Business Registration Impact Evaluation in Malawi

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EXECUTIVE SUMMARY

The informal sector accounts for 30 to 40 percent of total economic activity in the poorest countries, and a much higher share of employment is particularly pervasive in poor African countries such as Malawi, where 93 percent of firms have not registered with the government. These firms are largely small and unproductive, and the informal status of these firms is often associated with a number of costs to firms, including lack of access to external finance. Governments around the world have attempted to reduce informality by making it easier to formally register a business, with the Doing Business project of the World Bank finding 368 reforms took place in 149 economies between 2003 and 2012.

The main justifications why governments around the world attempt to bring firms on board to a formal status are to expand the tax base, expand the rule of law in the country through establishing formality as the norm, facilitate firms' access to formal markets, and obtain information about the private sector to develop better policies and targeting of programs.

This study estimates the impact of making it easier for firms to formalize in Malawi. The study randomly allocated firms into a control group and three treatment groups: a) a group offered assistance for costless business registration; b) a group offered assistance with costless business registration and (separate) tax registration; and c) a group offered assistance for costless business registration along with an information session at a bank that ended with the offer of business bank accounts. The interventions took place in 2012. Since them, four follow-up surveys were conducted, the last one finished in 2015. We use data from the four follow-up surveys and one baseline to analyze the full impact of the intervention.

The study finds all three treatments had extremely large impacts on business formalization, with 75 percent of those offered assistance receiving a business registration certificate, but limited effects on increasing the tax base or improving trust in state institutions.

Business registration alone had no impact in expanding access to formal markets and business performance. However, combining the formalization assistance with the targeted bank information session had impacts on firms' sales and profits of 20 and 15 percent respectively. The mechanism for the large effects of this targeted intervention was the increased access to formal financial services through business bank accounts, better financial practices, savings, credit, and business insurance.

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ABBREVIATIONS

BESTAP	Business Environment Strengthening Technical Assistance Project
BRC	Business Registration Certificate
BRIE	Business Registration Impact Evaluation
CC	City Council
DRG	Department of the Registrar's General
HH	Household
MRA	Malawian Revenue Authority
MSMEs	Micro, Small and Medium Enterprises
NGO	Non-Governmental Organization
ROSCA	Rotating Savings and Credit Association
SACCO	Savings and Credit Co-operative
SME	Small and Medium Enterprise
TPIN	Tax Payer Identification Number

1 INTRODUCTION

The informal sector accounts for 30 to 40 percent of total economic activity in the poorest countries, and a much higher share of employment (La Porta and Shleifer, 2014, Gollin, 2002). It is particularly pervasive in poor African countries such as Malawi, where 93 percent of firms have not registered with the government.[1]

The main justifications why governments around the world attempt to bring firms on board to a formal status are to: (1) expand the tax base and potentially collect more tax revenues; (2) expand the rule of law in the country through establishing formality as the norm, (3) facilitate firms' access to formal markets (eg: bank credit), which could lead to business investment, and (4) obtain information about the private sector ("get to know the population of firms") in order to develop better policies and targeting of programs[2].

The World Bank Doing Business project has identified that 558 reforms took place in starting a business in 171 economies between 2006 and 2016 (World Bank, 2017). This is the area in the Doing Business report with larger number of reforms across the world. However, and in spite of the efforts to make it easier for firms to formalize, a review of the effects of these reforms by Bruhn and McKenzie (2014) finds that they have had limited effects on formalization, with the majority of existing informal firms not formalizing after it became easier to do so. This is seen in the results of five randomized experiments to encourage formalization. In Sri Lanka, de Mel et al. (2012) find no impact of information and free registration costs on registration with the tax authority, but they do find that a significant number of firms are willing to register when offered money to register. In Brazil, Andrade et al. (2016) find no impact of either information or of free registration costs on registration under a one-stop shop for municipal, state, and federal taxes, although they do find that increased municipal enforcement does result in more municipal registration. In Bangladesh, de Giorgi and Rahman (2013) find no impact of an information campaign on business registration (separate from tax registration). In Lima, Peru, Alcázar et al. (2010) and Jaramillo (2009) find that information and the reimbursement of direct costs leads about one quarter of those treated to register at the municipal level. In Benin, Benhassine et al. (2017) find limited effects on national tax registration of providing hand-holding assistance to firms in formalizing.

In spite of lack of success of these efforts to bring firms on board, the reasoning behind the reforms to make it easier for firms to formalize is often justified through the multiple mechanisms noted above. In this study, we test the importance of these four reasons in justifying government intervention in bringing firms on board to a formal status. We measure their relevance in driving social benefits, including in increasing the tax base and

[1] Source: 2004-05 Integrated Household Survey, which shows 93 percent of firms are not registered with the Department of the Registrar's General (DRG).

[2] The difference between the third and fourth reason is that in the third one the relationship between formalization and formal markets is seen as causal, while in the fourth reason the formalization is only a mechanism for being able to offer other services.

revenues, as well as firm-level development. We conclude that only through the last reason there are positive benefits three years after the interventions, and those arise in terms of firm-level growth.

We conducted a randomized controlled trial (RCT) in Malawi to learn about each argument. The most popular approach in many countries to bring firms on board has been to introduce one-stop-shops, which make it easier to fully formalize. However, this removes in part the option for "partial formality" in which firms provide information to the government and get partial benefits, but do not enter into the formal tax system. While many countries have moved towards simultaneously registering businesses in a national registry, obtaining a tax registration, and also registering at the municipal level, Malawi, like a large number of countries in Africa (Figure 1), separates the process of business registration from that of tax registration. Business registration provides the government with information about the existence of a firm, and the firm with a business registration certificate. In Malawi, this business registration certificate is the main form of identification needed to open a business bank account, register land, and apply to government assistance programs. Tax registration allows the firm to provide tax invoices to customers and access government procurement systems, but also requires them to pay national taxes.

This separation of registrations allows us to test the different reasons to bring firms on board. We assign firms into four groups: a (1) control group, a (2) treatment group assigned to receive assistance in obtaining the business registration certificate, a (3) treatment group assigned to receive assistance in obtaining the business registration certificate, as well as for a tax-payer identification number, and a (4) treatment group assigned to receive assistance in obtaining the business registration certificate, along with a targeted program involving information sessions from a bank where business bank accounts were offered.

The remainder of the paper is structured as follows: Section 2 describes the study's objectives and theory of change. Section 3 reviews the business registration process in Malawi, contextualizing these in terms of the procedures in other countries. Section 4 presents the timeline. Section 5 explains the impact evaluation and the data collection methodology and discusses baseline characteristics of our sample. Section 6 reviews the study's intervention procedure in detail. Section 7 provides an impact analysis and results of key questions. Section 8 discusses implementation challenges and Section 9 revisits the main policy objectives presented above for business formalization.

2 Business Registration Impact Evaluation

2.1 Intervention

2.1.1 Objective

The objective of the BRIE program is to encourage firms to formalize and obtain their registration offering support in the different steps of formalization. An additional objective is to assist them in getting business bank accounts and bring the firm closer to important aspects of their finance development.

2.1.2 Intervention

While many countries have moved towards registering businesses in a national registry obtaining both a tax registration and also registering the business at the municipal level, a large number of countries in Africa, such as Malawi, separates the process of business registration from the one of tax registration. In the particular case of Malawi, small firms have to go through three steps to achieve formal registration: 1) register the business at the Department of the Registrar's General (DRG) to obtain a Business Registration Certificate (BRC), 2) register the business at the Malawian Revenue Authority (MRA) to obtain a Tax Payer Identification Number (TPIN), and 3) register at the local City Council (CC) to obtain a business license. The three institutions that provide these documents operate independently. However, a BRC is a pre-requisite for obtaining a TPIN. Most of the benefits of becoming formal can be achieved just with the BRC, which is required, and sufficient, for firms wishing to open a business bank account or to take a business loan from a formal bank. In addition, it is required for registration at the Malawian Chamber of Commerce, for registering land, and to access business development services provided by the government. The main additional benefits of the TPIN on top of the BRC are that: (i) firms cannot be paid for a successful government tender without a Tax Payer ID; (ii) avoiding fines or harassment for failing to pay taxes (although enforcement is infrequent); and (iii) firms may be able to use their history of paying taxes to document their financial history to financial institutions when applying for loans.

The intervention consisted of making business registration costless. We visited business owners in the treatment groups and offered assistance in registering their businesses, while conveying to them a single-page information flyer with the potential benefits offered by registration. For those that were interested, we assisted them in filling out the Business Registration form, took the required photo, and delivered their entire application to the DRG, including paying for the Business Registration fee on their behalf. Once ready – on average certificates take two weeks to be prepared –, we delivered the Business Registration Certificates (BRC) back to these firms. Thus, the only cost to these firms was the time it took to fill out the registration form (when they were assisted by our team).

Secondly, out of the group of firms that were offered business registration assistance, we offered to a random subgroup of firms the additional option of assistance in registering for taxes and thus obtaining a TPIN. Finally, we offered a subgroup of firms business registration assistance and also invited them to an information session on the benefits of separating

business from household money held by the private NBS Bank. Bank accounts in the name of the business were offered at the conclusion of the information sessions.

Further intervention details are supplied in Section 6 below.

2.2 Theory of Change

The underlying theory of change is that the program would lead to an increase in firm formalization. The main assumption behind the study is that information about the process and the potential benefits of business registration is restricting firms from accessing a formal status.

Additionally, the theory of change being tested is whether informality is one of the barriers to growth for enterprises and act as a constraint on a firm's ability to access services and sources of finance, thereby affecting firm performance, and consequently, levels of employment and income in developing countries. Under this scenario, the program improves the likelihood of firms to access finance, and firms' performance by increasing firm sales and profits. Similarly, since the program provides access to the formal sector, the firm may begin to use better budgeting/accounting, identify the potential benefits of being registered, and enter into new business networks (such as the Malawian Chamber of Commerce).

The main assumptions informing the causal logic that we want to test, which in turn defines the core hypotheses, evaluation questions and expected impact are the following:

- Business registration offer will increase the rate of formalization
    - Firms with a business registration certificate will increase access to new markets and networks
    - Firms with a business registration certificate will increase access to business bank accounts. Offering these directly will test the need for the additional intervention.
        - Firms with a separate business bank account (and when applicable trained on separating household and business money) will reduce the risk of lack of self-control on the usage of money and will protect the money from the enterprise from appropriation by other household members/friends
            - With increased access to financial services and business opportunities, enterprises will invest further in the business and in reaching to new clients including in advertising and in managing their resources better. For this, they will use their certificate to increase access to formal credit markets
    - With the more formal status, firms will also be less harassed by authorities and reduce the risk of closing the business
    - These changes in behavior due to increase opportunities will lead to better outcomes including increased turnover and profits.

The results chain is as follows:

- Inputs: Financial and human resources

- Activities (treatment group): Business registration, registration for taxes, training and opening of business bank accounts
- Outputs: Registration of firms at the DRG, registration of firms at MRA, opening of business bank accounts
- Outcomes: Better standard of living of beneficiaries and their dependents; improved financial performance, investment in the business, survival rate, and employment; access to finance, markets and networks; increased formality, permits and licenses, and lower harassment levels.

2.3 Research Hypothesis

The theory of change focuses on hypotheses about how firms respond to their formalization status. Our key hypothesis is that the program increases the likelihood of having BRC, TPIN or any Council License.

We explore mechanisms of change such as firms' access to finance. The hypotheses that are tested are whether firm formalization increases the likelihood of treated firms getting a business loan with a formal bank, the amount that business can borrow in 2 weeks, the actual amount borrowed, the likelihood of treated firms opening a bank account or a business bank account which is used just for business purposes, the likelihood of being contacted by the bank, the likelihood of treated firms having insurance in the name of the business, and the likelihood of treated firms saving money at the bank. We also test whether formalization reduces the likelihood of treated firms saving money at home or/and informal organizations such as the Rotating Savings and Credit Association (ROSCA) and the Savings and Credit Co-operative (SACCO). and whether it decreases the likelihood of treated firms taking business money whenever needed for the household. Finally, we also test whether the program increases the financial literacy of the business owner.

