

**Researchers**

Arthur Blouin  
University of Toronto

Rocco Macchiavello  
London School of Economics and Political Science

**Sample Size**

967 loans to 272 mills

**Research Implemented by IPA**

No

# Relationships for Financing in the International Coffee Market

## Abstract

Expanding credit access to small- and medium-sized agricultural producers is an important policy challenge, given the millions of livelihoods affected along its supply chain. Researchers used data on loans to coffee processors across 24 developing countries to study credit and insurance constraints in the coffee sector and assessed whether relationships between lenders and coffee mills could mitigate strategic default. Results show that strategic default is a pervasive problem in this market and that business relationship can significantly mitigate the consequences of the possibility of default. The data also suggests that both credit and insurance availability are a significant constraint even to relatively large firms, like coffee producers and exporters.

## Policy Issue

In developing countries, contracts are hard to enforce. This is particularly true in export markets. Lack of contract enforcement can thus prevent firms from expanding their scale by constraining their ability to deal with new buyers or access credit --the most significant constraint for business growth as reported by firm.<sup>[1]</sup> In the absence of strong institutions it is difficult to enforce contracts and thus raise the risk of default for both lenders and commercial partners alike. In these contexts, contracting parties turn to business relationships and a counterparty's reputation to hedge the risk of default. Identifying the incentives that could lead parties to default on a commitment and the extent to which business relationships could deter such behavior could offer important insights for decision makers in industry and government alike.

## Context of the Evaluation

Financing is a major constraint for farm producers, with a financing gap for smallholder farmers estimated at US\$450 billion.<sup>[2]</sup> Smallholder farmers account for the majority of coffee bean production around the world, representing an estimated workforce of 100 million people along its supply chain globally.<sup>[3]</sup>

The partner in this project is a nonprofit that provides loans and financial training to staff at coffee mills. Like other agricultural lenders, the partner uses purchase contracts between a coffee buyer (importer or roaster) and seller (coffee mills) in lieu of collateral. The lending scheme thus leverages the business relationships between the exporters and the foreign buyers to extent working capital loans to a sector that is otherwise very difficult to reach for standard commercial lenders. The coffee mills in the sample had on average over US\$3.5 million per year in sales, held almost US\$2 million in total assets, and received an average loan size of over US\$400,000 from the lender.

## Details of the Intervention

This study investigated whether existing relationships between international buyers and coffee mills mitigate the likelihood of default. Researchers built a model that linked contracts to price fluctuations to test whether the relationships between mills, buyers, and lenders mitigated the likelihood of defaults. They also estimated the impact of these defaults along the supply chain.

The study used data covering 967 loans disbursed to 272 coffee mills between 2003 and 2014. The firms were located in 24 countries, with Peru, Mexico, Nicaragua, Rwanda, and Guatemala accounting for the majority of loans.

The loans were made using a coffee mills' forward sales agreement as collateral. Before harvest season, a coffee buyer signs a purchase agreement with the coffee mill for the delivery of a certain amount of coffee at a later date. To set the price for coffee, these agreements either use a fixed price (fixed price contract), or a basis price plus/minus a predetermined differential (differential price contract). A third-party lender then advances a share of the purchase value to the mill as a loan. After harvest, if the mill delivers the coffee to the buyer, the buyer will pay the lender directly for the value of the loan. If the mill fails to deliver the purchased coffee, the mill enters into default.

## Results and Policy Lessons

*Strategic Default:* The researchers find that between 42 and 59 percent of contract defaults happen because mills pursued more lucrative sales outside the price parameters set in the forward sale agreements--also known as *strategic default*. Although contractual defaults are relatively rare, contracting parties adjust their trade in anticipation of the possibility of

strategic default. The mere possibility of strategic default can thus lead to large distortions. There are two types of distortions. First, parties might reduce exposure by limiting the volume of coffee traded and/or the availability of working capital finance. This generates *credit constraints*. Second, parties might choose contractual terms that are more robust to strategic default, but leave exporters exposed to price risk. This generates *insurance constraints*.

Business relationships can mitigate both problems. On average, the value of a relationship between a coffee mill and a buyer accounts for 44 percent of the value of the sales contracts.

*Effects along the Supply Chain:* In the absence of default, there would be higher mill production: an estimated 19 percent higher on average. These estimates point to significant distortions in firm output deriving from the unavailability of more optimal insurance options and working capital. This lower output at the mills also translate into losses for supplying farmers, which is estimated between 10 and 32 percent lower welfare as a result.

The study documents the existence of welfare losses for supplying farmers because of failures in contract enforcement, as well as reductions in productivity at the firm level as a result of this. At the same time, the study documents important financial constraints among relatively large exporting firms in developing countries. Finally, the study sheds lights on the value of, and difficulty in extending, price risk hedging tools to exporters in emerging markets.

## Sources

[1] Ayyagari, Meghana; Demircuc-Kunt, Asli; Maksimovic, Vojislav. 2017. SME finance (English). Policy Research working paper; no. WPS 8241. Washington, D.C. : World Bank Group. P. 7

[2] Carroll, Tom, Andrew Stern, Dan Zook, Rocio Funes, Angela Rastegar, and Yuting Lien. "Catalyzing smallholder agricultural finance." Dalberg Global Development Advisors 48 (2012). P. 8

[3] Panhuysen, S., and J. Pierrot. "Coffee Barometer 2014, Hivos." International Union for Conservation of Nature (IUCN NL), Oxfam Novib, Solidaridad and World Wide Fund For Nature (WWF) (2014). P. 1

April 11, 2019