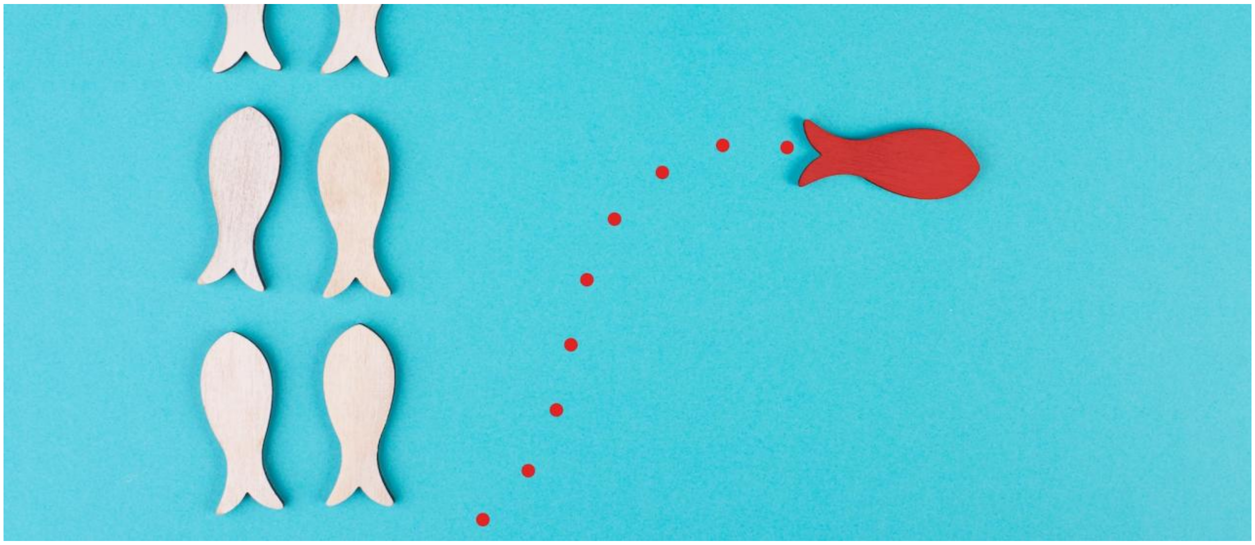
When Firms Behave Irrationally



By Lin Tian , INSEAD

The actions of firms in low-income countries don't always match our assumptions.

Economic models are often built on assumptions. One of the most fundamental of those is that firms are always going to behave rationally. In other words, organisations will make decisions that maximise profit, increase efficiency or reduce risks for their own firm.

But do they really, and do they always do so in every situation? In recent years, there has been a growing recognition that such traditional models, built on assumptions of rational decision-making, may not accurately capture the economic dynamics at play in low-income countries.

In **recent research**, my co-authors* and I decided to test this further by examining firm behaviour in the context of the Ugandan value-added tax (VAT) system. Introduced by the Ugandan government in 2012, the new scheme aimed to introduce a more transparent and accountable electronic filing system for VAT claims that would benefit both the government and firms.

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Checks and imbalances

Under the new system, firms had to report all transactions, both sales and purchases, they undertook with other firms. For sellers, it was in their self-interest to under-report their sales and so pay less VAT. For buyers, it was in their self-interest to over-report purchases.

In theory, this apparent conflict should ensure that it was in each firm's interest to report truthfully. Indeed, the natural checks and balances present in the system have led many international organisations, such as the **International Monetary Fund** and the World Bank, to laud its potential as a policy instrument to reduce tax evasion.

To see if this was true in Uganda, we examined data from 2013-2016 to cross-check whether the VAT reports of different firms who did business with each other matched up. The answer was a resounding no. In fact, we found that a massive 79 percent of transactions did not balance each month.

We estimated that correcting these reporting mistakes or discrepancies would have resulted in an increase in VAT revenue of $384 million. That was the equivalent of 25 percent of actual VAT revenue and 4 percent of the total tax collected in Uganda over that period.

The majority of such discrepancies (60 percent) were due to the seller reporting a smaller amount than the buyer. This "seller shortfall" is the type of behaviour you would expect if either the seller or buyer, or both, were trying to evade taxes. In the remaining 40 percent of discrepancy cases, the buyer reported a smaller transaction amount than the seller. This was more surprising as it would lead to a higher net tax liability for at least one of the firms involved.

Accident or design?

An important question to ask is whether firms were making these discrepancies deliberately or by accident. To understand this, we looked at whether transactions between individual firms were consistent and matched.

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In other words, who was to blame for each discrepancy? If a firm repeatedly misreported its transactions with other firms and benefitted from doing so, then we could assume they were doing so deliberately. We labelled these firms as advantageous or sophisticated misreporters. However, if only one of the firms in the transaction was misreporting and it was costing them money, in the form of higher tax payments, then we labelled them as disadvantageous or confused.

This analysis revealed that of all the misreporting, around 75 percent of cases were beneficial to the firms involved – it reduced the tax they were due to pay. While potentially illegal, this was not necessarily irrational behaviour. It could also suggest that many firms were either unaware of the threat of potential fines or prosecution by the tax office, or simply didn’t take those threats seriously. If a firm knows the state doesn't have the ability to carry out the necessary checks, then they can feel confident about cheating the system.

Even so that did also leave a quarter of Ugandan firms – companies that are established and large enough to be paying VAT – acting in a way that was disadvantageous to themselves. While there could be a number of reasons for this, it would suggest that many were simply struggling to either understand the regulations or were unable to cope with the additional administrative work that the new system created.

A dilemma for policymakers

These results create a dilemma for policymakers who aim to balance efficient and fair revenue collection with minimising the administrative burden on businesses. The findings also emphasise the importance of educating companies about the implications of accurate reporting and the potential consequences of evading taxes.

Although our research focused on Uganda, similar patterns have been identified in other low-income countries such as Rwanda and the Congo, emphasising the broader relevance of the findings. This would suggest that future policy implementations should go beyond mere incentives and consider investing resources in educating firms about policy implications and

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benefits, thereby encouraging more rational economic behaviour.

It also demonstrates the need for further research into economic conditions and behaviour in low-income countries. If we are to propose and attempt to implement policies that can properly help aid **economic development**, we need to understand the individual conditions and factors that can impact those policies. In this case, that means a need to assume that a quarter of the firms involved are going to behave irrationally.

For a policy to be effective, it's essential that companies or people are educated to understand how the system works and how it can benefit them. On the other side, governments also need to understand that they require a robust system to administer and enforce the policy. Failure to do so can lead to flawed accounting or misreporting that can cost governments and firms money.

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About the research

"Strategic or Confused Firms? Evidence from "Missing" Transactions in Uganda" is published in the *Review of Economic Statistics*.

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