3 Business Registration in Malawi

3.1 Context

By the mid-2000s, around 93 percent of firms were not registered with the government in Malawi.[3] In the last few years, the Government of Malawi has attempted to reduce informality by making it easier to formally register a business. This evaluation takes place in the context of a broader effort by the Government of Malawi to improve the business environment and to streamline the process of business registration. As part of the Business Environment Strengthening Technical Assistance Project (BESTAP)[4] supported by the World Bank, the government sought to increase the registration of informal enterprises, to

[3] Source: 2004-05 Integrated Household Survey, which shows that 93 percent of firms are not registered with the Department of the Registrar's General (DRG).
[4] The approval date was on 2007 and the project ended in 2012. The total project cost was USD 18.7 million.

shift to an online-based electronic system of business registration, and to reduce the time required to register firms.

The government is also considering combining these reforms with outreach campaigns promoting the potential benefits of business registration, and is committed to experimentally assessing the value of MSMEs becoming formal. Ultimately, the government aims to provide further information to firms about registration in the future (if the impacts of registration are positive) or to identify other bottlenecks that constrain enterprise performance (if the results are negative or zero).

The 2016 World Bank Doing Business Report shows that Malawi has somehow improved the way of doing business, though strong limitations still persist. Between 2015 and 2016, Malawi went from 144th position in the ranking to the 141th position, out of 189 countries. It takes five days on average to obtain a business registration certificate (BRC) if it is done in person, and 14 days if it is done by mail. Also, it takes only one day to register at the Malawi Revenue Authority for taxes if the application is hand delivered. Despite these improvements, starting a business in 2016 takes 38 days, almost the same as in 2007. In addition, the number of hours that is needed in a year to fulfill all the requirements to pay taxes is around 175, or 21 full working days (World Bank, 2016).

3.2 Formalization Process

As in much of the rest of Africa, the businesses can choose which aspects of formality, if any, to obtain (Table 1). In what follows, we discuss the steps, costs and benefits to the firm of each of these options to formality.

3.2.1 Obtaining the Business Registration Certificate

The business registration process involves filling in the *Application for Registration of Business Name* form and submitting it with one passport photo or a copy of the National ID card to the Registrar General's office in Blantyre. The cost of applying to register as a sole trader or in partnership was Malawian Kwacha (MWK) 200, or US$ 1.30, at time of baseline. This cost was increased during the study (in mid-2012) to MWK 2,000 (equivalent to $8 in 2012 when intervention took place, but $4 in 2013). In addition to the registration costs, there are transport costs for those not living in Blantyre. The transport cost for firms in capital city of Lilongwe of traveling to Blantyre and returning to collect the certificate is around $32 by bus ($8 each way for one trip to drop off the paperwork and another trip to pick up the certificate when ready, with it being a 5-6 hour bus ride each way). The official wait time for processing a registration application is 14 days. However, this appears to vary considerably in practice, with conversations with lawyers and business owners suggesting that it takes some people just one day to register, while others are told it takes two months to register (and they are often offered help by a middleman for 5 to 10 times the actual price).

Enforcement of the BRC is very limited, with no general inspection process at present for checking whether firms have this document. The BRC does not, by itself, impose any further obligations on the firm to pay annual fees or taxes. In common with evidence from other

countries (e.g. de Mel *et al*, 2013; Andrade *et al*, 2014), baseline knowledge of the registration process and cost was limited. Eighty three percent of respondents said they did not know the minimum cost of obtaining a BRC, while for the remaining 17 percent, the median response was ten times more expensive than the actual cost at that time. This difference may partly be associated with incorporating the costs of travelling, as for those that provided a response in Lilongwe the median estimated cost was fifteen times higher than the actual cost. In Blantyre, the median response was five times more expensive (16 and 18 percent of those in Lilongwe and Blantyre were able to provide a response). The response may also be influenced by the cost experienced by peers when using the services of a middleman to submit the application.

3.2.2 Obtaining the Tax Payer Identification Number

Registration for taxes (TPIN) is free but businesses have to fill in an application form, attach a BRC, and submit it to the Malawian Revenue Authority (MRA), which has branches throughout the country. Once a business has a TPIN - it can be obtained in the same day if application is hand delivered - tax authorities may contact the business if it does not file a monthly declaration of earnings. Enforcement of the monthly declaration is rare for small firms. Firms with less than MK 6 million in annual turnover are required to pay 2 percent of their sales in taxes (according to baseline data, this threshold is applicable for about 95 percent of the firms in this study). All firms with a TPIN are required to report their turnover to the MRA and pay the corresponding tax every month.

3.2.3 City Council License

All firms are also supposed to obtain licenses at the local City Council (Lilongwe, Blantyre, etc.) in order to operate. The exception to this is firms operating in a trading market, since they have to pay a fee at the market, typically MK 50 ($0.30), for every day of operation. Small shops adjacent to a major market are also covered by the rules governing those trading in the market. For firms obtaining licenses directly at the City Council, the exact licenses required depend on the type of business. If the enterprise has its own premises, it needs to get the Annual General Business License and then specific licenses for the sector it is operating. For the General License, a hairdresser in Blantyre pays $135 annually while a retail company in a better location6 pays $133. For a food license, a grocery shop pays $27 for operating in a township, but $67 for operating in the city center. These licenses have to be renewed every year. Entrepreneurs who do not pay but operate from a visible place, such as a main street, are often subject to inspections by the City Council. The municipality is highly dependent on these revenues for their budget, and hence has a big incentive to find non-payers, who can be closed down by the council if they fail to comply.

3.2.4 The potential benefits of different types of formalization

Table 1 summarizes the main benefits to the business of the three different aspects of formalization. Most of the benefits of becoming formal can be achieved just with the business registration certificate. A BRC is required, and sufficient, for firms wishing to open a business bank account or to take a business loan from a formal bank. In addition, it is required for registration at the Malawian Chamber of Commerce, for registering land, and to access business development services provided by the government. The Tax Payer Identification Number requires a BRC to be issued. The main additional benefits it offers on top of the BRC are that: (i) firms cannot be paid for a successful government tender without a Tax Payer ID, (ii) avoiding fines or harassment for failing to pay taxes (although enforcement is infrequent), and (iii) firms may be able to use their history of paying taxes to document their financial history to financial institutions when applying for loans. The main benefit of the business license issued by the City Council is to avoid the risk of being shut-down or harassed by municipal inspectors.

4 Timeline

The interventions took place from June to September 2012. The baseline survey was done between December 2011 and April 2012, and it provides detailed information for the informal firms sample before the intervention.

Four rounds of follow-up surveys were conducted after the intervention. The first follow-up survey took place between November 2012 and March 2013, on average 4 months after the interventions. The second follow-up survey took place between November 2013 and March 2014, on average 16 months after the interventions. The third follow-up survey took place between November 2014 and March 2015 (on average, 28 months after the interventions). The most recent follow-up survey took place between June and October 2015 (on average, 35 months after the interventions). See Figure 2.

5 Evaluation of the Business Registration Program

5.1 Data and impact evaluation design

The Business Registration Impact Evaluation (BRIE) is a randomized controlled trial that aims to measure the impact of business registration for micro and small enterprises. In this section, we discuss first the process of obtaining a sample of informal firms, and then we provide details on the randomization process and interventions. The project underwent ethical review by the Institutional Review Board and Innovations for Poverty Action and was granted a waiver of review from the National Commission for Research in Social Sciences and Humanities in Malawi.

5.1.1 Obtaining a sample of informal firms

In this study we target the informal micro and small enterprises that are likely to be able to benefit the most from business registration, and that the government has said would be their

first group of interest for a future road-show on business registration. We target firms in urban Lilongwe and Blantyre, the major commercial cities in the country. At the end of 2011, we listed over 100 business centers – that is, concentrations of firms including industrial parks, markets, streets with shops, set of workshops, etc. – and randomly sampled 46 of these business centers (23 in each city) to list all businesses operating within these areas. Through this process we listed 7,603 enterprises, 85 percent of which were not registered at the DRG. With this process, we excluded from the sample household-based enterprises. Surveys in Africa have shown that household-based enterprises tend to be the smaller on average than those operating in business centers (see for example, Bossuroy et al., 2013). Similar proportions of unregistered firms were identified in Blantyre and Lilongwe, despite the DRG being located in Blantyre. Only one quarter of the firms listed were female-owned.

We had a workshop with government officials, as well as consultations with various stakeholders including the private sector to inform the criteria for targeting firms within the informal sector for this study. There was a consensus around targeting larger firms (measured in revenues), as a proof of concept. In addition to revenues, other selection criteria that were identified by stakeholders included the number of workers and whether the firm operated from a fixed location. The firms to be identified would be those more likely to be targeted or incentivized for formalization by the government, as well as more likely to realize the potential benefits of business registration. At the same time, we aimed in design at equalizing sample sizes by gender and city location (50% by gender and by city) in order to increase statistical power in the analysis of heterogeneous effects.

We identified 3,600 firms within the listing data with the objective of visiting them again and completing a baseline survey for a minimum of 3,000 enterprises . Starting with 3,600 firms aimed at increasing the likelihood that we would find 3,000 informal businesses to be interviewed at baseline. The risks in the absence of this strategy were: not finding the business owner again given the listing exercise did not allow for collecting very detailed contact details information; having firms in the impact evaluation sample that had indicated in the listing to be informal but that were actually registered – this risk would materialize if there were significant measurement problems during the listing.

By location and gender of the business owner, we identified the initial 3,600 firms by selecting the firms with larger revenues that complied with one of the following criteria: (i) had at least one worker contracted outside of family members and business owners, (ii) were operating in a fixed location with more than one person working in the business, (iii) were at the 25 percentile of revenues or above.

Through this two-step process, we completed a detailed baseline survey for 3,002 informal firms, of which 1,195 were female-owned and 1,494 were from Lilongwe. Given only about one quarter of the informal firms captured in the listing was female-owned , our final sample of women entrepreneurs for the impact evaluation that complied with the sampling criteria was lower than the initial objective of 50 percent.

The baseline survey was done between December 2011 and April 2012. The baseline survey collected information on the characteristics of the firm and owner, including their usage of

financial services and finance, their financial literacy and knowledge about business registration processes, and the financial performance of their business.

5.1.2 Summary Characteristics of Sample by Gender

Table 2 compares the baseline characteristics of our sample by gender. Forty percent of the sample is made up of female entrepreneurs. Half the sample is located in Lilongwe, and the other half in Blantyre. Over 70 percent of the firms in our sample were in the retail sector, including selling groceries (21 percent of total), selling agricultural produce (10 percent), selling animal produce (10 percent), and hardware shops (8 percent). The focus on retail was particularly pronounced for men, while women were more prevalent in services (35 percent for women versus 14 percent for men).

Most firms in our sample were owned by a single individual and had an average of two people working in the business . The average business was started by the owner and had been in operation for 8 years. Male-owned enterprises were more likely to operate in a space owned by the entrepreneur, to regularly advertise, to have a written business plan, to provide receipts to customers, to have a larger network of contacts, to pay city council (market) fees, and to be able to identify the benefits of business registration. In sum, male-owned enterprises were larger and more "formal". Indeed, sales, profits and investments were also larger for male-owned enterprises. Average monthly profits were $243 per month for male-owned firms, versus $169 per month for female-owned firms. In terms of harassment, while men were more likely to have been asked for a business-related bribe in the past 12 months (5.5 percent versus 3.4 percent for women), women were significantly more likely to have been sexually harassed while on the job (11 percent for women versus 3 percent for men).

Education levels are similar by gender, 92 percent of the sample is literate, 65 percent have completed primary school or higher, but only 29 percent have completed secondary school. Men had, on average, a higher score than women on an index of financial literacy questions . Male entrepreneurs were also more likely to be married or to be living with someone (86 percent vs 71 percent for females), and to have a more significant role in the household decision making. Women's spouses were much more likely than men's to be in wage employment (30 percent versus 5 percent).

