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MSMEs Financing in Burundi and its Welfare Effect

Janvier D. Nkurunziza

[1] *United Nations Conference on Trade and Development (UNCTAD), BeFinD*

UNIVERSITÉ DE NAMUR

IOB
Institute of Development Policy and Management
University of Antwerp

Leuven Centre for Global Governance Studies

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Content

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List of acronyms

Abbreviation	Explanation
ATM	Automated Teller Machine
BRB	Banque de la République du Burundi
GDP	Gross Domestic Product
GLP	Gibrat's Law of Proportionate Effect
IMF	Iinternational Monetary Fund
MSME	Micro, Small and Medium Enterprise
PPP	Purchasing Power Parities
RPED	Regional Programme on Enterprise Development
SME	Small and Medium Enterprise
UNCTAD	United Nations Conference on Trade and Development
US$	American dollar

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Abstract

The business sector in Burundi is dominated by small firms, with a median firm size of seven permanent workers. This has implications for firm resilience, access to resources, productivity and welfare. Large firms are more resilient, more productive, offer higher wages and other job-related benefits, and have a better access to resources. The question explored in this paper is whether supporting MSMEs in a fragile state like Burundi could increase welfare. This issue should be analyzed using panel data, which is not yet available. Relying on cross-sectional data, there are indications that welfare could not be improved just through the provision of loans to MSMEs. Other channels could include the fostering of female entrepreneurship, increasing training, helping firms to grow, and focusing aid on MSMSEs outside the capital city where entrepreneurship suffers from the urban bias.

0 | Introduction

Burundi's economy is dominated by Micro, Small, and Medium Enterprises (MSMEs). According to data from a census of formal firms carried out in 2010 covering the year 2007, micro firms (those with less than 5 full time workers) represented 34 per cent of the population of formal firms while small firms (those with 5 to 19 full time workers) represented 46 per cent of the total number of formal firms. Hence, micro and small firms represented 80 per cent of all formal firms in Burundi in 2007. With a median size of 7 full time workers for the population of firms in 2007, the distribution of firm size even within the micro and small size groups is skewed towards the smallest size.

The distribution of firm size in Burundi has implications for firm resilience particularly given Burundi's challenging economic environment, access to resources, productivity, wages, and, as a result, welfare. Using panel data on Kenyan manufacturing, Nkurunziza (2015) finds that the rate of firm survival is inversely related to firm size, with micro firms displaying the highest rate of failure. Smaller firms also have the lowest rate of access to credit markets. According to Page and Soderbom (2015), average productivity measured as value added per worker in a typical African firm with 100 workers is more than three times higher than in a firm with 5 workers. Furthermore, while small and large firms tend to create similar numbers of jobs, in net terms, employment in small firms is less stable and this category of firms pay lower wages. The average earning of a worker in a 100-worker firm is 80 per cent higher than in a 5-worker firm and this difference is not fully attributable to the differences in workers' skills; there seem to be returns to firm size that are not explained by workers' age, education, and tenure of employment, the typical factors that explain differences in skills.

In Burundi, using data from the 1992 firm survey and measuring size by the number of full time employees as is standard practice in the literature on developing countries, Sleuwaegen and Goedhuys (1998b) report that access to credit particularly by micro firms, was identified by firm managers as the most important factor hampering the growth of their firms. Unfavourable market conditions such as insufficient demand, regulation, and poor infrastructure were the other three groups of factors. In this light, the question whether external assistance to MSMEs, through for example credit provision, can help them to survive, grow and eventually become more productive and pay higher wages is an important policy issue. It is relevant for donors who would like to determine the best ways of making aid more effective. The question is also relevant for poverty reduction policies that focus on the generation of employment, and for industrial policy.

The issue of extending assistance to MSMEs is even more relevant for fragile countries such as Burundi where political and economic instability over the years has hindered the development of the private sector and led to slow economic growth. Indeed, slow growth reduces domestic demand while macroeconomic instability, measured by inflation and currency devaluation,

for example, affect firms through increasing input prices, among others. As Section 2 discusses, these conditions have prevailed in Burundi since the early 1990s. With respect to the effect of political instability on firms, particularly its extreme form of civil war as has been the case in Burundi, the channels include the destruction of productive capital, disruption of economic activities, diversion of resources to non-productive sectors, dissaving, and portfolio substitution (Collier, 1999).

This paper starts from the premise that direct assistance to micro, small and medium-size enterprises, particularly those with limited or no access to credit, can help them to become more resilient, grow, and eventually be more efficient and pay higher wages. This in turn would increase the welfare of firm workers and their families, contributing to increasing income per capita and reducing poverty. Welfare in this paper is defined in a wide sense that includes job creation, higher wages and other workers' earnings, and higher sales.

The paper is structured in 4 sections. Section 1 sets the stage by discussing Burundi's political and economic fragility and its resulting negative effect on welfare. It reviews the types of MSMEs populating Burundi's business sector in order to understand what could be their specific needs. Section 2 briefly reviews the relevant literature on MSMEs in Burundi. Section 3 empirically analyses the determinants of MSMEs welfare in Burundi. Section 4 concludes with some policy suggestions.

1 | Setting the stage

1.1 Brief historical background of political and economic fragility in Burundi

Burundi's post-colonial history has been characterized by strong fragility. The country fares poorly on all four indicators generally used to assess fragility, namely high political instability, poor economic performance, low institutional quality, and weak governance (Gelbard et al., 2015). With respect to political instability, since independence in 1962, Burundi has experienced six episodes of internal armed conflict that have claimed more than 500000 lives and generated more than one million refugees (Table 1). The longest and deadliest episode of civil war started in 1993 and ended in 2003 after 300000 lives were lost and about 700000 refugees fled the country. The latest episode of political instability started in April 2015 and is ongoing. As Table 1.1 shows, the current conflict has claimed more than one thousand lives[1] and forced about 260000 Burundians to seek refuge in neighbouring countries.[2]

Table 1.1: Characteristics of Burundi's Internal Armed Conflict

Characteristic	1965	1972	1988	1991	1993-2003	2015 to date*
Duration (months)	2	4	2	1	120	17
Deaths (thousands)	5	200	15	1–3	300	1.2
Refugees (thousands)	0	300	50	38	687	260
Deaths & refugees over total population (%)ᵇ	0.2	14.0	1.3	0.7	17.1	2.4
Years from previous conflict	—	6	16	3	2	12
Provinces affected	Muramvya	Whole country	Ngozi, Kirundo	Cibitoke, Bubanza, Bujumbura	Whole country	Whole country but mostly Bujumbura

Source: Ngaruko and Nkurunziza (2005), updated using information in ACLED (2016).

Note: Data in the last column (2015 to date) reflects information available by April 2016, based on ACLED (2016).

Table 1.1 shows that Burundi has gone through cycles of political violence, creating a permanent sense of political instability. This in turn has led to severe economic fragility as illustrated by the slow growth of the economy and declining income per capita over the years (Figure 1.1). In 2015, for example, Burundi's GDP growth was negative as a result of political instability and the suspension of most external assistance (IMF, 2015). From a long term

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[1] The exact number is much higher as a large number of people that are unaccounted for are feared dead.

[2] The literature uses two different thresholds on casualties to characterize the intensity of instability. Cases with 25 to less than 1000 combat-related deaths per year are categorized as low-intensity armed conflicts (Möller and Heldt, 2007); situations with 1000 and more combat-related deaths per year are characterized as full-blown civil wars (http://cow.la.psu.edu/COW2%20Data/WarData_NEW/COW%20Website%20-%20Typology%20of%20war.pdf)

perspective, Burundi's GDP per capita has been declining since the early 1990s. In 2013, real per capita GDP stood at $155, the same level as in 1968.[3] One major consequence of this poor economic performance is a persistently high level of poverty. In 2012, 77 per cent of Burundians were considered poor, as their daily income was less than US$1.9 measured in 2011 Purchasing Power Parities (PPP).[4] Using Rwanda as a counterfactual, Figure 1.1 shows that the trend of Burundi's GDP per capita has never recovered from its collapse in the early 1990s following the eruption of civil war in October 1993 (Nkurunziza, 2016a).

