RESEARCH INSIGHT

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Acquisitions, Management and Efficiency in Rwanda's Coffee Industry

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Introduction – Problem and Its Relevance

It is widely accepted that there are persistent performance differences (PPDs) among seemingly similar enterprises (Syverson, 2011). These differences are not only documented in developed markets (Syverson, 2004) but also in developing countries where they tend to be more pronounced (Hsieh and Klenow, 2009).

The existence of PPDs is in fact the fundamental starting point for recent work in productivity growth, trade, industrial, and organizational economics. While these patterns are now being documented across a range of markets, what causes these performance differences, however, is still an open question.

A long list of potential causes could be driving the observed differences (Syverson, 2011): higher quality of labor and capital, firm organization, productivity, and knowledge spillovers, learning by doing, regulation and market structure. A recent body of work has been connecting PPDs with management practices (Bloom et al

2012). To the extent we think that performance differences are related in part to differences in management practices – it raises the natural question how can we improve management practices in developing economies, where firm performance is worse on average, and more dispersed?

First, training and consulting services could be provided to managers of existing firms to improve capabilities of incumbent managers. Evidence has been rather mixed with modest improvements in firm performance (McKenzie and Woodruff, 2014). More recent research has evaluated interventions in larger samples (Bruhn et 2018), manufacturing firms in India (Bloom et al, 2012) and Colombia (Iacovone et al, 2022) and have found improvements in performance. The literature now starts being large enough that some general conclusions can be drawn.

A second plausible idea would be to allow competitive forces to reallocate market shares to better firms, and thus enable the exit of poorly performing ones. This sounds reasonable. However, it is also possible that in environments of second-best institutions, competition might destroy rents that are necessary for firms to sustain well-functioning relationships with workers and suppliers, and this might hinder firm performance and inhibit better management (Macchiavello and Morjaria, 2021).

A third idea to improve management practices is by acquisitions. Allowing the market for firms to function, could help to reallocate control of productive assets to entities that are able to apply them more efficiently. This third channel however has been relatively overlooked in the literature that connects with management practice. And this is the channel of investigation in this project. This channel while important has been overlooked in the literature because of various difficulties to study it.

Acquisitions are usually rare and sudden occurrences in markets. This means to study the effect of acquisition on firm performance, a researcher should be fortunately placed in a context that allows to obtain information on firm performance prior to the acquisition and after-acquisition. This is already a tall ask in any market.

In low-income country settings this is even a bigger ask because we do not in general see many large firms let alone enough firms in a narrowly defined sector (Hseih and Olken, 2014). In fact, in developing economies, the predominant type of firms we observe are SOEs and family firms, and thus churn in ownership are not frequent events. Thus, finding an appropriate context is challenge, and in the shadows lies another obstacle – acquisition choices are riddled with selection issues, as market participants do not select assets randomly. Its underlying source of power?

The approach

In this paper we go to a context that offers several vantage points to make progress on the challenges mentioned. This is the Rwandan coffee industry. Briefly, during the first half of the 20th century, coffee became an important part of the Rwanda economy representing 55% of its export revenues at independence. The sector started to decline in the 1980s – a deterioration that accelerated with the end of the ICO quota system in 1989 – and nearly collapsed with the 1994 genocide. Since the end of the war the sector has steadily recovered and today Rwanda is generally perceived as one of the most dynamic origins, particularly in the high-value coffee segment.

In this setting there are around 300 mills – a remarkable expansion if one considers that there were only a handful of mills in the country in the early 2000s. Besides the rapid expansion in the number of mills, another trend has been the emergence of larger groups – i.e., firms that own and/or operate multiple mills. While most newly built mills continue to be set up by firms that manage a stand-alone mill, a process of consolidation has taken place in the industry: by 2017, around half of the mill were owned by firms that operate multiple mills. In later years, the industry has witnessed the entry of foreign groups. The restructuring of the industry has happened mostly through a process of acquisition, in which mills incurring management and financial difficulties were taken over by groups.

For making empirical progress the setting offers us a helpful laboratory. First there is dispersion in performance across mills within a narrow sector that harbors a sizeable number of firms. Second the main technology which are physical machines in the mills, their models are constant over time and across mills. Thus, allowing us to say if we find performance differences it is more to do with operational management practices than with mill technology. Third, there are many ownership changes, including acquisitions by foreign firms – giving us sensible variation to conduct statistical analysis.

We are interested in understanding two questions. First, what happens when a mill is acquired by a (foreign) group? We want to track several metrics – the mills performance, operations, and investments, changes in managers and changes in operational management practices. With regards to operational management practices, we want to dig deeper and focus on both the knowledge of managers (what to do?) and on implementation (how to do it?). We can answer these questions due to the data we have put together – annual administrative datasets on performance measures from the industry regulator but also to understand exactly what is happening with managers and management we field our own bespoke mill surveys at three points in time over the last decade. The second question we are interested in is which mills are targeted for acquisitions by (foreign) groups? We are able to answer this question with unique richness because we conducted an original survey on the acquirers to ask about their criteria used for acquisitions, as well as about potential acquisitions that were attempted.