At baseline, over 60 percent of firms saved money in some form of an account, with 57 percent using a bank account. This is considerably higher than the average bank account usage of 22 percent in a national survey of MSME owners in Malawi (Finscope, 2012). However, almost all of these bank accounts were personal accounts, as only about 2 percent of the firms (self-reported) had access to a business bank account at baseline (which is consistent with the fact that business registration is almost always a pre-condition for opening an account in the name of the business). In our sample, women were more likely to use saving mechanisms than men, including bank accounts (60 percent for women vs 55 percent for men), but also informal mechanisms such as ROSCAs and SACCOs (12 percent vs 5 percent). Mixing of household and business finances is common, with 78.5 percent saying they take business money whenever required for household needs .

Although use of a bank for (personal) savings is relatively common, the use of bank loans is rare, with only 7.3 percent of entrepreneurs having had a bank loan used for business purposes in the past. On average, the most recent loans had an initial maturity of less than five months for both male and female-owned enterprises. For firms that obtained credit in the past, 42 percent of the most recent loans did not require collateral. When collateral was needed, business owners primarily used cash deposits, followed by household assets and group-lending. These findings confirm that most loans were small in size. The proportion of entrepreneurs having been denied credit was similar for men and women - 19 and 17 percent respectively of male and female entrepreneurs that have applied in the past 12 months. Taken together, these baseline data do not suggest that women are more disadvantaged than men when it comes to access to finance, especially given that female-owned businesses are smaller on average than male-owned firms.

Finally, in terms of formality, these businesses were all screened to ensure they did not have a business registration certificate at baseline. Nevertheless, 55 percent of them pay city council or market fees, with 15 percent saying they had received an inspection from the municipality.

5.1.3 Random Assignment to Treatment and Different Treatments

We stratified firms interviewed at baseline on the following five measures: gender; location (Blantyre, Lilongwe); sector (commerce, services and manufacturing); business owner being able to identify benefits of business registration (binary variable); and high capture . We then randomly assigned the sample within each stratum to either one of the three treatment arms or to the pure control group (Figure 3). The different groups are as follows:

- A control group of 757 firms
- A treatment group assigned to receive costless registration for the business registration certificate (745 firms)
- A treatment group assigned to receive costless registration for the business registration certificate, as well as for a tax-payer identification number (293 firms).
- A treatment group assigned to receive costless registration for the business registration certificate, along with an invitation to information sessions at a bank where business bank accounts were offered (1,207 firms).

Table 3 shows the summary statistics for all four groups, showing that the groups are balanced when compared with the pure control group. The groups are of different sizes for two reasons. First, since based on previous studies we did not expect high take-up of the tax registration, our aim was to test whether this same result also applied in Malawi, without expecting to then have sufficient power to test the impact of tax registration on subsequent firm performance. In contrast, since the main benefits of formalization appear in theory to occur through the business registration, we wanted a sufficient sample to have power to measure the impacts of this type of formalization on firm performance. Secondly, the partner

private bank requested a larger sample size to offer its services to, which is why the last treatment group is larger.

6 Programme Design

We conducted three different interventions: 1) the business registration intervention, 2) the business and tax registration intervention, and 3) the business registration intervention and bank information session. In the first case, we only offered assistance for costless business registration. In the second case, we offered assistance with costless business registration and tax registration, and in the third case we offered assistance for costless business registration along with an information session at a bank that ended with the offer of business bank accounts.

We invited the firms of the first treatment group from our sample of informal Micro, Small and Medium Enterprises (MSMEs) to register at the DRG through this costless process. There are two competing aspects that make our cost structure different from the normal registration process of individual entrepreneurs. First, the non-governmental organization (NGO) working on this with us has to deploy enumerators to offer hand-holding to firms in the registration process, which is costly. Second, the NGO is able to save by bringing to the Registrar's General office a large set of applications, minimizing the transport costs. The all-in costs of conducting the business registration intervention were $22 per registration offered and approximately $27 per registration offer accepted.

Secondly, out of the group of firms that were offered business registration assistance, we offered to a random subgroup of firms the additional option of assistance in registering for taxes and thus obtaining a TPIN. For the firms in this treatment group, we offered both interventions together, explaining that the process of formalization included these two steps: first the Business Registration and then the TPIN. However, entrepreneurs were allowed to accept just the national Business Registration. As with the first treatment group, we assisted the firms in filling out the TPIN form and delivered their application to the Malawian Revenue Authority (MRA). We pooled enough applications and delivered them jointly to the MRA, obtaining TPINs in the same day. When hand-delivering the TPIN certificates back to the business owners, we provided an example of the monthly form that needed to be submitted and explained the tax payment process they would need to follow from then on.

Finally, we offered a subgroup of firms business registration assistance and also invited them to an information session on the benefits of separating business from household money held by the private NBS Bank. Bank accounts in the name of the business were offered at the conclusion of the information sessions. The objective of this additional intervention is to test the interaction between business registration and these information sessions, not the effect of information sessions on their own, nor the importance of just information sessions versus just business bank accounts. The decision to evaluate the combined effects of these interventions was based on its relevance for potential policy, and because a pre-condition

for opening a business bank account (and through that liaising with the SME Department of the bank) is to have a Business Registration Certificate. The NBS Bank was not interested in providing information about the benefits of separating household and business money if the firms did not qualify for business bank accounts. Rather, the bank was interested in increasing its reach and saw this combined intervention as a potentially inexpensive mechanism for achieving that goal.

Firms were invited to NBS Bank's information sessions in the businesses' area of operation. Each session included a maximum of 30 participants, and was led by both NBS Bank representatives and a professional trainer in financial literacy. The NBS Bank representatives were experienced in dealing with small business clients. The information sessions comprised 20 hours of activities (two days of eight hours each and a follow-up session one week later, lasting four hours), with information provided on the following modules: (i) formal and informal financial institutions, and the role of banks; (ii) the benefits of bank accounts; (iii) identifying the specific problems that businesses face, namely the intertwining of business and household responsibilities; (iv) the benefits of separate business and household responsibilities; (v) how business bank accounts allow for the mental and physical separation of household and business funds and (vi) practical examples of using bank accounts for business purposes. At the end of the second day, NBS Bank offered a recently launched business bank account, which had a lower minimum balance (MWK 500) than previous products offered by the bank. This business bank account was available to all firms in Malawi with a BRC.

7 Impact Analysis and Results of Key Questions

7.1 Sources of Data for Measuring Impacts

We use two sources of data for measuring impacts of these interventions. The first are data from our administrative records of program take-up. This includes information on which firms we assisted to get business registration certificates and a TPIN, as well as information on attendance at the bank information sessions and on which firms signed up for business bank accounts at the conclusion of these sessions.

The second source of data is the baseline and four rounds of follow-up surveys. The interventions took place from June to September 2012. Four rounds of follow-up surveys were conducted after the interventions. The first follow-up survey took place between November 2012 and March 2013, on average 4 months after the interventions. The second follow-up survey took place between November 2013 and March 2014, on average 16 months after the interventions. The third follow-up survey took place between November 2014 and March 2015, on average 28 months after the interventions. The last follow-up survey took place between June and October 2015, on average 35 months after the interventions.

Attrition was 5.7 percent in the first follow-up, 9.4 percent in the second follow-up, 10.9 percent in the third follow-up, and 10.5 percent in the fourth follow-up. Attrition was uncorrelated with treatment status in all follow-ups (see Appendix 1). Although attrition

rates were low, a minimum of nine percent (in the first follow-up) and a maximum of sixteen percent (in the second follow-up) of the firms interviewed in the follow-up surveys had closed their businesses and not started a new one. This reduces the number of people in our samples that currently operate firms, but there are no differences between groups in closure rates (Appendix 1).

7.2 Methodology

To estimate the impact of the different treatments on outcomes of interest, we run the following ANCOVA specification for outcome y:

$$y_{i,t} = \alpha + \beta_1 Treat1_i + \beta_2 Treat2_i + \beta_3 Treat3_i + \lambda y_{i,0} + \sum \delta_s d_{i,s} + \varepsilon_{i,t} \qquad (1)$$

Where *Treat1, Treat2,* and *Treat3* are assignment to the BRC assistance, BRC+TPIN assistance, and BRC + bank information sessions treatments respectively, $y_{i,0}$ is the baseline value of the outcome of interest (included to increase power as per McKenzie, 2012), and the $d_{i,s}$ are randomization strata dummies (Bruhn and McKenzie, 2009).

We estimate equation (1) from the four follow-up surveys to analyze the impact of the interventions. We show in the results that we cannot reject equality of the treatment effects over time, and therefore we pool impacts over the four follow-ups to maximize statistical power. The coefficients β_1, β_2, and β_3 then provide the intent-to-treat average effects post-treatment. Since randomization was at the individual level within strata, we use robust Eicker-White standard errors for the $\varepsilon_{i,t}$. In addition to estimating the average effects, we allow for treatment interactions with gender to test whether impacts vary for male versus female business owners.

When it comes to estimating business outcomes, a key issue is how to handle businesses which are closed. Our approach is to code the outcomes for these firms as zero.[5] That is, a business which is closed is assumed no longer to have a formal license, a business bank account, or other such outcomes. For several savings outcomes for which it is possible that individuals are saving even without operating a business, we use the sample of firms still in business since we lack data on these outcomes for those whose businesses have closed.[6] Appendix 1 shows there is no impact of any of the different treatments on business closure rates.

In addition, we follow the methodology of Kling, Katz and Liebman (2007) to test the significance of families of outcomes in a single aggregate. For each family of outcomes, we convert all outcomes so that the sign of all of the variables in a family goes in the same direction; calculate the z-score of each variable by subtracting the control group mean and

[5] We obtain similar results if we treat the businesses that are closed as attrition.

[6] Regressions use sample of existing businesses at follow-ups for dummies "Has a bank account (personal or business)", "Saves at home", and "Save in a ROSCA or SACCO". Although these are not business-specific indicators (a person without a business may have an account), we have no data on these at follow-ups for respondents without an operating businesses. We get similar results when using the full sample of non-attrition for these surveys, i.e. when we assume a "0" for respondents that do not run a business anymore.

dividing by the control group standard deviation; and take an average of the z-scores in the family. When considering the heterogeneity of outcomes, we follow Fink, McConnell and Vollmer (2014) and use the Benjamini and Hochberg (1995) method for limiting the false discovery rate (FDR).

7.3 Results

7.3.1 Program Take-Up

Table 4 provides take-up results based on the BRC and TPIN certificates delivered with our assistance. Overall take-up of business registration was 75 percent for those offered just the BRC. The take-up of the BRC was 85 percent among those also invited to bank sessions on separating household and business money, and 69 percent among those offered BRC plus the TPIN (since they could opt for the BRC while declining the TPIN). These differences in take-up rates of BRC are statistically significant across the treatment groups. In contrast, only 4 percent of those offered assistance with tax registration received a TPIN with our assistance.

The BRC take-up rates are extremely high compared to the formalization rates in other studies that have offered assistance with formalization (De Mel et al., 2012; Alcázar et al. (2010); Jaramillo (2009); Andrade et al., 2016; de Giorgi and Rahman, 2013; Benhassine et al., 2017). With the exception of de Giorgi and Rahman (2013), all the existing studies have focused on tax or municipal registration, which has involved ongoing cost obligations to the firm in the form of taxes. De Giorgi and Rahman (2013) provide information to aid in business registration, but not the costless assistance that we used here. However, we see that even with costless assistance, take-up rates for the TPIN are extremely low, suggesting that it is the combination of a business formalization status that offers potential benefits (like bank access), low transaction costs, and no implied future cost that is responsible for the high BRC take-up rates.