Figure 1.1: Average GDP per capita in Burundi and Rwanda (constant 2005 US$)
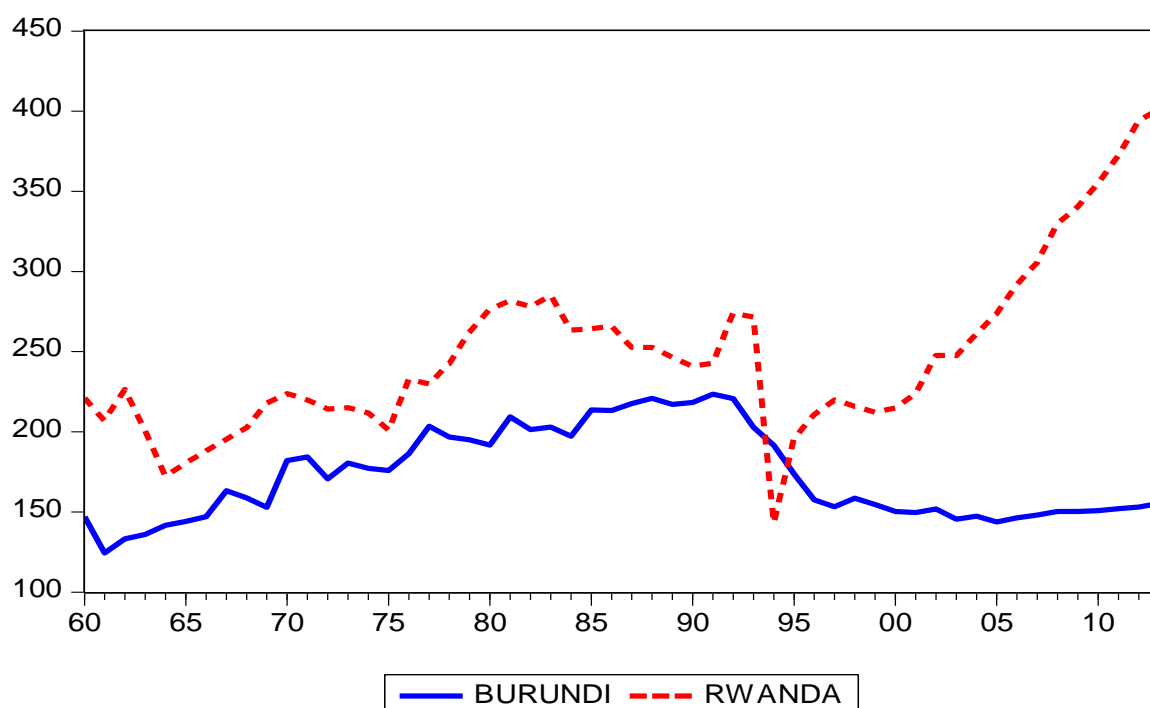
As figure 1.1 shows, Rwanda, in contrast, experienced a dip in its GDP per capita just in 1994 due to the Rwandan genocide. However, the country recovered quickly and has maintained a steady increase in its GDP per capita. This indicates that factors other than political instability might explain why Burundi has persistently failed to turn around its economy even after the end of its long epidode of civil war from 1993 to 2003. In this context, it is expected that firm managers who complained about low demand even before the trend reversal in GDP per capita in 1993 (Sleuwaegen and Goedhuys, 1998b), have been severely hit by the worsening of the country's economic performance over the last two decades.

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3 Data from World Development Indicators.

4 This data is from the World Bank's POVCALNET, http://iresearch.worldbank.org/PovcalNet/index.htm?1 accessed on 29 March 2016.

Although there is no systematic microeconomic evidence of the effect of the latest episode of political instability on the business sector, anecdotal evidence suggests that a large number of MSMEs have closed down since the eruption of violence in the first semester of 2015. This has been the result of security concerns and the collapse of economic activity. Evidence provided in Nkurunziza and Ngaruko (2002) suggests that political instability has direct and indirect effects on business. With respect to the direct effects, a sample of 84 firms surveyed in 1994, less than one year after the onset of the 1993-2003 episode of civil war, showed that only 45 per cent of them had kept their pre-crisis size or reduced it by less than 10 per cent. About 15 per cent of firms shrank by 10 to 25 per cent and 21 per cent of them contracted by more than 25 per cent. Another indication that firms face additional difficulties during periods of political instability is the finding that commercial banks' short-term lending to firms in the form of working capital increased from 62 per cent to 78 percent of total lending to the private sector, just a few months after the beginning of the 1993 conflict, as firms were struggling to remain afloat in a very difficult environment (Nkurunziza and Ngaruko, 2002). This finding is confirmed by comparative data that shows that political instability is the second most important factor affecting firm growth in fragile states, just after access to finance (Dayé et al., 2015).

The indirect effect of political instability on business has mainly been through low macroeconomic instability and low demand as the economy declines. As Figure 1.2 illustrates, the rate of inflation was particularly high during the 1993-2003 civil war and remained elevated even after the war. Between 1993 and 2013, inflation was, on average, 14.5 per cent per year, declining to about 10 per cent between 2004 and 2015.[5] The collapse in GDP per capita depicted in Figure 1.2 has been the result of poor economic performance. Indeed, the economic growth rate displayed negative values in several years. Low and diminishing income per capita, in turn, has led to a decline of the population's purchasing power and hence low demand. Combining this challenging economic environment with a relatively high rate of lending, investment, particularly private investment by firms, has remained insignificant.

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5 Based on data from World Development Indicators

Figure 1.2: Macroeconomic instability and economic performance
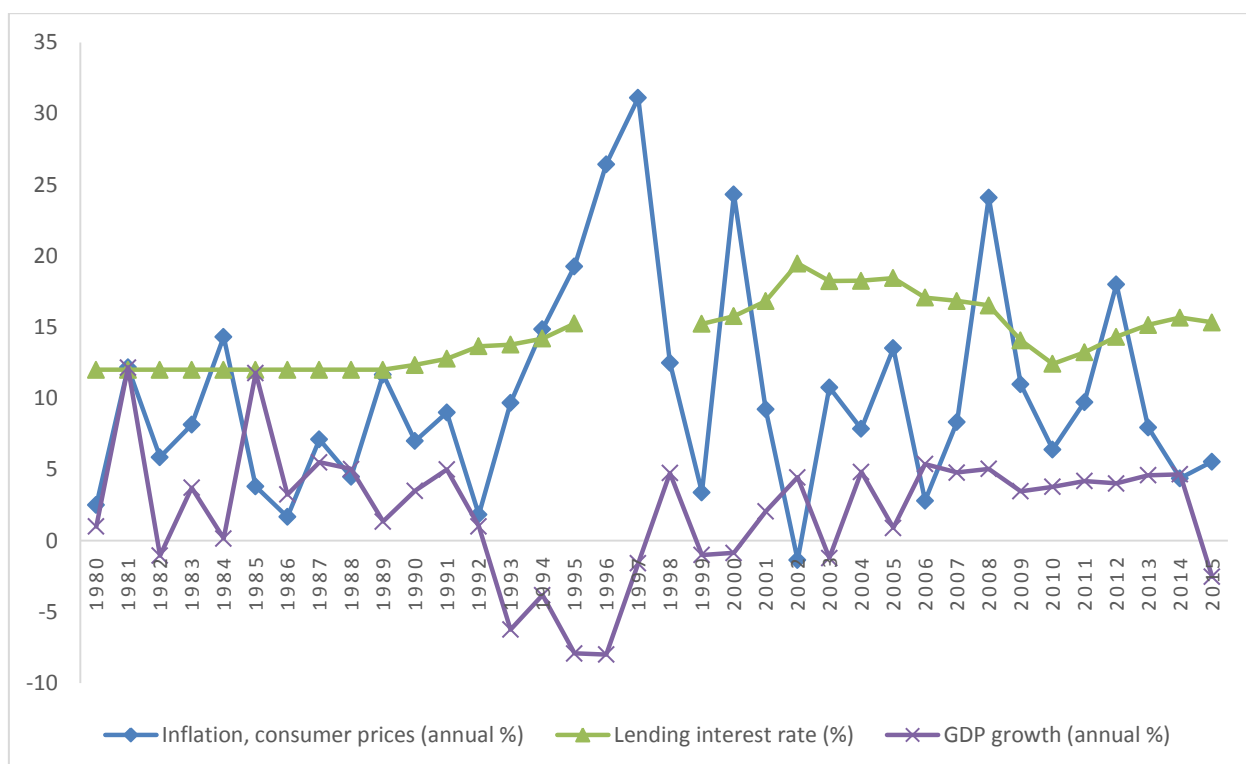
Source: World Development Indicators.

