Surviving the Global Financial Crisis:
Evidence from Exporting Firms in Sub Saharan Africa

by

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Abstract

Since late 2008, countries around the world have been affected by the global economic slowdown. Though without doubt, there are particular countries that are very adversely affected, but there are also countries that may be less affected, may avoid recession, and may recover sooner than expected. In a globalised economy, the crisis has serious implications for low income countries, in particular, those which are highly dependent on trade, foreign investment, and remittances to meet economic growth and social needs. The main mechanism through which the crisis has affected Africa is a contraction in global trade and a related collapse in primary commodity exports, on which many countries are dependent. This paper argues that African firms, particularly exporters, have been highly affected as they are dangerously more dependent on foreign finance in countries where they export. Motivated by the present dramatic fall in international trade which has hit very strongly Sub-Saharan African countries, we analyze the impact of the financial crisis on exporting firms in the region. The objective of the paper is to assess the impact of the global financial crisis on four Sub Saharan African economies namely Burkina Faso, Congo Dem Rep, Malawi and Niger using firm level data from the World Bank Enterprise Survey. Our analysis compares firm performance across 1,600 firms in these four nations in 2005 and 2009. Our study reveals that there has been a fall in total sales as well as a decline in direct exports of their commodities. The drop in demand worldwide may explain the fall in exports of low income economies. Further, we may argue that the largest disruption effect comes when the destination country which is hit by a financial crisis is industrialized. In addition, the drop in exports has been accompanied by a drop in employment, which affects both permanent and temporary employees. Lastly our findings reveal that during the crisis period, firms increased the use of internal funds to finance working capital and purchase fixed assets.

Keywords: Financial Crisis, Exports, Labour and Developing Countries
JEL classification: G01, F3, 016, 055

1. Introduction

Since 2000, the African region has had an average growth rate of real output above 5 per cent and inflation has declined to single digit. There have been significant improvements in governance and a reduction in armed conflicts, making the region more attractive for private capital flows. The world economic crisis brought a period of relatively high economic growth in Africa to a sudden end. The crisis has been a serious setback for Africa in a time when the continent was making progress in economic performance and management. Given the heterogeneity of African countries, the crisis affected some countries much more than others. Average economic growth was slashed from about 6% in 2006-2008 to 2.5% in 2009 with per capita GDP growth coming to a near standstill. The global crisis had its strongest effect on Southern Africa, where growth dropped drastically by almost 8 per cent to negative growth of around 1%. East Africa and North Africa proved to be the most resilient regions.

Though, the initial concern for small state and also less developed economies was that the crisis would be transmitted from the advanced countries through their financial sectors; the strongest transmission channels have been through the real sectors. In most small and vulnerable developing countries, the crisis has since the second quarter of 2009 reversed global GDP growth, resulted in sharp reductions in exports, fall in worker's remittances and access to finance and has triggered declining fiscal revenues. It has also raised demands for social service provision and the maintenance of social safety nets and has substantially increased levels of unemployment. In Africa, in particular, the global crisis was mainly felt through the collapse of commodity prices and the fall of export volumes. In 2009, Africa's export volumes declined by 2.5% and import volumes by about 8% (African Economic Outlook, 2010). Due to the fall in commodity prices, Africa's terms of trade deteriorated. Export values declined sharply, and more than import values, leading to a deterioration of trade and current account balances. The global crisis also hit through the decline of worker remittances and of foreign direct investment.

With the growing number of financial crises over the years, there has been extensive work on the determinants of crises and also on the prediction of future crises. Others like Gupta et al. (2007), Noy and Neuberger (2002), Dooley (2000) and Hong and Tornell (2005) have assessed the crises' impacts in terms of output variation and the necessary conditions for minimum output costs in the event of a crisis. Very little work has been done on the impact of the financial crises on international trade, the latter being usually considered as obvious or traditional. However, among the few studies, the findings reveal an unclear impact of the crises on international trade. For instance, Ma and Cheung (2003) test the impact of financial crises, both currency and banking crises, on international trade. Their results are not clear-cut as the crises do not seem to have any short term effect and the long term impact depends on the period under study.