The remainder of table 4 examines differences in take-up rates by gender, and by location. Take-up rates are similar by gender for business registration when offered alone, or with the banking information session. However, there is a significant difference in take-up of the business registration certificate when offered together with the TPIN assistance: only 58 percent of women obtain a BRC in this case, compared to 76 percent of male owners. Table 5 examines the reasons for not accepting assistance to obtain a BRC. Across all treatment groups, the main reason for not getting a BRC is that the business had closed, moved, or could not be located to offer the assistance. This reason accounts for about two-thirds of the gender difference in take-up of the BRC under the BRC and TPIN treatment. Since this gender difference in closure or failure to locate is much higher for this treatment group than the other treatment groups, it may just reflect chance. There are no differences in take-up rates of the BRC in any of the three treatment groups by location, despite the implied cost savings being much greater in Lilongwe than Blantyre. This suggests that it is the personal assistance and information provided, rather than cost savings that are driving the high take-up.

The take-up rate of the bank information sessions was 72 percent, which is above the average of 65 percent for typical business training programs reported by McKenzie and Woodruff (2014). An important factor for the high take-up of these sessions was likely the close proximity of the sessions with the firms' place of operations. Out of the business owners that participated in NBS Bank information sessions, 89 percent of them opened bank accounts in the name of the business.

7.3.2 Impacts on Formalization and Tax Base

Table 6 reports the impacts of our different treatments on the three key dimensions of formality. These measures are self-reported by business owners from the four follow-up surveys. Although we asked the business owners to show the certificates for each of the dimensions of formality, a significant number of them – including of those that we have delivered business registration certificates - said they had them in a secure place like at home. Hence, reporting only on certificates shown to enumerators would underestimate the impacts on these measures.

We see that obtaining a business registration certificate is rare in the absence of our treatment – only 8 percent of the control group firms have a BRC on average at follow-ups. All three treatments have large and significant impacts on the likelihood a firm has a BRC, varying from a 52 percentage point increase for the BRC alone assistance to 64 percentage point increase for the BRC + bank information session treatment. This provides a powerful first stage to enable us to measure the impact of business registration on firm outcomes. Also, it shows that the top-up offering of a bank information intervention to BRC alone leads to a 12 percentage point increase in the likelihood of formalizing.

However, it is notable that the treatment effects are lower than suggested by our take-up numbers, and we can no longer reject equality of effects for the BRC versus BRC+TPIN treatments. One-third of the difference in treatment effects compared to the take-up rate can be explained by the counterfactual provided by the control group, which suggests that 8 percent of those treated would have got a BRC without our assistance. In line with that, about 3.5 percent of those in treatment groups that did not take our assistance reported in the survey having registered during the period, which may be associated with people that went on their own, but may also suggest a measurement problem (which could also apply to the control group). This BRC registration of people that had not received our support attenuated the difference between take-up and the treatment effects. The remaining gap is mostly driven by those who our records indicate that they received a BRC with our assistance and reported in the survey that they did not have one. This accounts for about two thirds of the remaining gap, with the rest being explained by those with BRCs that have closed down or attrited.

The survey data confirm that treatment effects on other forms of registration are small. City council licenses are common, with 64 percent of the control group having one, but there is no significant difference across treatment groups. Receiving a business registration certificate is therefore not changing registration behavior on this other margin. Recall that

the BRC is a prerequisite for being able to register for a tax-payer identification number. We see that only 6 percent of the control group gets a TPIN. We see statistically significant (at ten percent), but small, effects of the BRC treatment on the likelihood of reporting having a TPIN, but surprisingly no impact of the BRC+TPIN treatment. This suggests that those who were assisted to get the TPIN were those few firms that were going to go and get tax registration anyway, and that, at most, the BRC helped speed up the process of tax registration for a few other firms that were otherwise going to register for taxes. It could also indicate that knowledge about tax registration process increased in the BRC+TPIN group and we are capturing a more accurate measure of tax registration in that group than in others.

Panel B of Table 6 shows how these formalization results vary by gender. In contrast to the administrative data, we find female business owners to have significantly lower treatment effects on obtaining a BRC from all three treatments. One part of the gap is explained by differences that already existed in the administrative data, even if not statistically significant for two of the treatment groups. Two thirds of the remaining gender difference in treatment effects, when compared with the administrative data, is explained by the higher rate of business closure among female-owned firms – there is a 5 percentage point difference between female-owned and male-owned enterprises among those in the treatment groups that had accepted the certificate. Firms not reporting in surveys on BRCs delivered with our assistance are more common for women and largely explains the rest of the gender gap. Differences between men and women in the control group are small and attenuate the effect, and there is no significant gap on attrition. Nevertheless, we still find sizeable and significant impacts of our treatments on the likelihood that female owners have a BRC, enabling us to estimate the effects of business registration separately for male and female-owned businesses.

7.3.3 Impacts on Business Performance

Table 7 examines the impacts of the intervention on business performance, including monthly sales and profits. The intervention which combined the BRC assistance with bank information sessions was successful in increasing both sales and profits. The average impacts of this intervention on sales and profits winsorized at 99 percent is of 20 and 15 percent respectively. In contrast, just being offered assistance obtaining a BRC or the combination of BRC and TPIN have no impact on both sales and profits. Being offered the combined BRC with bank information sessions leads to significantly higher sales and profits than offering BRC alone. These findings are robust to different measures of business performance including weekly measures of sales and profits, non-winsorized outcomes, and inverse hyperbolic sine transformations.

Panel B shows the gender differential impacts on business performance. The impacts on the z-scores of sales and profits are not different for men and women. Contrary to a common view in private sector development interventions, this finding shows that the combination of BRC and bank information session treatment is effective for female entrepreneurs in increasing their sales and profits. The impacts for male-owned firms of the combined BRC and bank information session are of 17 and 13 percent on sales and profits respectively. The

impacts for female-owned firms are of 28 and 20 percent on sales and profits respectively, as women catch up from a much lower base in business performance.

In addition, the no difference in z-scores by gender suggests BRC alone is not sufficient to change business performance for either men or women. For the latter, the differential impact on sales is significant at the 10 percent level, but marginally not on profits. Given these findings, the difference in impacts on sales and profits between BRC alone and combining BRC with bank information sessions is only present for men, not women.

8 Challenges in Implementation and Lessons Learned

A key lesson learned from the implementation of a longitudinal study with this population was the challenge in tracking firms' owners. This is included firms moving outside of the sample area, firms moving without identifying information to follow-up or contact the owner and firms closing permanently. Due to these challenges there was a reduction in sample size over the study period.

The project also experience respondent fatigue overtime, given both the number of survey rounds and the length of the survey. This did not differentially impact the treatment groups.

A planned re-registration of firms did not occur in the lifespan of the project due to delay on the part of the Malawi government in requesting it of businesses. This had no implications of the completion of project work.

9 Policy Implications

Below we summarize the findings for testing individually the four reasons policy reasons discussed in introduction for promoting the entry of firms into a formal status. We assess them in turn to conclude that only using the registration as a means of identifying firms to develop targeted programs justifies facilitating formalization processes in a resource constrained environment.

a) Increasing the tax base

As discussed in the context of Table 6, none of the interventions had an impact on being registered for taxes (TPIN), except an economically small effect of 1 percentage point (20 percent) of offering BRC alone. More importantly, as shown in Table 8, none of the interventions had an impact on taxes paid in past month. Contrary to much of the discourse, these findings suggests that this reason is not sufficient on its own to facilitate formalization processes, as the implementation of such an effort would result in limited number of new firms coming on board and actually paying taxes.

b) Building a culture of formality without fear of retaliation

A second reason for seeking to bring firms on board to a formal status is to develop a culture of formality in the country, where the state wants to make it the norm to be formal and firms build trust in the rule of law in this process. Given the separation between BRC and TPIN in

Malawi, firms may be willing to participate in this process with limited fear of retaliation by accepting the BRC and sharing their information, while not having to report on accounting for taxes.

Under this reason, we should see changes on firms behaving more formally. Table 9a shows that firms offered assistance in registering had no change in developing more formal business practices like providing receipts to customers. For this reason to justify the interventions, we would also likely see increased trust in state level institutions three years after the interventions, including the offering of registration without fears of being asked for taxes. Table 9a shows that registering for the BRC alone does not have any effects at this margin with measures of trust in institutions.[7] This may also follow from having had no effect on average in reducing harassment, including inspections from various sources, asked for bribes, threats to shut down businesses, confiscation, or sexual harassment.[8]

c) Access to formal markets

A third reason for seeking to bring firms on board is constructed around the argument that firms want to become formal for accessing formal markets, and it is only the high cost and time to process that formalization that hinders them for doing so. This reason would justify investments to streamline processes, such as setting online systems and reducing costs, as well as the number of registration procedures. This was the main reason behind Malawi's reforms of computerizing the business registration processes and seeking to reduce the number of business registration procedures. In our interventions, we make it even easier in terms of processes for entrepreneurs to formalize.

Table 10 presents the impacts of offering assistance in BRC alone on accessing these formal markets – as described in the benefits listed in Table 1. While firms are indeed accepting BRC alone and are more likely to identify these benefits of formalization, there seems to be no change on accessing formal markets including opening business bank account, bank loan, registering land in the name of business, export licenses, applying to private tenders, using government programs, or being member of Malawian Chamber of Commerce (MCCCI). Formalization alone is not sufficient to drive firms to look for these formal markets, which suggests firms face other constraints in accessing those.

d) Offering of targeted interventions when registered

A final reason to bring firms on board is to construct a database of firms in order to develop targeted policy and programs. This list of firms without association to taxes allows collecting basic information on firms (sector, location, etc), having a sample frame for more extensive firm-level data collections, and using this information to develop targeted policies and interventions.

[7] Trust in institutions includes confidence in church, courts, police, national government, and family. Trust in institutions business also includes confidence in the City Council and in tax authorities.

[8] The only exception not shown in Table 9b was for male entrepreneurs, where there is a significant reduction in tax inspections, confiscation and other type of harassment following the interventions for BRC alone or BRC plus information session from a Bank (not when offered assistance in obtaining BRC and TPIN).

As discussed, we tested this reason through inviting firms listed in the database to an information session from a local Bank where the entrepreneur connects with the SME Department for receiving access to business bank accounts and through that complementary offerings such as enterprise loans and insurance products.

Table 6a showed that entrepreneurs were more likely to register when offered these additional services than when offered BRC alone or the joint BRC and TPIN offerings, which suggests higher demand in coming on board to a formal status when seeing the potential benefits of targeted interventions.

Tables 11a and 11b examine the impacts on access to finance of combining assistance in registering with inviting business owners to a targeted information session from a bank. This intervention was successful in increasing both the likelihood individuals have any bank account (by 18 percentage points, relative to a control mean of 65 percent), and especially the likelihood that entrepreneurs have a business bank account (by 39 percentage points, relative to a control mean of only 4 percent). This is accompanied by a less likelihood of saving at home (by 7 percentage points, relative to a control mean of 44 percent), and by a less likelihood of saving through ROSCAs and SACCOs (by 3 percentage points, relative to a control mean of 73 percent). In contrast, just being offered assistance obtaining a BRC has limited impact on savings. There is a significant, but relatively small 2 percentage point increase in the likelihood of having a business bank account, which is significantly smaller than for the assistance combining BRC assistance with bank information sessions.

While the take-up of business bank accounts was 64 percent of those offered information sessions with NBS Bank (table 4), the treatment effects are smaller (39 percentage points). The control group mean is of 4 percent, but there is also a similar percentage of entrepreneurs with business bank accounts in the bank information sessions group, which did not participate in NBS Bank's program. Thus, the difference of about 25 percentage points is accounted for other reasons: about 80 percent of the difference is explained by people still operating businesses that do not report in the survey having a business bank account. Contrary to the assistance with the BRC where the registration certificates do not expire, this might not necessarily be a measurement problem because some business owners may have closed bank accounts since the intervention. The remaining difference is explained by businesses closing.

The bank information sessions emphasized the importance of separating household and business expenses, while having a separate business bank account may facilitate this process. Table 11b shows a significant 6 percentage point reduction in the likelihood of mixing of household and business expenses for the BRC plus business information session treatment group (relative to a control mean of 29 percent).