Political instability and mediocre economic performance have been associated with low institutional quality and poor governance. Over the last ten years or so, Burundi's overall CPIA score has remained below the African average even though it slightly increased from 3.1 in 2006 to 3.3 in 2015.[6] Moreover, relative to 2014, most of the components of the overall score worsened in 2015, capturing the difficulties that have beset the country since the early 2015. The indicators that recorded the strongest decline are fiscal policy and monetary policy (-0.5 point each) followed by property rights and rule-based governance, quality of budgetary and financial management, and efficiency of revenue mobilization with a drop of -0.3 point each. The indicator of business regulatory environment declined by -0.2 point as did Equity of public resource use. These statistics and the discussion above illustrate the complexity of the constraints facing firms operating in Burundi, particularly MSMEs. Could extending financing to MSMEs in Burundi help to enhance welfare --measured in terms of job creation, wages, firm profits, and productivity--in a context of economic decline? Before exploring this question, it is important to briefly discuss the types of entrepreneurs operating in Burundi.

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6 Data from African Development Bank Group at:
https://cpia.afdb.org/?page=results&subpage=profile&indicator_id=A-E_&country_id=BI&year=2015
    accessed on 29 March 2016.

1.2 Entrepreneurship and MSMEs

There is no universally accepted definition of entrepreneurship; different quantitative indicators have been used to represent this concept. For example, the literature on developed countries uses self-employment as a proxy for entrepreneurship. However, in Africa and other developing countries, the dearth of employment data makes this definition unattractive. Hence, the literature on developing countries has used the number of limited liability firms per 1,000 active persons registered in a country in one year as a proxy for entrepreneurship (Ayyagari et al., 2011).

Irrespective of the way entrepreneurship is measured, a number of economic and non-economic factors explain differences in entrepreneurship across countries and societies.[7] Economic factors include the level of income, economic performance, economic and financial crises, and labour market insurance. Non-economic factors include political history, the state of social protection in a country, regulation, and risk. Therefore, in order to understand the types of MSMEs populating the business sector of a developing country such as Burundi, it is important to reflect on the motivation behind an MSME entrepreneur's decision to start a business.

1.2.1 Two broad categories of entrepreneurs

As discussed in Nkurunziza (2016b) entrepreneurs in developed countries engage in business generally as a result of a deliberate choice motivated by the wish to pursue a perceived business opportunity. They might also be motivated by the need to be in control of their lives, achieve a feeling of self-esteem or have more independence. These are called "opportunity entrepreneurs." These entrepreneurs engage in activities that normally require collateral in their interactions with financial institutions. As a result, most of them are not in the lower end of the income distribution.

In developing countries, opportunity entrepreneurs coexist with another type of entrepreneurship referred to as "necessity entrepreneurship" (van Stel et al, 2007). This is a group of people at low levels of income who embrace entrepreneurship out of necessity or survival. They are more prevalent in economies where employment opportunities are limited and social safety nets weak or lacking. These entrepreneurs are also called "reluctant entrepreneurs" (Charman and Petersen, 2009) because they engage in business due to their inability to find paid employment. Entrepreneurship in Burundi where employment opportunities are very limited and social safety nets almost inexistent, falls in this category. Hence, in Burundi and other developing countries, entrepreneurship is characterized by the existence of a limited

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7 See Nkurunziza (2016b) for references.

number of 'opportunity' also referred to as 'real', 'innovative', 'high-impact', or 'ambitious' entrepreneurs alongside a large group of 'necessity', 'quasi', 'replicative' or 'routine' entrepreneurs (Wennekers et al, 2010: 173). Firms in the latter group are very small or small, could be registered or unregistered, and operate mostly the informal sector even though some are in the formal sector.

Developing countries with very limited formal employment opportunities are expected to have a larger number of "necessity entrepreneurs" relative to the size of the country's "opportunity entrepreneurs." This is in line with Maslow (1954) Hierarchy of Needs Theory according to which human motivation may be organized into a five-stage hierarchy of needs represented in the form of a pyramid. First are physiological needs such as hunger, thirst and sleep. Second are security and safety needs such as a stable and predictable environment. Third are social or acceptance needs such as the sense of belonging. Fourth are self-esteem needs such as the need to feel respected. Fifth is the need for self-actualization or the fulfillment of individual abilities.

Whereas necessity entrepreneurs' immediate objective is to address basic needs at the bottom of Maslow's Pyramid, opportunity entrepreneurs engage in business to satisfy needs at the fourth or fifth levels of the pyramid. As a result, countries with low income are expected to have a high level of entrepreneurship (necessity entrepreneurs) whereas countries with high income would have a high level of opportunity entrepreneurs. In between, entrepreneurship is relatively low as paid employment is preferred to necessity entrepreneurship. Figure 1.3 appears to support this thesis given the U-shaped relationship between entrepreneurship and income per capita in developing countries (Nkurunziza, 2016b).

Figure 1.3: Predicted empirical relationship between entrepreneurship and income per capita
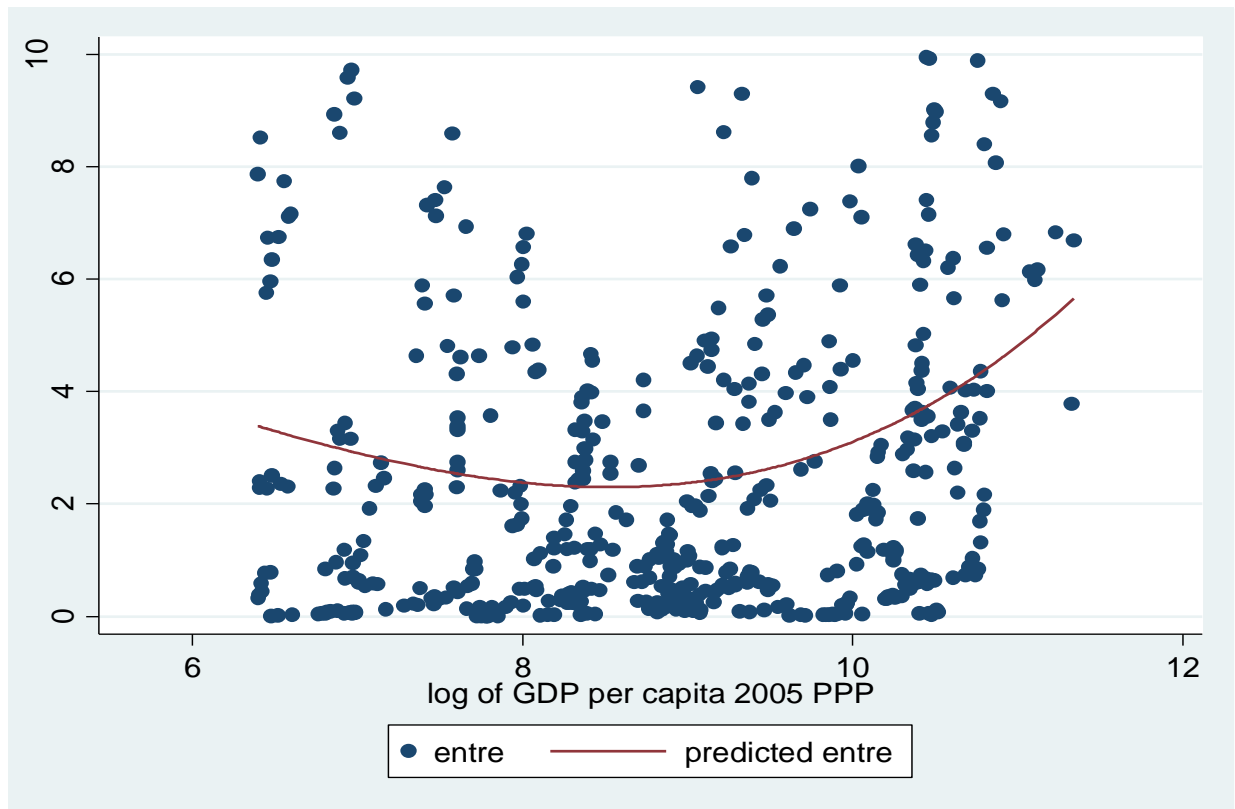
Source: Nkurunziza (2016b).

