries like the United States score very well in terms of management practices that introduce incentive-based remuneration policies, aimed at promoting outperforming workers and relocating or dropping underperforming ones. Lazear and Oyer (2007) describe studies that add a stronger causality flavor to this finding. For example, Bandiera *et al.* (2007) focus on the productivity of managers in a U.K. farm. The fruit pickers in the farm are paid on a piece rate system, but the farm made an unannounced switch in the middle of one season linking the pay of the managers to the productivity of the fruit pickers. When that happened the productivity of the average picker increased by 21 percent. The authors show that half of the change in productivity can be associated to managers targeting their effort toward the most able workers, and half due to managers selecting out the least able workers.

Managers and firm export performance. Mion and Opromolla (2014) and Mion *et al.* (2016) show that the export experience gained by managers in previous firms leads their current firm towards higher export performance,

and commands a sizable wage premium for the manager. The authors use several strategies to account for the possible endogeneity problems, including the sudden end of the Angolan civil war in 2002. The Angolan civil war, after almost three decades, suddenly ended in February of 2002 with the death of Jonas Savimbi, the *União Nacional Para a Independência Total de Angola* (UNITA) leader. The event was completely unexpected and represents an exogenous conflict-related event in which one party gained an unambiguous victory over the other and restored order. Mion, Opromolla and Sforza compare the entry into the Angolan market right after the end of the war of Portugal-based firms that happened to employ a manager with experience in exporting to Angola hired before the end of the war, with the entry performance of otherwise comparable firms that did not employ such a manager. They find that the presence of a manager with export experience to a specific destination (Angola) significantly improves the chances of firm entry into that same destination.

Management practices and firm productivity. Bloom *et al.* (2013) adopt another approach to establish causality. They run a field experiment on 28 plants and 17 large textile Indian firms that consisted in providing free consulting on management practices to randomly chosen treatment plants, and comparing their performance to that of a set of non-treated, control, plants. They find that the adoption of new management practices by the treated plants led to a 17 percent increase of productivity in the first year through improved quality and efficiency and reduced inventory, and within three years led to the opening of more production plants. This stark result leads to the question of why did these plants not adopt new management practices before. The authors suggest two possible answers: informational barriers, and the fact that competition forces were not sufficient to drive badly managed firms out of the market, due to insufficient supply of managerial time.

How can countries improve firms' performance?

The main lesson that comes out of the economic literature presented in this article is that improvements in firms' business models—and the capacity of adjusting the business model to the current (or prospective) environment—can be crucial for guaranteeing the continued existence, and a better performance, of firms. In this article we analyzed three dimensions of a firm's business model: managers, management practices, and firms' reorganizations. Drawing on Bloom and Van Reenen (2010) and the other papers discussed above we identify six policy takeaways that may contribute to creating an environment better apt to foster firm and country growth.

Product market competition. The removal of obstacles to product market competition can improve average management practices both through a selection effect—by inducing badly-managed firms to exit—and through the provision of stronger incentives to improve management practices: competition may "raise the stakes" of the adoption—or lack of adoption—of a better business model either because efficiency improvements may have a larger impact on shifting market share or because managers may be more fearful of losing their jobs.

Labor market regulations. Labor market regulations that constrain the ability of managers to hire, fire, pay, and promote employees could reduce the quality of management practices, by making it more difficult to introduce incentive-based mechanisms. At the same time, labor market regulations that constraint the ability of firms to reorganize or the ability of establishing a match with a more suitable manager may prevent firms to exploit growth opportunities.

Family-owned firms. Family-owned firms with a family CEO are usually managed less efficiently than comparable firms with different ownership and management structure. Family-owned firms also have less debt and are therefore less vulnerable to product-market competition forces that, as mentioned above, may increase the incentives of adopting better management practices.[7] Removing subsidies to family-owned firms may reduce their number and increase average productivity.

Foreign market exposure. Exporters and multinational firms seem to be better managed, and they seem to expose managers to more complex tasks and learning opportunities. Facilitating the export activity of domestic firms could increase productivity, and—to the extent that managers' experience can be carried on to other firms—this could have a positive spillover effect on other firms through labor market flows.

Education and experience. Firms with better educated or highly experienced CEO and/or workforce are better managed, and a more knowledgeable workforce can contribute to a firm's productivity.[8]

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7. A recent paper, Chen and Steinwender (2019), provides some evidence that family-managed firms might be more resilient to increases in import competition as the manager—who is a member of the family—exerts a stronger effort to increase productivity and keep the firm alive. The rationale is that a family manager has a private benefit from the existence of the (family) firm. As such, initially unproductive family-managed firms—more at risk from an increase in import competition—experience increases in productivity following a tariff reduction, unlike more productive family-managed firms and firms managed by a professional.

8. A recent paper, Jarosch *et al.* (2019) shows that learning from coworkers is significant, and that between 4 and 9% of total worker compensation is in the form of learning.

Information. Information diffuses slowly. Providing consultancy advice may help firms, and increase productivity.[9]

Final Remarks

Overall, productivity and market share differentials, both in terms of levels and growth rates, and between developed and developing countries, are large and still not well understood. In this article we review a recent body of evidence that suggests that differences in the "quality" of managers, in the quality of management practices, and in the ability of firms to reorganize to adapt to the changing environment can play an important role in explaining these differences in firm performance. This recent economic literature provides a number of important insights, both for researchers, policy-makers and business executives, and is bound to increases in the near future: there are more dimensions of what defines a firm's business model that need to be studied and may prove to be important to better understand differentials in firms' performances.

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9. A recent paper, Atkin *et al.* (2017), reminds us that technology adoption—as well as the effectiveness of consultancy advice—may be hindered by a misalignment of incentives within the firm. Providing firms with advice and key information may not be enough if the organizational structure, the compensation schemes, the competitive forces within the firm, are not conducive to the effective adoption and implementation of new technologies or management practices.

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