We do see this treatment group being more likely to have an account that they use just for business purposes. At the same time, this is well below the penetration of accounts in the name of the business for this group. Indeed, 47 percent of the firms in this group with bank accounts in the name of business used the funds saved there for other purposes, namely personal expenses. We also see an 8 percentage point increase in the likelihood of keeping

financial records for the group offered bank information sessions. There are few impacts of the other two treatments.

In Table 11b, we also examine the impacts of the interventions on the usage of credit and insurance. On average, there is a marginally significant 24 percent effect on the amount borrowed in those offered assistance registering and the targeted invitation to an information session from a bank. Firms in the group offered bank information sessions seem to be less credit constrained than those in the control group and in the other groups, as there is an economically and statistically significant 16 percent impact of the activities on the amount of money they say their firms can borrow if suddenly facing an unexpected situation needing extra funds for the business in two weeks. This increased financing capacity seems to be driven by the opportunities of using formal financing institutions rather than depending on family and friends – while 59 percent of businesses in the group offered bank information sessions said they would borrow through a bank to respond to this unexpected financing need, that would only be the case for 46 percent of the control group.

The treatment group offered BRC + bank information sessions, which received business bank accounts through the SME Department of a local bank, also had significantly large impacts on the use of insurance schemes in the name of the business. The control group access to insurance schemes was of 1 percent three years after the intervention, but was 9 percent for the group offered bank information sessions. Within the firms in the group offered bank information sessions with insurance schemes, 56 percent of them had insurance against weather incidents, 24 percent against fire[9], 20 percent against theft, and 16 percent for life/health coverage of the business owner.

Many governments around the world are trying to make the initial registration process as cheap and simple as possible. We identified an effective replicable design of outreaching informal firms and offering support in the different steps of formalization. The interventions used in this evaluation cost much less than the typical private sector development intervention. Moreover, this model of assisting firms in registering their business is being followed in pilots in Benin and now in a number of countries that have the OHADA simplified regime of business registration.

Governments have an interest in bringing firms into the formal system, so this model is seen by governments in Africa as a replicable mechanism of spurring formality. Additionally, this would allow for increased information on firms in the economy.

The study shows that additional actions are needed to lead firms to increase their likelihood of registering for taxes as they grow. Moreover, the study shows the importance of addressing complementary constraints when development investment climate interventions. Facilitating business registration may not be sufficient to have effects on access to financial services but complementing with information session where the entrepreneur has access to the SME Department of a bank, allows for impacts on various

[9] In 2014, there was a large fire in one of the main markets in Lilongwe where our study is operating: http://www.nyasatimes.com/2014/07/30/fire-guts-lilongwe-tsoka-market/.

access to finance dimensions, including in increasing access to business bank account and insurance.

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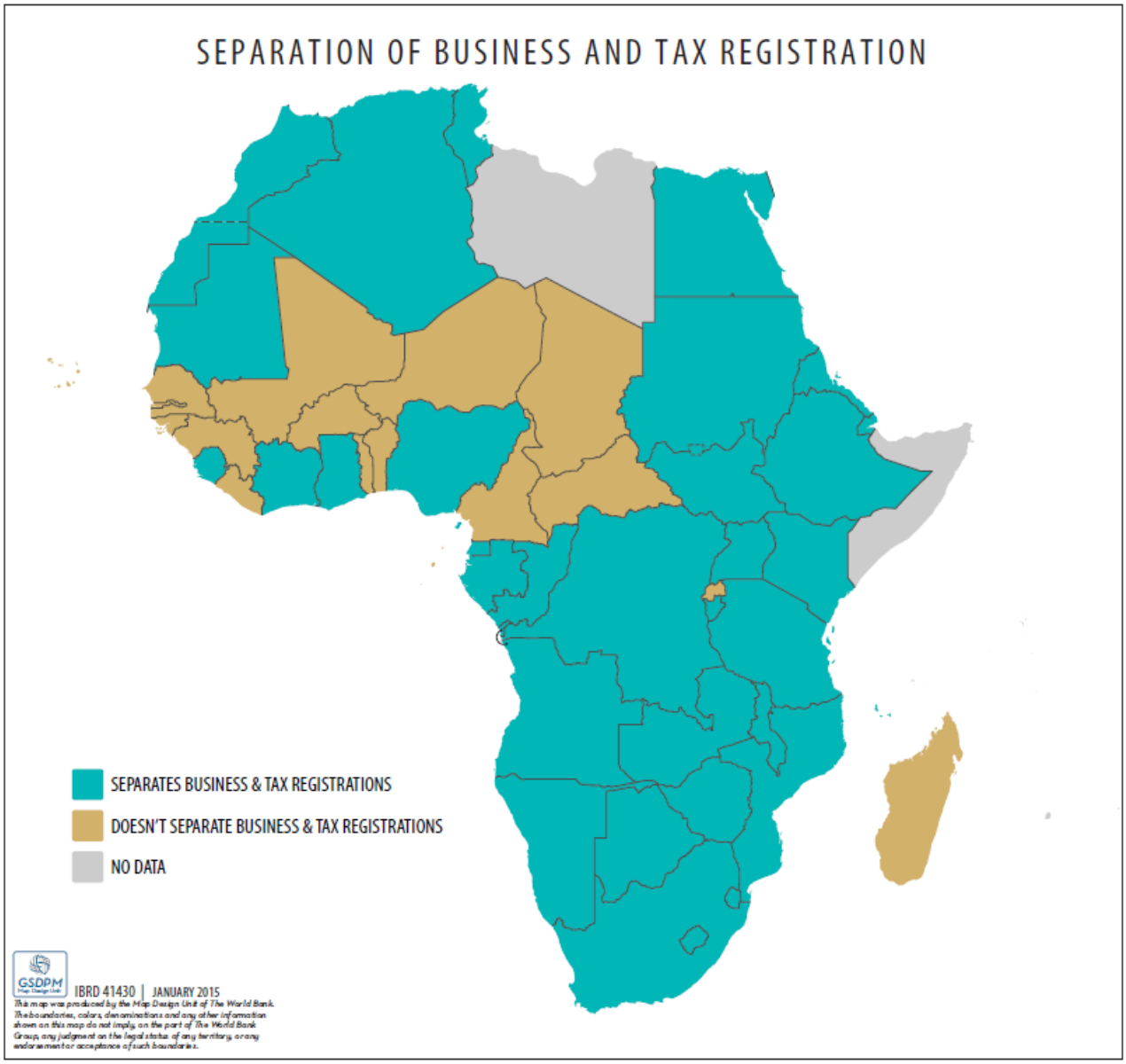
Figure 1: Separation of Business Registration from Tax Registration by country



Source: Adapted by authors from doingbusiness.org

Figure 2: Project Timeline

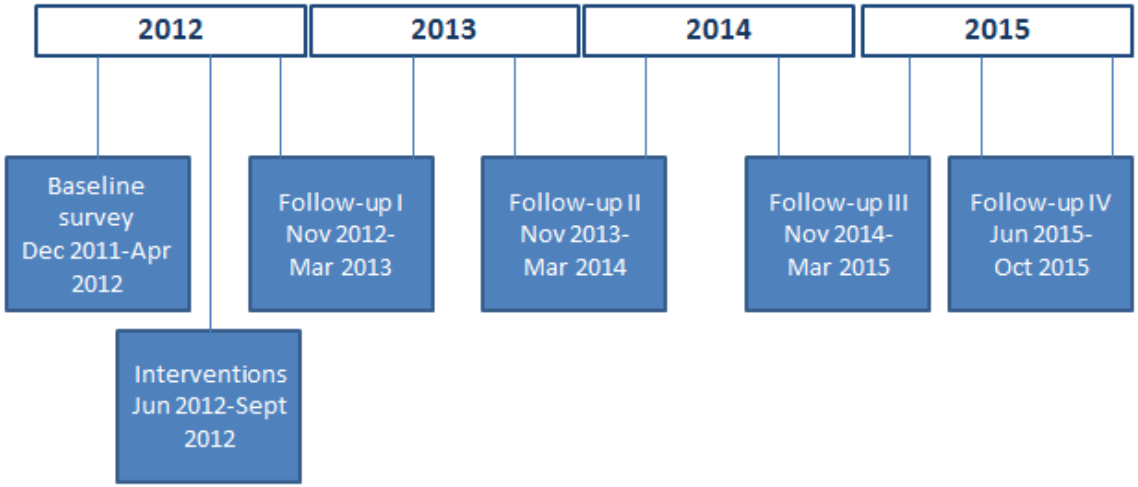


Figure 3: Impact evaluation design

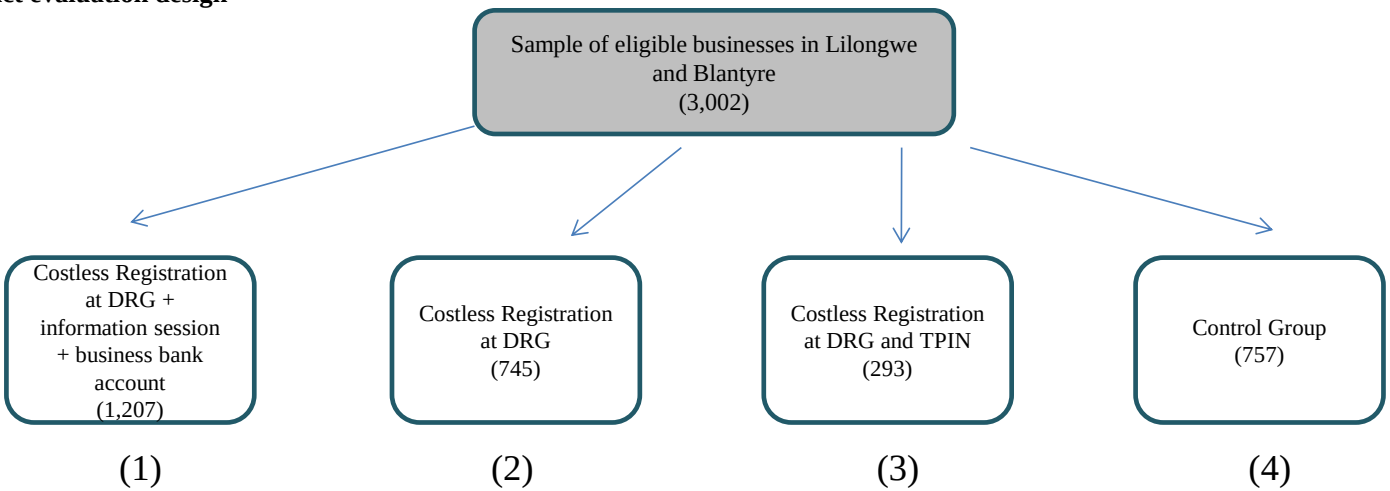


Table 1 - Benefits of becoming formal in Malawi

Benefits	Business Registration Certificate (BRC)	Taxpayer's Identification Number (TPIN)	City Council licenses
Open business bank account	yes		
Apply to bank loan	yes		
Register land in the name of business	yes	needed if seller of land (show tax clearance for capital gains)	
Export license	yes		
Apply to private tenders	Most cases not necessary, helpful in specific cases for large firms		
Required to apply for government's matching grants and business development services	yes		
Access to ODPP (government procurement system)	yes, but also need the TPIN and in some cases the tax clearance	yes , with BRC	
Lower harassment by police/govt officials	yes for MoIT, but not common at all	yes for taxes, but not common for those without a TPIN	yes, within the main streets, the harassment is common as the municipality needs the money, including locking the premises if firm doesn't pay
Apply for being member of Malawian Chamber of Commerce (MCCCI)	yes		
Provide invoices to customers for tax purposes		yes	

Note: Providing receipts to customers – in some countries mentioned as a potential benefit – is not seen as requiring any of these steps of formalization in Malawi.