1.2.2 Trend in entrepreneurship and firm size in Burundi

Burundi was ranked by the World Bank in 2015 as the poorest country in the world. A priori, it is expected to be dominated by necessity entrepreneurs. Indeed, Burundi is not only poor but also characterized by a lack of social safety nets such as unemployment benefits and health insurance for the majority of the population. High unemployment particularly among the youth, and limited economic opportunities are key challenges facing the country. As a result, the predominance of micro and small-scale firms, that is firms with up to 19 permanent workers (Figure 1.4), in the population of registered firms, could be interpreted as an indication of the predominance of necessity entrepreneurs. This is a general feature in Africa where survey data show that a large number of SMEs are made of just one person and the majority employ less than 10 workers (Mead and Liedholm, 1998). Output per worker in these one-employee firms is lower than in larger firms, including those with two employees, suggesting that very small size is a severe handicap to firm performance.

The development of modern entrepreneurship in Burundi has gone through three major phases (see Table 1.2). The first phase was dominated by the

creation of large foreign firms owned by Europeans, particularly Belgians. The second phase occurred in the late 1970s up to the early 1980s when a large number of large government-owned enterprises were created by a new socialist-leaning government. The third phase was the post-structural adjustment programme period starting from the 1990s.

Table 1.2: Evolution of firm size in Burundi

Period	Median size	Observations
Before 1960	53.0	8
1960-1970	41.5	14
1970-1980	53.5	40
1980-1990	12.0	75
1990-2000	7.0	231
2000s	6.0	993

Source: Based on a census of formal firms carried out in 2010

Discussions in Nkurunziza and Ngaruko (2002) suggest that the first phase of modern entrepreneurship in Burundi corresponded with the colonial period particularly the aftermath of the Second World War. During this period, Belgium decided to establish import substitution manufacturing firms in Bujumbura, the capital of Burundi as the provision of European imported goods became difficult. At the time, the manufacturing sector was designed to serve Burundi, Rwanda and the Kivu region in Eastern Congo; this was a relatively large market. As a result, surviving firms created before 1960 display the largest size relative to firms created later --with the exception of state-firms created in the 1970s and early 1980s which have the same size--as they targeted a larger market extending beyond Burundi's borders.

As Congo became independent in 1960 and Rwanda in 1962, Burundi lost half of its Eastern Congolese export market and some of its Rwandan market resulting in large excess capacity of the firms created to serve the three countries. By 1963, capacity utilization in the manufacturing sector had been reduced to 25-50 per cent. Firms created before 1960 had an average production capacity of 240 kilowatts per firm relative to 98.5 kilowatts for firms created after 1960. Nevertheless, the demise of the economic union had a limited long-term impact on these large firms. They have proved to be resilient and are still among the biggest and most active in Burundi. By 1992, these firms' average capacity utilization was 87 per cent as compared to 66 per cent for firms created after 1960. The size of firms created in the 1960s was smaller than that of firms created before, probably as a result of the limited market they were created for. It should be noted that most of the firms created before the 1970s, based on the data summarized in Table 1.2, were private and foreign-owned.

The second phase of entrepreneurship was controlled by the state and came with the advent of the Second Republic in 1976. The new president and his government were socialist-leaning and decided to modernize the economy by creating a large number of relatively big state-owned firms. Between 1977 and 1982, about 100 such firms were created and operated in sectors such as retail, telecommunications, tourism, manufacturing, etc. Managed by civil servants with no business skills, these firms were used to generate and distribute rents among the ruling elite and their associates. Most of them never made a profit and were kept afloat by government subsidies. In 1995, for example, state firms as a group posted a net loss equivalent to 6 per cent of GDP or 14 per cent of government revenue, excluding grants (Nkurunziza and Ngaruko, 2002). Many of them collapsed in the 1990s and 2000s due to mismanagement.

The third phase of entrepreneurship in Burundi started in the 1980s with structural adjustment programmes that limited the role of the state in economic activity. As Table 1.2 shows, firm size during this period represented less than one-fourth of the size in the previous period dominated by state firms. The declining trend in firm size continued in the post-1980s period to the point where firm size in the 2000s represented only 11 per cent of the median size of state-owned firms or those created during the colonial period. The reason could be that firms created during this period were "low-budget firms" (Shorrocks, 1988) established by budget-constrained Burundian entrepreneurs as a result of two factors. First, the scaling down of state intervention in the economy following injunctions from the Bretton Woods institutions combined with the collapse of some state-owned enterprises left a gap that could only be filled by the private sector. However, and this is the second factor, high-budget foreign investors were not interested in investing in Burundi given the uncertainty and political instability that characterized the country as depicted in Table 1.1. As a result, firms created since the 1990s were very small as illustrated in Table 1.2. In fact, hardship associated with the structural adjustment programme in Burundi combined with political instability must have driven individuals to create micro enterprises out of necessity. This could explain the dominance of very small firms as Figure 1.4 illustrates.

Figure 1.4: Distribution of firm size in Burundi in 2007
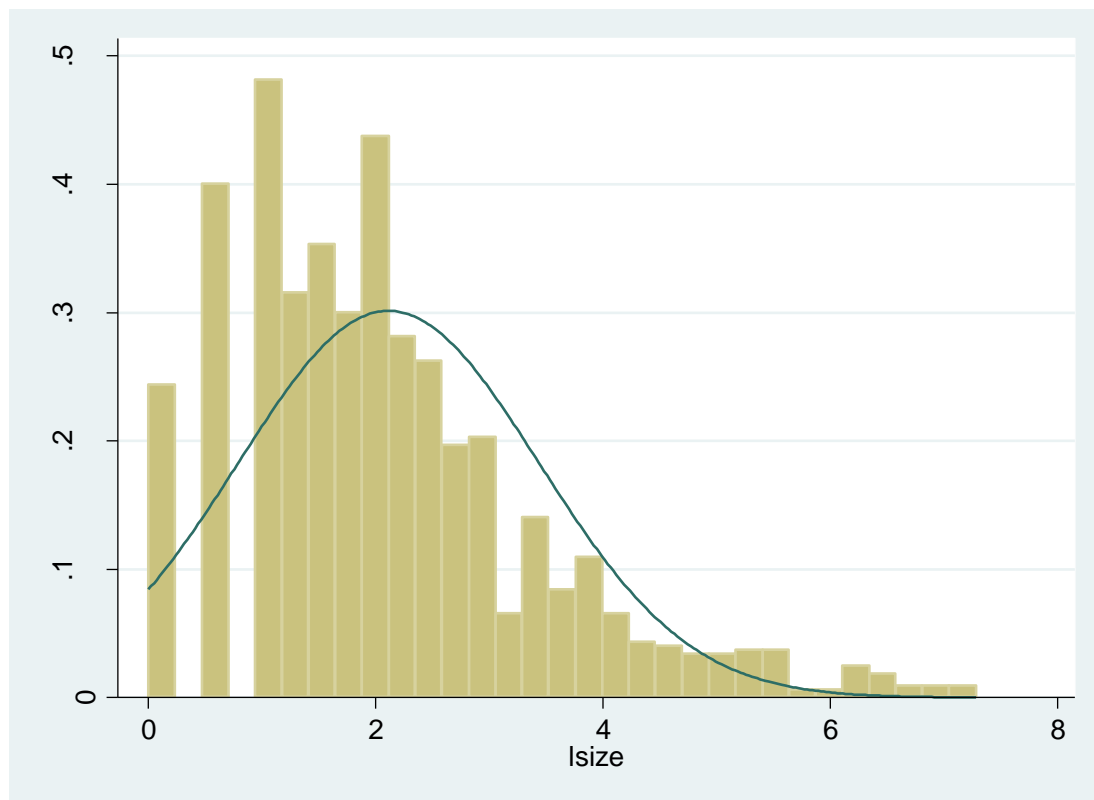
Source: Census of formal firms in Burundi, 2010.