Main results

We learn that the market for firms in this economy functions well. In the industry over a 15-year period one-third of mills experience an ownership change. However not all ownership changes improve mill performance, it is acquisitions by foreign groups that matters.

The analysis reveals that foreign groups are particularly effective at turning around under-performing mills: following acquisition by a foreign group mills' significantly increase their capacity utilization, reduce their unit operation costs, and increase quality of coffee, both in terms of coffee cupping score as well as implementation of certification schemes and voluntary standards.

We can rule out that the superior post-acquisition performance of foreign relative to domestic groups cannot be explained by differences in mill technology and access to finance, two important factors highlighted by the previous literature. On differences in technology between domestic and foreign firms see, e.g., Guadalupe et al 2012. We show that the exact type of equipment invested in mills owned by foreign and domestic groups is nearly identical. On access to finance see, Antras et al. (2009) and Manova et al. (2015) among others document how multinationals typically have better access to finance than domestic firms. In our acquirer survey we ask the owners on their source of finance for working capital (which is required to purchase coffee cherries during the harvest) we note that across domestic and foreign groups there is no statistical difference when it comes to sourcing working capital from financial institutions, using internal funds, borrowing from coffee suppliers (i.e., farmers) and obtaining loans from friends and partners.

Ruling out technology and access to finance, leaves the question on what drives this superior performance difference by foreign groups? We document this is partly due to foreign groups deploying better managers and better operational management practices. While the level of operational knowledge across managers of domestic and foreign groups is equivalent, implementation is different. Foreign groups acquire and invest in IT systems to manage and report on procurement at the mill. Foreign groups hire educated and talented managers and pay them more and provide substantial autonomy. Thus, through a set of complementary adjustments foreign groups successfully implement operational strategies to turn around poorly performing mills.

In essence, the improvement in performance most likely arises from the synergies between stable marketing channels in the export markets with superior management practices of the mill in the rural areas – partly driven by a professionalization of management of the mill and a superior capacity in implementing required changes.

Implications for policy

Markets in low-income countries often display long tails of inefficient firms and significant misallocation. This project studies Rwandan coffee mills, an industry initially characterized by widespread inefficiencies that has recently seen a process of consolidation in which exporters have acquired downstream control of a significant number of mills giving rise to multi-mill groups.

The findings have three implications for our understanding of organizational change and for fostering market development in emerging markets. One, having a liberalized economy even in a developing economy allows the market for firms to efficiently function, assets can be under control of better owners. Second, we add evidence to a large literature on FDI showing it can improve market efficiency and reduce misallocation. Thus, ensuring low-income countries have policies to "invite" FDI is crucial. Lastly, the findings also raise implications of what sort of policies would assist in transfer of management technology to domestic firms so that they too can participate and upgrade their capabilities. This remains an open question.

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References

Bloom, Eifert, Mahajan, McKenzie and Roberts (2012), "Does Management Matter? Evidence from India", *Quarterly Journal of Economics,* 128(1): 1-51

Bruhn, Karlan and Schoar (2018), "The Impact of Consulting Services on Small and Medium Enterprises: Evidence from a Randomized Trial in Mexico", *Journal of Political Economy*, 126 (2): 635-687.

Guadalupe, Kuzmina and Thomas (2012), “Innovation and Foreign Ownership”, *American Economic Review*, 102(7): 3594-3627

Hsieh and Klenow (2009), “Misallocation and Manufacturing TFP in China and India”, *Quarterly Journal of Economics*, 124(4): 1403-1448

Hsieh and Olken (2014), “The Missing “Missing Middle””, *Journal of Economic Perspectives 28* (3): 89-108.

Iacovone, Maloney and Mckenzie (2022), “Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia”, *Review of Economic Studies,* 89(1): 346-71.

Macchiavello and Morjaria (2021), “Competition and Relational Contracts in the Rwanda Coffee Chain”, *Quarterly Journal of Economics,* 136(2):1089-1143.

McKenzie and Woodruff (2014), “What are we learning from Business Training and Entrepreneurship Evaluations around the Developing World?”, *World Bank Research Observer*, 29 (1): 48–82.

Syverson (2004), “Market Structure and Productivity: A Concrete Example”, *Journal of Political Economy*, 112(6): 1181-1222.

Syverson (2011), “What Determines Productivity?”, *Journal of Economic Literature*, 49(2): 326-365.

Manova, Wei, and Zhang (2015)“Firm Exports and Multinational Activity Under Credit Constraints” *Review of Economic and Statistics* 97(3): 574–588

Antràs, Desai, and Fritz Foley (2009), “Multinational Firms, FDI Flows and Imperfect Capital Markets.” *Quarterly Journal of Economics* 124 (3): 1171-1219.