Table 2: Descriptive information at baseline

	Full sample	St Dev	Male	Female	Diff
N	*3,002*		*1,807*	*1,195*	
Firm Characteristics					
Manufacturing	6.6	25.0	9.4	2.3	7.1***
Retail	71.1	45.0	76.6	62.9	13.7***
Services	22.3	42.0	14.0	34.8	-20.8***
Number of people working in business	2.0	1.3	2.1	2.0	0.0
Number of owners	1.1	0.4	1.1	1.1	-0.0
Age of firm	8.0	7.1	8.9	6.5	2.3***
Lilongwe-based	49.8	50.0	47.4	53.4	-6.0***
Owner started business	90.8	29.0	92.1	88.9	3.3***
Owns space where operates business	34.0	47.0	35.6	31.7	3.9**
# new products introduced past 12 months	0.7	2.7	0.6	0.8	-0.2**
Advertises	5.5	23.0	6.6	3.9	2.7***
Has written business plan	16.6	37.0	17.7	14.8	2.9**
Has written budget	2.4	15.0	2.4	2.3	0.1
Keeps financial records	55.3	50.0	55.4	55.1	0.3
Provides receipts	17.7	38.0	23.5	9.0	14.4***
Business with access to electricity	26.8	44.0	24.0	30.9	-6.9***
Number of customers past month	945.5	1,293.4	1,031.5	815.8	215.6***
Network contacts any sector	105.8	275.5	114.7	92.3	22.4**
# of competitors	14.6	35.0	15.0	14.1	0.9
Individual Characteristics					
Owner age	33.5	9.0	33.4	33.6	-0.2
Married / Living with someone	80.1	40.0	86.1	71.0	15.2***
HH decision making index (0-100)	84.2	20.0	86.7	80.4	6.3***
Main provider of income to household	76.9	42.0	95.0	49.6	45.3***
Literate	91.5	28.0	92.9	89.3	3.6***
Primary school completed is max education	35.6	48.0	36.6	34.2	2.4
Secondary school completed is max education	24.3	43.0	23.9	25.0	-1.2
Higher education completed	5.3	22.0	4.5	6.5	-2.1**
High capture	36.2	48.0	35.8	37.0	-1.2
Financial Literacy knowledge (0-1)	0.43	16.0	0.44	0.42	0.0***
Mother Entrepreneur	21.5	41.0	17.9	27.0	-9.1***
Mother in Wage Employment	5.9	23.0	4.5	8.0	-3.5***
Father Entrepreneur	21.1	41.0	22.0	19.8	2.2
Father in Wage Employment	27.1	44.0	23.1	33.2	-10.1***
Spouse Entrepreneur	28.6	45.0	30.4	25.9	4.6***
Spouse in Wage Employment	15.0	36.0	4.9	30.1	-25.2***
Financials (US$)					
Revenue past month	1,003.8	2,543.7	1,203.9	701.2	502.7***
Profit past month	213.6	277.2	242.9	169.2	73.7***
Business assets	1,911.4	4,646.7	2,174.0	1,514.3	659.6***
Fixed Assets	969.6	3,358.6	1,093.1	782.8	310.3**
Financial services					
Any account (formal or informal)	62.4	48.0	58.4	68.5	-10.0***
Has bank account	56.8	50.0	54.6	60.2	-5.6***
Has bank account in name of business	2.0	14.0	2.1	1.9	0.2
Uses any ccount just for business purposes	4.2	20.0	3.7	4.9	-1.2
ROSCA_SACCO	7.9	27.0	4.9	12.4	-7.5***

Saves at home	28.5	45.0	31.9	23.4	8.6***
Borrowed in the past	37.0	48.0	35.2	39.8	-4.6***
Bank loan in the past	7.3	26.0	6.0	9.3	-3.3***
Debt Outstanding (US$)	33.6	200.2	32.6	35.1	-2.5
Takes business money whenever for HH	78.5	41.0	77.5	80.0	-2.5*
Time to nearest bank (minutes)	20.7	13.9	20.6	20.9	-0.3
Formality					
Pays city council fees / market fees	55.6	50.0	57.2	53.2	4.0**
Identifies benefit(s) of business registration	71.7	45.0	74.1	68.2	5.9***
Was inspected by municipality before	15.3	36.0	16.1	14.1	1.9
Harassment					
Asked for bribe	4.7	21.0	5.5	3.4	2.1***
Sexual harassment in business	6.0	24.0	2.8	10.8	-8.0***

*, ** and *** denote significant at the 1%, 5% and 10% levels respectively.

Table 3: Verification of randomization

Balance at baseline	**Treatment groups**				**Differences**
across treatment status	(1) BRC	(2) BRC + TPIN	(3) BRC+IS+BBA	Control	F test
N	745	293	1,207	757	3,002
Strata variables					
female	39.1	39.9	40.3	39.8	0.1
Lilongwe	51.0	49.5	50.2	48.0	0.5
Large firm	50.7	56.3	48.6	53.1	2.5*
Age of firm	8.0	7.7	7.7	8.3	1.2
High capture	37.6	35.2	35.6	36.3	0.3
Manufacturing	6.3	6.8	6.3	7.3	0.3
Retail	71.1	72.0	71.3	70.4	0.1
Services	22.6	21.2	22.4	22.3	0.1
Firm Characteristics					
Number of people working in business	2.0	2.0	2.1	2.0	0.2
Number of owners	1.1	1.1	1.1	1.1	1.9
Owner started business	89.7	88.7	91.9	91.2	1.4
Owns space where operates business	36.2	31.1	32.6	35.3	1.4
# new products introduced past 12 months	0.6	0.8	0.7	0.5	1.4
Business with access to electricity	26.9	25.3	28.1	25.1	0.8
# of competitors	14.1	13.8	15.2	14.6	0.2
Time to nearest bank (minutes)	21.3	18.9	20.5	21.3	3.3**
Individual Characteristics					
Owner age	33.6	32.8	33.3	34.0	1.8
Married / Living with someone	78.9	79.9	80.0	81.5	0.5
HH decision making index (0-100)	83.5	83.7	84.3	84.9	0.6
Main provider of income to household	77.6	76.0	78.0	74.7	1.0
Literate	92.7	92.8	90.7	91.0	1.1
Primary school completed is max education	34.8	34.8	35.9	36.5	0.2
Secondary school completed is max education	23.9	26.3	24.3	24.0	0.2
Higher education completed	5.5	4.8	5.4	5.2	0.1
High capture	37.6	35.2	35.6	36.3	0.3
Financial Literacy knowledge (0-1)	0.4	0.4	0.4	0.4	1.5
Mother Entrepreneur	23.5	15.4	21.0	22.6	3.6**
Mother in Wage Employment	5.9	5.1	5.6	6.6	0.4
Father Entrepreneur	20.3	16.7	20.6	24.3	2.9**
Father in Wage Employment	25.5	23.9	28.7	27.5	1.4
Spouse Entrepreneur	28.9	28.3	27.1	30.9	1.1
Spouse in Wage Employment	14.9	11.6	16.1	14.5	1.5

Primary outcomes					
Has TPIN	5.4	5.5	4.8	5.4	0.2
Has city council license	56.8	58.0	54.0	56.0	0.8
Revenue last week winsorized (US$)	246.5	234.1	249.4	249.7	0.2
Revenue last month winsorized (US$)	872.6	841.9	902.1	911.9	0.3
Profit last week winsorized (US$)	58.0	59.1	57.4	58.4	0.1
Profit last month winsorized (US$)	201.5	207.5	208.9	206.4	0.2
Secondary outcomes					
Total workers	2.0	2.0	2.1	2.0	0.2
Number of days in a work month	25.2	25.5	25.4	25.1	1.5
Capital (US$): Fixed Assets	829.2	744.6	1,049.5	1,067.6	2.0
Assets (US$): Fixed Assets + Inventories + Cash	1,683.6	1,554.7	2,124.7	1,936.5	2.8**
Proportion of male workers	60.0	60.8	60.4	58.6	0.3
Mechanisms of change: Access to finance					
Borrowed in the past	36.2	38.2	35.7	39.4	1.0
Amount of a recent loan (US$)	6.7	28.2	5.6	6.6	0.4
Has bank account	58.8	57.0	56.2	55.8	0.6
Has bank account in name of business	2.0	2.1	1.8	2.4	0.2
Uses any account just for business purposes	5.0	4.4	3.7	4.2	0.7
Saves at home	28.7	27.0	28.2	29.5	0.3
ROSCA_SACCO	6.9	9.9	7.5	8.7	1.1
Saved amount (US$)	237.3	224.5	274.9	223.5	1.1
Saved amount at bank (US$)	217.2	196.3	244.9	202.4	1.0
Takes business money whenever for HH	77.5	80.2	78.2	79.3	0.4
Mechanism of change: Other potential benefits of formalization					
Identifies benefit(s) of business registration	69.9	73.4	71.8	72.7	0.6
Was inspected by municipality before	14.9	15.7	15.1	15.9	0.1
Asked for bribe	3.8	4.8	5.2	4.6	0.8
Threats to shutdown	99.6	99.0	99.5	99.3	0.4
Confiscation	5.2	5.1	4.9	5.2	0.0
Sexually harassed	5.5	4.8	6.5	6.1	0.6
Other harassment	9.7	4.4	10.8	9.5	6.3***
Provides receipts	15.3	17.1	18.5	19.2	1.6
Number of customers	37.4	36.9	35.0	37.8	0.6
Tender	4.4	4.8	4.9	4.9	0.1
Has written budget	2.8	2.1	1.7	3.3	2.0
Keeps financial records	54.1	52.2	56.1	56.3	0.7
Advertises	5.8	3.4	6.1	5.3	1.5
Other business activity	14.1	13.3	13.3	14.4	0.2

Note: Variables “without outliers” are winzorized at 99th percentile. F test is calculated from regressions that include only treatment groups dummies (where the dummy excluded is the control group variable). In each case the dependent variable is the row variable. *, ** and *** denote significant at the 1%, 5%, and 10% levels, respectively.

Table 4: Take-up rates

	Received BRC with our assistance					Received TPIN with our assistance			Opened a BBA after IS		
	Full Sample	Male	Female	Lilongwe	Blantyre	Full Sample	Male	Female	Full Sample	Male	Female
Treatment 1: BRC	75.4	76.7	73.4	75.9	74.9						
Treatment 2: BRC + TPIN	68.9	76.2	58.0	70.1	67.8	4.1	4.0	4.3			
Treatment 3: BRC+IS+BBA	84.9	86.1	82.9	84.9	84.9				64.1	65.7	61.7
p-value: Treatment 1=Treatment 2	0.037	0.876	0.003	0.184	0.107						
p-value: Treatment 1=Treatment 3	0.000	0.000	0.002	0.001	0.000						
p-value: Male=Female for Treatment 1		0.315									
p-value: Male=Female for Treatment 2		0.001					0.909				
p-value: Male=Female for Treatment 3		0.142								0.153	
p-value: Lilongwe=Blantyre for Treatment 1				0.759							
p-value: Lilongwe=Blantyre for Treatment 2				0.661							
p-value: Lilongwe=Blantyre for Treatment 3				1.000							

Notes: BRC denotes assistance obtaining a business registration certificate; BRC+TPIN denotes assistance with a BRC and with getting a tax-payer identification number; BRC+IS+BBA denotes assistance with a BRC, along with a bank information session and the offer of a business bank account at the end of this session. All specifications include strata dummies.

Table 5: Reasons for not accepting BRC

	All treatment groups (N=2245)			BRC+TPIN group (N=293)		
	Male	Female	Diff	Male	Female	Diff
Already registered	0.9	1.2	-0.3	1.7	0.9	0.9
Needed to consult spouse	0.2	2.7	-2.5***	0.6	4.3	-3.7**
Failed to locate/closed/moved	14.5	16.3	-1.8	18.2	29.9	-11.7**
Refusal	0.9	1.0	-0.1	0.0	0.9	-0.9
No info on reason	1.9	2.0	-0.1	3.4	6.0	-2.6
Accepted registration	81.6	76.7	4.9***	76.1	58.1	18.0***

*, ** and *** denote significant at the 10%, 5%, and 1% levels respectively.