Census data collected in 2010 on formal firms in Burundi shows that micro firms (those with less than 5 full time workers) represented 34 per cent of the population of formal firms in 2007 while small firms (those with 5 to 19 full time workers) represented 46 per cent of the total number of formal firms. Therefore, micro and small firms represented 80 per cent of all formal firms in Burundi in 2007. As survey-based data on manufacturing firms in Africa has shown, being small is associated with many constraints, including limited or lack of access to credit, training opportunities, and government support; low survival rates; low productivity; low wages; and low investment; among others (Bigsten et al, 2003; Nkurunziza, 2015; Bigsten and Soderbom, 2006).

Understanding the pattern of industrial organization in Burundi helps to tailor policy interventions to the needs of the business sector. For example, the two groups of entrepreneurs discussed above face different constraints. For example, if the objective of financial assistance is to help low-budget entrepreneurs to increase investment and grow their firms to the minimum efficient scale (Bain, 1956) in order to have a more efficient business sector, proper targeting of small but potentially resilient firms would be needed. Untargeted assistance would be wasteful if firms that could obtain resources elsewhere are included.

If the objective of financial assistance is to develop a specific sector (agriculture, manufacturing, or services, for example), it would be more efficient to target firms that have a higher probability of survival and growth in those sectors, whether or not they are owned by opportunity or necessity entrepreneurs. The targeting criteria could include the age of the firm, with old age signaling resilience, and the managerial capacity of the owner or the manager, to ensure that the aid provided to the firms would be well managed. Indeed, allocating aid to all firms indiscriminately may not be economically efficient as many of them may have limited ability to become more efficient and grow. This was the case in the Kenyan manufacturing sector in the 1990s and early 2000s where over time, smaller firms had a higher hazard rate than larger ones. The use of bank credit during this period of macroeconomic instability appeared to precipitate the failure of more fragile firms (Nkurunziza, 2015).

1.3 MSMEs access to financial resources in Burundi

Firm financing in Burundi is handicapped by a number of constraints. First is limited financial intermediation. The country has 9 commercial banks, one development bank, a housing bank and several microfinance institutions. Countrywide, there are 645 access points, with 172 served by commercial banks, 264 by microfinance institutions, 134 by the post office network and 75 ATMs. Thirty-three per cent are located in Bujumbura.[8] Only 7 per cent of the adult population has an account in a formal financial institution, a far cry from the 23 per cent African average. Among those who have accounts, only 2 per cent had at least one outstanding loan from a regulated financial institution. Among 9 countries surveyed in East and Southern Africa, Burundi has the lowest level of financial inclusion with 85.7 per cent of the population not using any financial product (BRB-- Banque de la République du Burundi, 2012). Among small formal firms, 90 per cent have accounts in formal financial institutions and 34 per cent have an outstanding loan or line of credit (Demirguç-Kunt and Klapper, 2013). While financial access statistics referring to individuals seem to be lower than the norm in Africa, small firms' access to financial services seem to be in line with practice in Africa.

Even though MSMEs in Burundi seem to have the same level of access to formal financial services as in other developing countries, the term structure of commercial banks' resources is too concentrated on short-term credit. As a result, MSMEs use bank loans for short-term needs such as working capital or line of credit rather than investment, as the latter requires medium and long-term loans. Indeed, data from Burundi's central bank (or BRB) shows that by March 2015, short-term credit represented 51 per cent of total credit, including credit

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8 Data from http://finclusionlab.org/country/Burundi/analytics?title=National-Overview accessed on 27 September 2015

to the government and other public institutions.[9] Long-term credit represented 13.6 per cent of total credit.

With respect to the sectoral distribution of credit, productive sectors such as agriculture and industry benefited from 0.5 and 7 per cent of total credit, respectively, while credit to trading represented 43 per cent of total credit. Burundian banks also allocate a substantial amount of their credit to the government. On average, credit to the government represents 38 per cent of total credit, which is high even by African standards, as credit to government in the rest of Africa represents, on average, 25 per cent of total credit. Combined with the inefficiency of government resource use in Burundi, the large amount of financial resources allocated to government by banks crowds out resources that could have been more efficiently used by private firms (Nkurunziza et al., 2016; Nkurunziza and Ngaruko, 2008).

The pattern of credit allocation illustrates a disconnection between the financial sector and the real economy. Agriculture is the mainstay of the economy. In 2014, it represented 39 per cent of GDP against 42 per cent of GDP for the services sector (World Bank, 2015). Agriculture is also where most jobs are created. According to estimates, the sector employed 70 per cent of the work force in 2009 (LO/FTF Council, 2014). The bias against agriculture in resource allocation by the private sector is a reflection of the neglect of the agricultural sector in many developing countries, despite its importance for food supply, poverty reduction and job creation. In Burundi as in many other African countries, investing in agriculture to raise productivity through measures that allow a better access to inputs and better land management could boost the country's potential for opportunity entrepreneurship (UNCTAD, 2015).

It is also relevant to note that the cost of credit is prohibitive. Short-term lending rates vary between 14.3 per cent for import to 17.4 per cent for working capital credit, the most dominant form of short-term credit. These high levels of credit imply that to be viable, an MSME must have a very high rate of profitability in order to pay back its loan and cover its other costs. The high rates of credit are associated with high default rates. By March 2015, the rate of default represented 14 per cent of total outstanding loans, with defaults on short-term loans representing about 20 per cent of total short-term loans. This finding echoes a conclusion from a study by Nkurunziza (2012) which, using data on the Kenyan manufacturing sector, found that the use of bank credit in unstable macroeconomic environments such as the one characterizing Burundi could lead to firm failure.

When Burundi opened its banking sector to foreign banks, a number of them established branches in the country. Regional banks such as Diamond Trust Bank, Kenya Commercial Bank, Ecobank, Bank of Africa Burundi, and

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9 http://www.brb.bi/fr/content/monnaie-et-cr%C3%A9dit

Tanzania's CRDB, have been operational since the mid-2000s. Foreign banks now represent about half of the total number of commercial banks operating in Burundi. This diversification brought a number of advantages. They include more competition which benefited customers, a different banking culture especially from banks with a British banking tradition system, the introduction of ATMs, and a wider international network, just to name a few. However, overall, the financial sector remains under-developed and access to affordable credit remains one of the major obstacles MSMEs managers face in their day to day running of their businesses.

2 | MSMEs financing: Brief overview of the literature

As discussed earlier, the size of a firm in developing countries is the major determinant of its efficiency, resilience, profitability, and access to inputs. Therefore, when analyzing MSMEs financing in Burundi it is relevant to determine the extent to which firms' access to financial resources could allow them to growth and benefit from the advantages of big size. There is some literature, theoretical and empirical, focusing on this issue.

2.1 Theoretical literature

The literature on firm finance in Africa classifies firms in different categories. There is a group of firms which do not need to use credit because they have enough internal funds to finance their activities and investments. Indeed, there appears to be a pecking order in the use of financial resources (Scholtens, 1999). The financial literature suggests that the cost of financing increases with asymmetric information. According to this theory, firms prefer using their own internal funds instead of bank credit. It is only when internal funds are not available that firms borrow. If these two sources cannot be used, firms may raise equity, where equity markets are developed. Another group is that of credit-constrained firms. This concept refers to firms that have a demand for credit but are unable to access it because their applications are denied as banks consider that the firms do not meet the conditions required to qualify for credit. A third group is made up of firms that would like to use credit but refrain from applying for it because they feel that the interest rate is too high relative to their expected returns on investment. The question is, therefore, whether MSMEs with access to external resources grow faster than those lacking this opportunity?

Analyses of firm growth have revolved around the testing of some major growth theories. [10] The first is the so-called "Gibrat's Law of Proportionate Effect (GLP)" due to Gibrat (1931). It posits that the rate of growth of a firm is independent of its size, implying that the rates of growth of firms are randomly distributed

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[10] For a summary of the theories of firm growth and more references, see Nkurunziza (2010) and Sleuwaegen and Goedhuys (1998).

relative to size. The second set of theories includes learning models which claim that once a firm is established, its growth is determined by the learning process it goes through, suggesting that young firms grow faster than old ones. Bain (1956) proposes another hypothesis that is particularly relevant for MSMEs. He states that there is a minimum efficient size under which a firm has high production costs and hence low productivity. This size corresponds with the lowest production point where the long-run total average cost is minimized.

In addition to these theories and hypotheses of firm growth, institutional economists and organizational ecology models have drawn the attention to the importance of institutions and the environment in which firms operate as important determinants of their growth and overall economic performance. Others such as Shorrocks (1988) posit that low-budget firms start too small due to budget constraints and may remain too small if they do not have opportunities to grow beyond the minimum efficient size threshold. Access to financial resources may help these small firms to grow.

2.2 Empirical Literature

Empirical literature on manufacturing firms in six African countries (Burundi, Cameroon, Côte d'Ivoire, Ghana, Kenya, and Zimbabwe) found that only a quarter of firms that demand for credit managed to secure a formal bank loan and that micro and small firms were less likely to be successful than large firms. Indeed, access to credit seems to increase monotonically with firm size (Bigsten et al, 2003). In Burundi, according to the same study, 51 percent of the firms in the sample had no demand for credit, 34 percent had their demand rejected while 15 percent of applications were successful. These statistics are generally close to the sample means, implying that comparatively, Burundi reflected the average picture. However, it is worth noting that Burundi had the second highest real interest rate in the sample (8 percent, the highest being Ghana's 10 percent) so some firms may have expressed that they did not need credit given this high interest rate. Burundi and Côte d'Ivoire happen to be the two countries with the highest proportion of firms (31 percent) that did not apply for loans because interest rates were too high.

In terms of the relationship between firm size and access to credit, the main reason given by micro firms in the six-country sample for not applying for loans was that they did not think they would get one (23 percent against 14 percent, 6 percent and 3 percent, respectively, for small, medium and large firms). This self-selection in the credit market is an indication that micro and small firms consider that the formal credit market is not structured in such a way that it can address their specific needs. In the six-country study, 64 percent of micro firms that demanded credit were rejected, which is much higher than the proportion of rejection for other size categories.

The limited access of micro and small firms to formal credit in Burundi could partly explain why firms have a relatively slow rate of growth. Indeed, the literature on the effect of credit on firm growth in Africa suggests that surviving

firms using credit seem to grow faster than those not using credit even when controlling for other determinants of firm growth (Nkurunziza, 2010; 2015). This has implications for firm efficiency given that the process of growth enables firms to accumulate knowledge through learning while allowing them to reach their most efficient scales (Sleuwaegen and Goedhuys, 1998; Nkurunziza, 2010). In this regard and in view of the objective of this paper, the analysis of the determinants of firm growth may be the best way of gauging the effect of firms' access to financial resources on welfare.

In Burundi, using data from the 1992 manufacturing firm survey and measuring size by the number of full time employees as is standard practice in the literature on developing countries, Sleuwaegen and Goedhuys (1998b) find that smaller firms grow faster than larger ones, contradicting Gibrat's Law. This result is generally found in similar empirical analyses. Firm growth is also determined by a number of institutional and environmental variables. Formal firms grow faster than informal ones; being located in Bujumbura, the capital city increases the rate of growth; State-owned firms create more jobs than private ones; and firms in some sectors grow faster than in others. The same data shows that larger firms are more efficient than smaller ones but there are four groups of institutional factors that reduce the productivity and growth rates of firms, including resource misallocation.

3 | Empirical Analysis

3.1   A quick overview of the datasets on Burundi

A notable difference between the 1992 dataset, the first known dataset on firms in Burundi collected for analytical purposes, and the latest ones (2010, and 2014) is that the 1992 dataset exclusively covered manufacturing firms whereas the latest ones include firms in different sectors, including the services sector. Indeed, the 1992 dataset was compiled in the context of the World Bank's RPED (Regional Programme on Enterprise Development) Project which was aimed at analyzing the manufacturing sector in a number of African countries. Moreover, the 1992 dataset comprises a number of big state-owned enterprises which, by the late 2000s, were no more in operation. The 2010 dataset is a census of all formal firms operating in Burundi, so they cover all sectors of activity. The dataset has very limited information. We could use only the size variable and, for a large group of these firms, the age variable could be computed. The 2014 dataset was collected by the World Bank in the context of the World Bank Firm Surveys project. It covers a relatively small sample but offers rich information.

A major limitation of all these datasets is that they are not panels as they covered different samples, so one cannot rely on them to analyze firm dynamics. Moreover, sampling in the different datasets does not seem to be consistent. For example, the dataset of 2014 seems to have left out very small firms, namely firms with less than five full time workers. Indeed, minimum sales for firms in the sample are high by Burundian standards at BIF 6247800, ruling out very small firms. Indeed, all firms in the sample are formally registered even

though 8 of them started operations a few years after their registration (this is a normal phenomenon as some firms register before they start putting in place their infrastructure which may take a few years). But a few firms, exactly 23, started their operations before they were registered. These were relatively small firms with a median size of 6 workers, suggesting that they might have started informally and formalized later on.

In order to glimpse into firm financing and its potential effect on welfare using proxies for welfare, we report results based on the different datasets, keeping in mind that they are not comparable across time.

Do firm managers identify access to finance as an important problem? Using the 2014 dataset, it is clear that managers consider this to be a serious constraint. Firm managers identify the following major constraints to their businesses: (i) high level of taxes (31 per cent of managers); (ii) electricity (22 per cent of managers) and, (iii) access to finance (13 per cent of managers). When asked specifically to rate the severity of accessing finance, 61 per cent of managers acknowledge that it is a moderate, major or very severe obstacle. This seems to confirm that access to finance is indeed a problem to the majority of firm managers even though it is one among many other problems. Political instability (62 per cent consider it moderate to very severe) and corruption (58 per cent consider it moderate to very severe) are other important constraints.

3.2 How do firms in Burundi finance their activities and investments?

In the specific case of Burundi, firms may have no choice but to use internal funds when they are credit rationed, as discussed above. An additional reason why firms in Burundi may prefer internal funds to any other source of financing is the fact that credit is very costly, not only in terms of high interest rates but also additional transaction costs associated with a credit application including different fees, long waiting times, as well as costly collateral requirements. Table 3.1 provides evidence of the preference for internal funds.

Table 3.1: Financing modalities in Burundi in 2014 (numbers are percentages)

Variable	None	At least 25%	At least 50%	Full amount
Working capital financed from internal funds (percentage of total firms)	1	17	72	26
Working capital borrowed from banks	41	20	42	1
Working capital purchased on credit	62	26	36	1
Working capital from non-banks	94	5	6	0
Fixed assets funded by internal funds	14	10	16	40
Fixed assets funded by bank credit	62	19	25	6
Fixed assets funded by suppliers	86	9	13	2
Fixed assets funded by non-banks	94	3	3	3
Fixed assets funded by owners	84	10	11	2

Source: World Bank firm survey, 2014

Seventy-two percent of all firms fund at least half of their working capital from internal funds and 26 percent fully rely on this source of funding. Moreover, 41 percent of firms do not use any borrowed money as working capital whereas 62 percent do not use any trade credit as working capital. With respect to investment in fixed assets, the reliance on internal funds is even stronger: forty percent of firms solely rely on this source of financing. Sixty-two percent do not use any bank credit to invest in fixed assets and 86 percent do not use supplier credit to finance investment in fixed assets. Also, only 16 percent of firms partly use their owners' resources to invest in fixed assets. This pattern of firm financing suggests that firms in Burundi have very limited funding options, which might constrain their capacity to invest and grow.

3.3 Econometric results

Econometric results based on the datasets discussed above are presented. We start with earnings functions for workers in the manufacturing sector based on the 1992 dataset. The monthly wage is used as a proxy of welfare; the objective is to explore its determinants.