Table 6a: Impacts on Formalization

	Z score	BRC	TPIN	City council
	Data pooled for all follow up surveys			
Panel A: Full sample				
Treatment 1: BRC	0.676***	0.515***	0.012*	0.017
	(0.031)	(0.016)	(0.007)	(0.018)
	0.000	0.000	0.089	0.358
	0.000	*0.000*	*0.134*	*0.479*
Treatment 2: BRC + TPIN	0.665***	0.532***	-0.000	-0.007
	(0.041)	(0.024)	(0.009)	(0.024)
	0.000	0.000	0.965	0.766
	0.000	*0.000*	*0.965*	*0.766*
Treatment 3: BRCE + IS + BBA	0.824***	0.636***	0.008	0.015
	(0.025)	(0.013)	(0.006)	(0.016)
	0.000	0.000	0.194	0.359
	0.000	*0.000*	*0.250*	*0.479*
Control group mean	0.000	0.081	0.056	0.641
Sample size	10,900	10,900	10,900	10,900
p-value: Treatment 1 = Treatment 2	0.811	0.519	0.179	0.314
p-value: Treatment 1 = Treatment 3	0.000	0.000	0.561	0.909
p-value: Treatment 2 = Treatment 3	0.000	0.000	0.323	0.322
p-value test of equality	0.000	0.000	0.273	0.603
p-value test of equality of treatment effects over time				
Treatment 1	0.000	0.002	0.554	0.237
Treatment 2	0.000	0.098	0.369	0.809
Treatment 3	0.000	0.001	0.044	0.304

Notes: Data pooled for all four follow-up surveys. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. The Z score index is constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (*q-values* in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 6b: Impacts on Formalization

	Z score	BRC	TPIN	City council
	Data pooled for all follow up surveys			
Panel B: Results by Gender				
Treatment 1: BRC	0.728***	0.543***	0.020**	0.025
	(0.039)	(0.021)	(0.009)	(0.023)
	0.000	0.000	0.024	0.267
	0.000	*0.000*	*0.048*	*0.420*
Treatment 2: BRC + TPIN	0.796***	0.607***	0.010	0.024
	(0.050)	(0.031)	(0.011)	(0.029)
	0.000	0.000	0.388	0.418
	0.000	*0.000*	*0.388*	*0.511*
Treatment 3: BRCE + IS + BBA	0.881***	0.667***	0.015*	0.026
	(0.032)	(0.017)	(0.008)	(0.020)
	0.000	0.000	0.050	0.201
	0.000	*0.000*	*0.086*	*0.368*
Treatment 1: BRC * Female	-0.131**	-0.071**	-0.020	-0.021
	(0.063)	(0.033)	(0.014)	(0.039)
	0.037	0.033	0.144	0.594
	0.037	*0.047*	*0.192*	*0.654*
Treatment 2: (BRC + TPIN) * Female	-0.334***	-0.191***	-0.026	-0.079
	(0.084)	(0.049)	(0.017)	(0.050)
	0.000	0.000	0.129	0.117
	0.000	*0.000*	*0.192*	*0.257*
Treatment 3: (BRCE + IS + BBA) * Female	-0.144***	-0.077***	-0.017	-0.028
	(0.051)	(0.026)	(0.012)	(0.034)
	0.005	0.003	0.165	0.418
	0.005	*0.006*	*0.198*	*0.511*
Control group mean: Male	0.031	0.091	0.051	0.680
Control group mean: Female	-0.047	0.065	0.064	0.583
p-value: Treatment 1 = Treatment 2 for males	0.219	0.065	0.425	0.960
p-value: Treatment 1 = Treatment 3 for males	0.000	0.000	0.572	0.962
p-value: Treatment 2 = Treatment 3 for males	0.092	0.062	0.671	0.930
p-value: Treatment 1 = Treatment 2 for females	0.076	0.208	0.211	0.145
p-value: Treatment 1 = Treatment 3 for females	0.008	0.000	0.842	0.824
p-value: Treatment 2 = Treatment 3 for females	0.000	0.000	0.239	0.161
p-value test of equality for males	0.000	0.000	0.098	0.596
p-value test of equality for females	0.000	0.000	0.575	0.493

Notes: Data pooled for all four follow-up surveys. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Panel B includes a dummy for "female". The Z score index is constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (*q-values* in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 7a: Impacts on Business Performance

	Z score*, **	Z score sales	Z score profits	Sales (U$S)	Sales (U$S) winzorized	Profits (U$S)	Profits (U$S) winzorized
	Data pooled for all follow-up surveys						
Panel A: Full sample							
Treatment 1: BRC	0.008	0.024	-0.009	37.055	19.685	-0.996	1.863
	(0.029)	(0.031)	(0.031)	(63.793)	(43.448)	(9.663)	(7.238)
	0.793	0.442	0.771	0.561	0.651	0.918	0.797
	0.877	*0.590*	*0.830*	*0.724*	*0.715*	*0.918*	*0.797*
Treatment 2: BRC + TPIN	0.030	0.051	0.011	143.657	44.525	2.571	4.407
	(0.040)	(0.045)	(0.041)	(113.816)	(58.201)	(12.255)	(9.787)
	0.453	0.258	0.789	0.207	0.444	0.834	0.653
	0.877	*0.517*	*0.830*	*0.331*	*0.592*	*0.918*	*0.746*
Treatment 3: BRCE + IS + BBA	0.106***	0.118***	0.094***	224.849***	130.636***	26.698***	22.977***
	(0.028)	(0.030)	(0.030)	(69.022)	(40.630)	(9.316)	(6.924)
	0.000	0.000	0.002	0.001	0.001	0.004	0.001
	0.001	*0.000*	*0.006*	*0.003*	*0.002*	*0.007*	*0.001*
Control group mean	0.000	0.000	0.000	731.126	668.128	159.195	152.474
Sample size	10,900	10,900	10,900	10,900	10,900	10,900	10,900
p-value: Treat1 = Treat 2	0.578	0.559	0.629	0.362	0.672	0.777	0.795
p-val: Treat 1 = Treat 3	0.001	0.003	0.001	0.007	0.008	0.005	0.002
p-val: Treat 2 = Treat 3	0.060	0.130	0.043	0.485	0.130	0.050	0.053
p-value test of equality	0.001	0.001	0.002	0.008	0.007	0.010	0.003
p-value test of equality of treatment effects over time							
Treatment 1	0.839	0.969	0.472	0.868	0.857	0.398	0.598
Treatment 2	0.859	0.716	0.896	0.284	0.759	0.761	0.621
Treatment 3	0.173	0.324	0.152	0.740	0.346	0.310	0.028

Notes: Data pooled for all four follow-up surveys. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. The Z score index is constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (*q-values* in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 7b: Impacts on Business Performance

	Z score*, **	Z score sales	Z score profits	Sales (U$S)	Sales (U$S) winzorized	Profits (U$S)	Profits (U$S) winzorized
	Data pooled for all follow-up surveys						
Panel B: Results by Gender							
Treatment 1: BRC	-0.022	0.000	-0.044	-64.228	-34.123	-10.280	-6.876
	(0.042)	(0.045)	(0.043)	(89.485)	(62.204)	(14.082)	(9.971)
	0.606	0.999	0.306	0.473	0.583	0.465	0.491
	0.817	*0.999*	*0.673*	*0.692*	*0.802*	*0.640*	*0.674*
Treat 2: BRC + TPIN	0.019	0.035	0.007	100.668	-9.074	0.680	0.330
	(0.057)	(0.063)	(0.059)	(162.885)	(80.126)	(17.952)	(13.651)
	0.734	0.581	0.906	0.537	0.910	0.970	0.981
	0.817	*0.779*	*0.906*	*0.692*	*0.910*	*0.970*	*0.996*
Tr 3: BRCE + IS + BBA	0.117***	0.137***	0.098**	249.589**	137.709**	27.240**	23.024**
	(0.041)	(0.044)	(0.042)	(102.957)	(60.007)	(13.208)	(9.758)
	0.004	0.002	0.018	0.015	0.022	0.039	0.018
	0.024	*0.011*	*0.068*	*0.042*	*0.048*	*0.086*	*0.034*
Treat 1: BRC * Female	0.075	0.061	0.090	257.575**	136.729*	23.608	22.194
	(0.055)	(0.058)	(0.059)	(123.428)	(82.646)	(18.355)	(14.154)
	0.179	0.297	0.128	0.037	0.098	0.198	0.117
	0.491	*0.741*	*0.353*	*0.081*	*0.180*	*0.312*	*0.184*
Treat 2: (BRC + TPIN) * Female	0.028	0.041	0.010	109.099	136.831	4.749	10.344
	(0.078)	(0.086)	(0.080)	(216.548)	(113.846)	(22.839)	(18.978)
	0.716	0.637	0.897	0.614	0.229	0.835	0.586
	0.817	*0.779*	*0.906*	*0.692*	*0.361*	*0.970*	*0.716*
Treat 3: (BRCE + IS + BBA) * Female	-0.026	-0.047	-0.012	-61.304	-17.196	-1.295	-0.059
	(0.054)	(0.057)	(0.057)	(126.132)	(76.049)	(18.085)	(13.430)
	0.624	0.404	0.833	0.627	0.821	0.943	0.996
	0.817	*0.741*	*0.906*	*0.692*	*0.903*	*0.970*	*0.996*
Control group: Male	0.112	0.118	0.106	921.486	822.898	185.967	177.783
Control group: Female	-0.169	-0.179	-0.160	444.180	434.831	118.840	114.324
p-value: Treat 1 = Treat 2 for males	0.468	0.583	0.376	0.309	0.750	0.556	0.589
p-value: Treat 1 = Treat 3 for males	0.001	0.002	0.000	0.001	0.003	0.007	0.001
p-value: Treat 2 = Treat 3 for males	0.079	0.099	0.107	0.366	0.057	0.137	0.087

p-value: Treat 1 = Treat 2 for females	0.925	0.816	0.613	0.918	0.771	0.579	0.738
p-value: Treat 1 = Treat 3 for females	0.342	0.490	0.326	0.961	0.755	0.319	0.459
p-value: Treat 2 = Treat 3 for females	0.446	0.812	0.209	0.888	0.930	0.165	0.356
p-value test of equality for males	0.003	0.004	0.004	0.010	0.015	0.041	0.010
p-value test of equality for females	0.081	0.060	0.162	0.012	0.041	0.187	0.091

Notes: Data pooled for all follow-up surveys. Sales and profits are converted from local currency to US dollars. Variables are winsorized at the 99th percentile. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Panel B includes a dummy for "female". Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parantheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 8: Impacts on Taxes

	TPIN	Taxes and market fees costs (US$)
Full sample		
Treatment 1: BRC	0.012*	-0.140
	(0.007)	(0.211)
	0.089	0.505
	0.134	*0.569*
Treatment 2: BRC + TPIN	-0.000	-0.342
	(0.009)	(0.237)
	0.965	0.149
	0.965	*0.335*
Treatment 3: BRCE + IS + BBA	0.008	0.398
	(0.006)	(0.304)
	0.194	0.191
	0.250	*0.344*
Control group mean	0.056	3.383
Sample size	10,900	10900
p-value: Treatment 1 = Treatment 2	0.179	0.289
p-value: Treatment 1 = Treatment 3	0.561	0.048
p-value: Treatment 2 = Treatment 3	0.323	0.013
p-value test of equality	0.273	0.085
p-value test of equality of treatment effects over time		
Treatment 1	0.554	0.803
Treatment 2	0.369	0.997
Treatment 3	0.044	0.189

Notes: Data pooled for all follow-up surveys, unless otherwise noted. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 9a: Impacts on Trust / Formal Business Practices