Table 3.2: Workers earnings in Burundi's manufacturing sector (1992 data)[11]
Dependent variable is log of monthly wage in Burundi francs

Variables	Model with age		Model with tenure		Model with age and tenure	
	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test
Constant	4.833	12.71***	7.241	45.63***	5.061	11.66***
Age	0.761	6.99***	--	--	0.694	5.36***
School	0.841	16.59***	0.821	15.01***	0.823	15.58***
Tenure	--	--	0.164	4.06***	0.055	1.23
Size	0.114	3.96***	0.142	4.73***	0.109	3.72***
Firm age	-0.082	-2.59***	-0.151	-3.91***	-0.111	-2.92***
Formal	0.147	1.49	0.241	2.27**	0.178	1.72*
Bujumbura	0.151	1.91*	0.168	1.99**	0.167	2.06**
Metal	0.236	2.49**	0.198	1.92*	0.218	2.18**
Textiles	0.125	1.31	0.098	0.96	0.101	1.02
Food	0.153	1.74*	0.132	1.41	0.143	1.57
Foreigner	0.000	0.70	0.000	0.67	0.001	1.08
Public	0.003	2.91***	0.003	2.73***	0.003	2.98***
Recruit	0.014	0.18	-0.034	-0.43	0.025	0.33
Adjusted R-sq.		0.561		0.547		0.577
Observations		426		400		399
O.V. test	F (3, 410) = 16.76		F (3, 384) = 8.59		F (3,382) = 13.90	

***, **, * are significance at 1, 5 and 10 percent probability level, respectively. The variables are the log of wage in nominal Burundi francs (dependent variable) and, following the order in the table: log age of the worker (Age), log of the number of years of schooling (School), log of the number of years the worker has worked for the current firm (tenure), log of firm size, proxied by the number of permanent employees (size), log of the age of the firm (Firmage) and a number of dummies: a formal/informal sector dummy with value 1 when the sector is formal and zero otherwise; a location dummy

with value 1 for firms located in Bujumbura and zero otherwise; three sectoral dummies: metal, textiles and food if the firm is in these sectors (wood work is the omitted category of firms), and two ownership dummies (foreigner and Public) which represent the majority ownership of the firm (Burundi private ownership is the omitted category). We have also added a dummy variable (Recruit) to test whether the way a worker is recruited has a significant impact on his wage. It takes value 1 if he was recruited through job advertisement or through a recruitment agency and zero otherwise.

The results should be interpreted with caution given that due to data limitations, the dependent variable, wages, excludes benefits such as allowances for housing, healthcare, transportation, food, etc. which might be important for workers' welfare. Moreover, the sample is dominated by large formal firms located in Bujumbura where workers are more educated and earn relatively more than workers elsewhere. Nevertheless, despite these limitations, the results in Table 3.2 provide interesting insights into the determinants of workers' welfare. The main finding is that the determinants of workers' welfare in Burundi are more or less the same as those determining welfare elsewhere. At the individual worker's level, education level and tenure are key determinants of how much he earns. At the firm level, size, location in Bujumbura, formal status and public ownership seem to be associated with high wages. Older firms seem to pay less, but this does not necessarily mean that workers in older firms have a lower level of welfare. This result might simply reflect the fact that well-established firms offer more non-wage benefits to their employees in order to minimize taxation which is usually wage-based.[12]

The systematically positive effect of firm size on welfare suggests that policies aimed at increasing welfare should help small firms to grow, become more efficient in order to offer higher pay to their workers. Moreover, based on the dichotomy between firms located in Bujumbura and elsewhere, policies aimed at increasing workers' welfare should target firms operating outside the capital city as these pay relatively lower wages. Although public firms seem to pay higher wages than private firms, the coefficient is relatively small so the difference in pay is not important. Moreover, many public firms in the 1992 sample have collapsed due to mismanagement so they are no more reflected in more recent datasets.

If welfare is considered in terms of employment size, a simple model of firm size, measured as the number of full-time workers and using the 2010 census shows that firm age and its location are important determinants of welfare, confirming the results in Table 3.3.

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12 A discussion with a young graduate working for a well-established commercial bank in Bujumbura revealed that while his monthly salary is about 300000 Burundi francs, his non-wage benefits (transport, housing, etc.) amount to about 550000 Burundi francs, which makes his total earnings almost three times his salary.

Table 3.3: Simple model of firm size (2010 dataset)

The dependent variable is the log of firm size

Variables	Linear model		Non-linear model	
	Coefficient	t-test	Coefficient	t-test
Constant	1.16	9.36***	1.79	12.38***
Bujumbura dummy	-0.29	-2.83***	-0.27	-2.75***
Log of Age	0.54	10.64***	-0.28	-1.67*
Log of Age squared			0.21	4.27***
Adjusted R-sq.		0.13		0.15
Observations		863		863
O.V. test	F (3, 857) = 8.48***		F (3, 856) = 1.95	

***, **, * are significance at 1, 5 and 10 percent probability level, respectively, based on White (1980) heteroscedasticity-consistent standard errors. The variables are the log of firm size, measured as the number of full-time workers (dependent variable) and, following the order in the table: location dummy which takes value 1 if a firm is located in Bujumbura and zero otherwise; log of firm age, which measures the number of years since the creation of the firm; and the square of the log of firm age.

It should be noted that more than 70 per cent of firms in the sample are located in Bujumbura, reflecting the concentration of business activity in the capital city. The simple model of firm size depicted in Table 5 highlights the fact that a firm's location is an important determinant of its size. The negative sign associated with firms located in Bujumbura might reflect the concentration of small firms in Bujumbura where, despite their small size, they are able to survive due to the benefits derived from agglomeration effects associated with the high density of business activity in the capital city.[13]

The effect of age on a firm's size provides an interesting insight. In the linear model, age seems to positively affect size, suggesting that older firms are larger. This could have two meanings. Firsts, as argued earlier, firms created before independence and those created in the 1970s and 1980s were much larger than firms created in the following decades. The second explanation could be that old firms in Burundi have had a chance to prosper and grow over time, confirming Jovanovic's learning hypothesis discussed earlier. But the linear model suffers from an omitted variable bias so we base our discussion on the non-linear model where the test for omitted variable bias does not reject the null of absence of an omitted variable; the addition of the squared term of the age variable improves the model even though the age variable, in levels, is significant only at 10 per cent probability level. Therefore, there seems to be a convex relationship between size and age. The negative relationship between size and age for very young firms is weak but the positive relationship for older firms is stronger. Even considering that the relationship is convex, the turning point is at about 2 years of age, implying that the positive relationship between age and size dominates most of the age-size distribution. This positive relationship between size and age conforms with Jovanovic's learning model whereby firms increase in size as they discover their higher productivity levels over time.

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13 On the benefits of agglomeration economies, see Glaeser (2010).

Table 3.4: Determinants of workers' welfare proxied by total labour costs (2014 dataset)

Dependent variable is log of total labour costs

Variables	Coefficient	t-test
Constant	6.72	7.42***
Ln of size (number of permanent workers)	0.83	8.94***
Ln of age	-0.18	-2.12**
Ln of sales	0.41	6.85***
Ln of proportion of workers with high school	0.15	2.55***
Dummy Bujumbura	0.38	2.12**
Dummy retail sector	-0.35	-2.25**
Dummy manufacturing sector	-0.22	-1.4
Dummy having an overdraft	0.27	1.52
Dummy having a loan	-0.25	-1.92**
Dummy female manager	0.47	2.49***
Dummy female among the owners	-0.3	-2.00**
Number of observations		146
R-squared		0.82
Omitted variable bias test		$F_{(3, 131)} = 0.28$

***, **, * are significance at 1, 5 and 10 percent probability level, respectively, based on White (1980) heteroscedasticity-consistent standard errors.

The dependent variable of Table 3.4 is the log of a firm's total labour costs. According to the dataset used, these include wages, salaries, bonuses, etc. Therefore, this variable is a relatively good measure of welfare as it captures most of the financial benefits workers derive from working for their firms. The analysis of the results suggests some ideas for intervention if increasing workers' welfare is the policy objective. First, as known in the literature, large firms offer better benefits to their workers. In this regard, helping small firms to grow could be the right way of ensuring better welfare for their current and future workers. Second, workers in old firms seem to enjoy lower welfare than their counterparts in younger firms. This could reflect the fact that relative to well-established firms, young firms need to provide more incentives in order to attract high-quality workers. Third, the highly significant and positive effect of sales on workers' welfare suggests that helping firms to prosper is an indirect way of improving their workers' welfare. The finding seems to suggest that firms share their success with workers. Fourth, the fact that firms in Bujumbura offer better benefits than firms in Ngozi and Gitega, the other cities surveyed, could suggest that more efforts in terms of increasing welfare should be deployed outside Bujumbura.

Fifth, firms having loans seem to offer less benefits maybe as a result of the fact that they must allocate an important amount of their resources to the repayment of the loans. This, in terms of policy, suggests that assistance to firms to improve welfare should not be limited to providing loans. Giving loans to such firms as a way of inducing them to increase welfare could be counter-

productive. Sixth, firms headed by female managers seem to offer higher benefits than firms headed by male managers. This is another finding that could help in determining which firms to target. Finally, we do not have a straightforward explanation of the negative relationship between workers' welfare and having female members among the ownership of a firm. This needs to be further explored.

In order to explore further the positive relationship between a firm's current size and its workers' welfare, we determine whether current size is a reflection of initial size when a firm was created or whether it is the result of firm growth. If it is the former, the policy implication would be to help firms to start with a relatively large size. If growth is the reason why the large firms in the sample became large, the policy would be to help firms to grow, including the smallest among them in order to improve workers' welfare. In order to discriminate between these two hypotheses, a model of firm growth is estimated using initial size and other controls as explanatory variables. Given that firm size is defined as the number of permanent full time workers, the inclusion of a credit variable in the model of firm size can be interpreted as another way of measuring the effect of credit on welfare. Indeed, a large firm or a fast-growing firm implies higher job creation.

Table 3.5: Models of welfare proxied by employment growth relative to initial size and sales three years earlier (2014 dataset)
Dependent variables are average annual growth rates of firm size and sales

Variables	Initial size		Size 3 years ago		Sales 3 years ago	
	Coefficient	t-test	Coefficient	t-test	Coefficient	t-test
Constant	-0.36	-3.30***	-0.55	-3.44***	0.2	0.75
Ln initial (size or sales)	-0.07	-6.02***	-0.10	-4.48***	-0.10	-4.18***
Ln age	-0.03	-1.58	-0.02	-1.00	-0.02	-0.93
Ln labour costs	0.04	5.00***	0.05	4.23***	0.10	4.71***
Shares held by female in %	0.00	2.19**	0.00	1.34	0.00	1.74*
Dummy female manager	-0.04	-2.68***	-0.07	-1.97**	-0.14	-2.00**
Dummy Bujumbura	0.01	0.63	-0.01	-0.34	0.08	1.73*
Dummy retail	0.01	0.79	0.04	1.98**	0.02	0.35
Dummy manufacturing	0.03	2.03**	0.05	2.21**	0.02	0.39
Dummy loan use	0.00	0.04	0.04	1.88*	0.02	0.58
Dummy overdraft use	0.03	1.6	-0.00	-0.06	-0.02	-0.46
Number of observations		149		144		135
R-squared		0.33		0.35		0.32
Omitted variable bias test	$F_{(3, 135)} = 4.21$		$F_{(3, 130)} = 9.36$		$F_{(3, 121)} = 3.54$	

***, **, * are significance at 1, 5 and 10 percent probability level, respectively, based on White (1980) heteroscedasticity-consistent standard errors.

Three models of firm growth are presented in Table 3.5. The dependent variable in the first model is the average annual rate of growth of a firm from the year it started operations. This could be considered as a long-term growth model. The second model analyses firm growth over the three-year period preceding the year when the data was collected. Both models use the number of full time

permanent workers as the measure of size. The third model considers firm growth based on the annual average change in sales over the three-year period before the data was collected.[14]

In all three models, the rate of firm growth is negatively related to initial size, suggesting that small firms grow faster than large ones. This contradicts Gibrat's law of proportionate effect discussed earlier. The policy implication of this finding is that small firms have the capacity to grow if the factors determining growth are favourable.[15] The fact that the variable "labour costs" is positively related to firm growth suggests that firms that are able to offer better benefits grow faster than those offering less benefits. This could be a channel through which welfare could be improved in existing and new firms. Firms where female owners have more shares seem to hire more than other firms. This offers another channel that could be used for targeting. Firms headed by female managers seem to hire less than firms headed by male managers. There is some weak evidence that firms using loans hire more than firms not using loans (second model) suggesting once more that providing loans could be one among other ways of inducing firms to increase welfare when it is measured in terms of job creation.

4 | Conclusion

The dominance of Burundi's business sector by MSMEs makes its flagging private sector particularly vulnerable to the country's political and economic instability. Since the 1990s, many firms have collapsed while surviving ones have operated in a challenging environment fighting for survival. Considering that most firms in Burundi are most probably the result of survival entrepreneurship, whether or not assistance to firms could increase welfare and through which channels becomes an important policy question. This paper attempted to explore the question whether financing MSMEs could have positive welfare effects.

It is impossible to forcefully answer this question empirically with the type of data available in Burundi. Policy questions such as this one are best answered using panel data that compare the outcome of a policy intervention relative to a baseline. For example, using a Markovian approach, one could analyze the change in welfare conditioning on policy intervention.[16] This analysis requires a relatively long panel that is not available for Burundi. Only cross-sectional information covering relatively small samples and sometimes with a limited number of variables is available. Therefore, keeping this important data caveat in mind, this paper attempted to identify the correlates of welfare at the firm level using proxies such as wages and other labour costs, job creation defined

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14 The two sales variables used to compute firm growth should be deflated but a well-known problem with this type of variable is that it is difficult, for economies such as that of Burundi, to have the right deflators, given that firms operate in different sectors which require different deflators.

15 Variable age is not significant in any model given that it is already taken into account in the computation of the rate of growth.

16 This analysis could use a framework similar to that of Nkurunziza (2015) where firm growth is studied conditioning on the use of credit.

as firm growth, and firm sales. Through these correlates, one has an idea of what could be the variables through which intervention could be made to increase welfare.

According to the results of the econometric analysis based on the 1992 dataset, the determinants of workers' welfare in Burundi, proxied by wages, seem to be the same as those determining welfare elsewhere. High education, long tenure, large size of the firm one works for, the location in Bujumbura, the formal status of the firm and its public ownership seem to be associated with high wages. The results based on relatively new data confirm the positive effect of large size on welfare, irrespective of the way it is measured. A simple model of firm size conditioning on age highlights the importance of this variable as well as location, suggesting that older firms tend to be larger (or employ more people). This result is indirectly confirmed by the finding in the models of firm growth where it appears that that smaller firms grow faster, considering that most of the firms start very small due to reasons discussed earlier. It is important to bear in mind that the analysis of firm growth is solely based on surviving firms, which could introduce a selection bias given that survival might not be randomly distributed among firms (Nkurunziza, 2010).

A firm that is servicing a loan tends to offer less benefits to its employees. This finding echoes a result based on manufacturing data on Kenya where using a loan during a long period of economic turmoil, similar to what Burundian firms have been going through since the early 1990s, seemed to precipitate the failure of firms rather than saving them (Nkurunziza, 2012). As female shareholding increases, firms appear to offer less benefits but firms headed by female managers seem to offer more benefits if measured in terms of total labour costs. Moreover, whereas female managers tend to hire less than their male counterparts, firms where female shareholders hold a high proportion of shares appear to hire more.

The results discussed above suggest a number of policies. First, the difference in welfare between firms located in Bujumbura where most of the activity takes place and those located elsewhere in the country is a stark reflection of the so-called "urban bias" characterizing many developing societies. In order to break this bias, policymakers and their partners should put in place incentives that induce investment outside Bujumbura in order to benefit those who are excluded from current policies. Second, the fact that access to loans does not lead to better welfare in many models is an indication that assistance should not only take the form of credit. Actions that improve access to higher welfare such as training could be channels through which welfare is increased. Third, the systematic association between large size and high welfare, combined with the finding that small firms grow faster than large ones, suggests that policy intervention should encourage small firms to grow in size and hence increase their workers' welfare. Finally, there seems to be a gender dimension to welfare that is worth investigating in some detail. For example, if the result that firms with high female shareholding hire more, policy intervention could consider implementing measures that encourage female entrepreneurship in order to encourage job creation.

Ultimately, as discussed above, a more credible analysis of the effect of firm financing on welfare requires the collection of panel data on firms covering at least two periods of time. The census of firms carried out in 2010 could provide a useful sampling base given that it comprises firms from different sectors across the country. A simple analysis of firm survival based on the list of firms in this dataset would provide valuable baseline information on the rates of survival across sectors and regions, which in turn would inform on what types of firms to target and in what regions, for welfare analysis.

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