	Trust		Formal business practices	
	Trust in institutions	Trust in institutions bis	Firm provides formal receipts	Business has written annual budget
Panel A: Full sample				
Treatment 1: BRC	-0.006	-0.007	-0.010	-0.014
	(0.013)	(0.014)	(0.014)	(0.011)
	0.814	0.716	0.456	0.199
	-0.014	*-0.015*	*0.513*	*0.358*
Treatment 2: BRC + TPIN	-0.014	-0.015	-0.015	-0.007
	(0.018)	(0.018)	(0.018)	(0.014)
	0.641	0.572	0.402	0.638
	-0.003	*-0.002*	*0.513*	*0.638*
Treatment 3: BRCE + IS + BBA	-0.003	-0.002	0.012	0.015
	(0.012)	(0.012)	(0.013)	(0.010)
	0.829	0.895	0.356	0.125
	0.836	*0.895*	*0.513*	*0.282*
Control group mean	0.578	0.546	0.211	0.159
Sample size	10,900	10,900	10,900	10,900
p-value: Treatment 1 = Treatment 2	0.662	0.659	0.784	0.597
p-value: Treatment 1 = Treatment 3	0.753	0.667	0.080	0.003
p-value: Treatment 2 = Treatment 3	0.493	0.435	0.117	0.096
p-value test of equality	0.867	0.833	0.234	0.024
p-value test of equality of treatment effects over time				
Treatment 1	0.572	0.555	0.559	0.970
Treatment 2	0.818	0.816	0.779	0.197
Treatment 3	0.620	0.706	0.668	0.663

Table 9b: Impacts on Harassment

	Harassment									
	Z score Harassment	No municipality inspection	No tax inspection	No other kind of inspection	Asked for bribe	Confident to say no to bribes	No threats of shutdown	No confiscation	No sexual harassment	No other harassment
	Data pooled for all follow-up surveys									
Panel A: Full sample										
Treatment 1: BRC	-0.002	0.006	-0.008	-0.001	-0.004	-0.000	0.003	0.006	-0.004	0.000
	(0.030)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)	(0.014)
	0.953	0.677	0.560	0.933	0.751	0.997	0.838	0.661	0.795	0.996
	0.992	*0.871*	*0.653*	*0.933*	*0.845*	*0.997*	*0.954*	*0.915*	*0.956*	*0.996*
Treatment 2: BRC + TPIN	0.000	0.003	0.004	-0.002	-0.011	0.006	-0.001	0.007	-0.009	0.002
	(0.038)	(0.019)	(0.017)	(0.018)	(0.018)	(0.020)	(0.018)	(0.017)	(0.018)	(0.018)
	0.992	0.884	0.811	0.920	0.541	0.763	0.954	0.687	0.601	0.897
	0.992	*0.884*	*0.811*	*0.933*	*0.695*	*0.890*	*0.954*	*0.915*	*0.902*	*0.996*
Treatment 3: BRCE + IS + BBA	0.027	0.003	0.017	0.027**	0.008	0.012	0.003	0.019	0.000	0.010
	(0.027)	(0.014)	(0.012)	(0.013)	(0.012)	(0.014)	(0.012)	(0.012)	(0.012)	(0.013)
	0.304	0.808	0.164	0.033	0.499	0.380	0.839	0.117	0.982	0.458
	0.487	*0.884*	*0.230*	*0.078*	*0.695*	*0.531*	*0.954*	*0.352*	*0.982*	*0.996*
Control group mean	0.000	0.709	0.809	0.795	0.826	0.597	0.806	0.826	0.797	0.782
Sample size	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900	10,900
p-value: Treat 1 = Treat 2	0.955	0.860	0.481	0.974	0.711	0.762	0.830	0.959	0.749	0.899
p-value: Treat 1 = Treat 3	0.275	0.830	0.040	0.027	0.291	0.384	0.979	0.290	0.754	0.459
p-value: Treat 2 = Treat 3	0.443	0.979	0.423	0.082	0.245	0.745	0.834	0.451	0.566	0.671
p-value test of equality	0.617	0.982	0.195	0.049	0.579	0.773	0.993	0.423	0.941	0.844
p-value test of equality of treatment effects over time										
Treatment 1	0.037	0.026	0.615	0.113	0.398	0.143	0.006	0.070	0.102	0.513
Treatment 2	0.214	0.567	0.447	0.530	0.488	0.029	0.488	0.289	0.146	0.445
Treatment 3	0.487	0.229	0.649	0.850	0.591	0.197	0.485	0.736	0.569	0.696

Notes: Data pooled for all follow-up surveys, unless otherwise noted. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 10: Impacts on Formal Markets

	Has a business bank account	Borrowed bank loan past 6 months for business	Belongs to Malawian Chamber of Commerce	Has export license	Participates in Gov't tenders	Location of the business has changed	Social networks
	Data pooled for all follow-up surveys						F2, F3, F4
Panel A: Full sample							
Treatment 1: BRC	0.017**	-0.007	0.002	-0.003	-0.004	-0.009	0.000
	(0.008)	(0.005)	(0.002)	(0.003)	(0.008)	(0.012)	(0.009)
	0.031	0.149	0.461	0.392	0.570	0.432	0.999
	0.047	*0.268*	*0.465*	*0.549*	*0.802*	*0.504*	*0.999*
Treatment 2: BRC + TPIN	0.010	-0.006	0.002	-0.002	0.003	0.008	0.005
	(0.011)	(0.007)	(0.003)	(0.005)	(0.011)	(0.016)	(0.013)
	0.338	0.423	0.465	0.674	0.802	0.617	0.709
	0.380	*0.476*	*0.465*	*0.674*	*0.802*	*0.617*	*0.999*
Treatment 3: BRCE + IS + BBA	0.390***	-0.006	0.008***	0.007*	0.003	0.009	-0.008
	(0.012)	(0.005)	(0.002)	(0.003)	(0.007)	(0.011)	(0.008)
	0.000	0.238	0.001	0.060	0.664	0.401	0.345
	0.000	*0.357*	*0.004*	*0.139*	*0.802*	*0.504*	*0.690*
Control group mean	0.041	0.032	0.006	0.019	0.073	0.127	0.082
Sample size	10,900	10,900	10,900	10,900	10,900	10,900	8,070
p-value: Treatment 1 = Treatment 2	0.520	0.794	0.844	0.824	0.489	0.282	0.706
p-value: Treatment 1 = Treatment 3	0.000	0.733	0.010	0.004	0.279	0.080	0.331
p-value: Treatment 2 = Treatment 3	0.000	0.971	0.078	0.058	0.954	0.954	0.295
p-value test of equality	0.000	0.528	0.007	0.026	0.739	0.344	0.597
p-value test of equality of treatment effects over time							
Treatment 1	0.037	0.014	0.621	0.121	0.353	0.486	0.875
Treatment 2	0.634	0.176	0.388	0.837	0.892	0.835	0.741
Treatment 3	0.000	0.004	0.410	0.320	0.821	0.387	0.430

Notes: Data pooled for all follow-up surveys, unless otherwise noted. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 11a: Impacts on Access to Finance

	Z score Multiple A2F	Has a bank account	Has a business bank account	Used an account just for business purposes	Does not save at home	Does not save in ROSCA or SACCO	Saves at bank
	Data pooled for all follow-up surveys						
Panel A: Full sample							
Treatment 1: BRC	0.009	0.012	0.017**	-0.004	-0.004	0.007	0.009
	(0.026)	(0.018)	(0.008)	(0.010)	(0.017)	(0.015)	(0.018)
	0.733	0.505	0.031	0.715	0.792	0.656	0.603
	0.824	*0.505*	*0.047*	*0.715*	*0.792*	*0.738*	*0.679*
Treatment 2: BRC + TPIN	0.024	0.018	0.010	-0.022*	-0.014	0.020	0.017
	(0.033)	(0.023)	(0.011)	(0.013)	(0.022)	(0.019)	(0.023)
	0.472	0.425	0.338	0.084	0.531	0.289	0.467
	0.607	*0.478*	*0.380*	*0.095*	*0.598*	*0.371*	*0.600*
Treatment 3: BRCE + IS + BBA	0.241***	0.181***	0.390***	0.152***	0.071***	0.033**	0.186***
	(0.022)	(0.015)	(0.012)	(0.011)	(0.015)	(0.013)	(0.015)
	0.000	0.000	0.000	0.000	0.000	0.012	0.000
	0.000	*0.000*	*0.000*	*0.000*	*0.000*	*0.017*	*0.000*
Control group mean	0.000	0.654	0.041	0.130	0.440	0.731	0.631
Sample size	9,438	9,438	10,900	10,900	9,438	9,438	9,438
p-value: Treat 1 = Treat 2	0.655	0.779	0.520	0.154	0.671	0.489	0.746
p-value: Treat 1 = Treatment 3	0.000	0.000	0.000	0.000	0.000	0.051	0.000
p-value: Treatment 2 = Treatment 3	0.000	0.000	0.000	0.000	0.000	0.456	0.000
p-value test of equality	0.000	0.000	0.000	0.000	0.000	0.053	0.000
p-value test of equality of treatment effects over time							
Treatment 1	0.749	0.672	0.037	0.182	0.216	0.486	0.610
Treatment 2	0.455	0.692	0.634	0.941	0.187	0.359	0.828
Treatment 3	0.000	0.003	0.000	0.000	0.006	0.043	0.004

Notes: Data pooled for all follow-up surveys, unless otherwise noted. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively.

Table 11b: Impacts on Access to Finance

	Amount that business can borrow in 2 weeks (U$S)	Amount borrowed (U$S)	Bank contacted the firm	Amount in bank savings (U$S)	Has insurance for business	Does not take business money for the household	High relative savings	Business keeps financial records
Panel A: Full sample								
Treatment 1: BRC	-10.174	13.380	0.002	-17.560	0.004	-0.010	-0.002	0.032*
	(34.061)	(14.912)	(0.013)	(23.705)	(0.003)	(0.014)	(0.017)	(0.017)
	0.765	0.370	0.888	0.459	0.202	0.491	0.913	0.067
	0.765	*0.370*	*0.888*	*0.516*	*0.283*	*0.553*	*0.913*	*0.092*
Treatment 2: BRC + TPIN	-31.505	18.367	0.014	15.738	0.008	-0.007	0.003	-0.026
	(46.437)	(19.850)	(0.018)	(34.799)	(0.005)	(0.019)	(0.023)	(0.022)
	0.498	0.355	0.431	0.651	0.129	0.719	0.905	0.243
	0.580	*0.370*	*0.539*	*0.651*	*0.283*	*0.719*	*0.913*	*0.243*
Treatment 3: BRCE + IS + BBA	91.969***	19.137*	0.090***	44.334	0.079***	0.057***	0.031*	0.081***
	(33.942)	(11.392)	(0.013)	(41.621)	(0.005)	(0.013)	(0.016)	(0.015)
	0.007	0.093	0.000	0.287	0.000	0.000	0.052	0.000
	0.009	*0.140*	*0.000*	*0.369*	*0.000*	*0.000*	*0.066*	*0.000*
Control group mean	570.947	79.00	0.100	179.0	0.009	0.287	0.527	0.457
Sample size	10,900	10,900	5,350	10,900	10,900	10,900	10,900	10,900
p-value: Treatment 1 = Treatment 2	0.634	0.822	0.497	0.326	0.482	0.867	0.839	0.010
p-value: Treatment 1 = Treatment 3	0.001	0.705	0.000	0.116	0.000	0.000	0.035	0.002
p-value: Treatment 2 = Treatment 3	0.006	0.969	0.000	0.544	0.000	0.000	0.205	0.000
p-value test of equality	0.002	0.372	0.000	0.386	0.000	0.000	0.102	0.000
p-value test of equality of treatment effects over time								
Treatment 1	0.189	0.742	0.987	0.794	0.869	0.750	0.399	0.435

Treatment 2	0.322	0.574	0.330	0.047	0.740	0.777	0.990	0.166
Treatment 3	0.691	0.160	0.000	0.207	0.471	0.581	0.957	0.278

Notes: Data pooled for all follow-up surveys, unless otherwise noted. Specifications include strata dummies, a variable representing the initial outcome at baseline, and a variable indicating missing data at baseline. Z score index constructed following Kling, Liebman, and Katz (2007). Adjustments to control false discovery rate (FDR) computed following Benjamin and Hochberg (1995). p-values and q-values are reported below standard errors (q-values in italics). Clustered standard errors by firms in parentheses. *, ** and *** denote significant at the 10%, 5%, and 1% levels, respectively. ^Bank contacted the firm for F3 an