Motivated by the present dramatic fall in international trade which has hit very strongly poor Sub Saharan African countries; this paper argues that African firms, particularly exporters, have been highly affected as they are more dependent on foreign finance in countries where they export. The objective of the study is thus to examine the effect of the recent global financial crisis on the performance of exporting firms in low-income countries in Africa. Using firm level data from the World Bank Enterprise Survey for Burkina Faso, Democratic Republic Congo (DRC), Malawi and Niger between 2005 and 2009, we investigate the performance of 1,600 firms. Our study reveals that there has been a decline in direct exports of manufacturing goods across all four countries in 2009. Among other factors, the drop in demand worldwide may explain this fall in exports. Further, the drop in exports has been accompanied by a drop in employment, which involves both permanent and temporary employees in all four nations. Lastly our findings reveal that exporting firms increased the use of internal funds to finance working capital and to purchase of fixed assets in 2009.

The paper is structured as follows. Section 2 reviews the literature on the effects of the financial crisis on trade. Section 3 reviews the characteristics of the four low income countries namely Burkina Faso, DRC, Malawi and Niger and their macroeconomic position in terms of real

GDP growth rate and external trade. Section 4 analyses the data used from the World Bank Enterprise survey and sets out the methodology. Section 5 presents the findings and we finally conclude in section 6.

2. Literature Survey

The current financial crisis affects developing countries in various ways. First, the biggest fear was that of financial contagion where financial institutions in developing countries are negatively affected. Banks may be directly affected if they hold assets contaminated by subprime mortgages. However, in many developing countries, banks had limited interrelationships with international banks (Naudé, 2009). Foreign owned banks are not significant players in most countries in Africa. There is, however, a more serious indirect threat through declines in stock market prices and housing prices. These reduce the capital of banks and large firms and banks are likely to reduce lending in order to shore up their capital. A fall in bank lending leads to reduced investment, lower growth, and an increase in unemployment. Lower economic growth implies lower government revenue and less means to fight poverty. In a worst-case scenario banks may even face solvency problems and may require governments to recapitalize them.

Second, declining global output has impacted on the level of workers' remittances from abroad, on which households in many poor countries are reliant. Remittances in recent years have been one of the most important financial flows to developing countries, exceeding US$240 billion in 2007, more than twice the volume of aid flows (Ratha et al., 2007). With the global economic crisis, remittances have sharply deteriorated in many countries, reducing household income and aggregate foreign exchange inflows. For unskilled workers, in particular, declining remittances have been accompanied by rising unemployment, when workers abroad have been retrenched and have returned home to seek new employment. Countries with migrants predominantly in the US or EU (for example Mexico and the Caribbean) and small states such as Lesotho, Haiti and Nepal (where remittances contribute in excess of 10% to GNP) have been

severely impacted. Third, financial inflows in terms of foreign aid as well as portfolio and foreign direct investment from the rest of the world help developing economies to accelerate trade and economic development. Cali, Massa and Te Velde (2008) estimate the decline in financial resources to developing countries to be around US$300 billion. The reduced access to finance across developing countries, results from the fact that the major bilateral contributors are themselves under substantial domestic fiscal pressure. Foreign direct investments, in particular, equity capital, have declined significantly as foreign investors sought to reduce their risk exposures. The collective impact of declining commercial bank lending and uncertain access to concessional financial resources have created a substantial sudden-stop in access to external finance to developing countries. With increasing demands for fiscal spending to address the economic and social consequences of the crisis, a large and persistent financing gap has emerged. The financing gap for developing countries has been estimated in the range of US$270 and US$700 billion (World Bank, 2009).

Most important, is the impact of the crisis on trade. The effects come essentially through a combination of a fall in commodity prices, in demand for African goods from advanced economies. Over the past seven years, prices of commodities like copper, nickel, platinum and petroleum, have risen to record highs, and contributed significantly to good growth in Africa. However, since September 2008 commodity prices have been declining. The price of oil fell by more than 70% in the second half of 2008. Other prices followed suit. The dilemma facing many commodity exporting countries is seen in the case of South Africa, a major exporter of the platinum group of metals. However, it is not just commodity-dependent countries that are adversely affected as with the recession developed countries also reduce the demand for their exports. A significant proportion of US and EU imports are from developing countries. Declining exports and falling export prices have constituted a devastating double blow to the small and poor economies. The combined impact has been severe, with export revenues contracting sharply, employment in export sectors declining substantially and government's fiscal revenues reducing significantly.

Financial development is important for international trade (Beck (2002, 2003), Becker and Greenberg (2004), Manova (2005)). A banking crisis diminishes the amount of liquidity available in the economy, decreases the level of financial development and is likely to have an important effect on international trade. After a banking crisis, domestic borrowing can be more difficult to contract, and the firms can be forced to use their own liquidity or to borrow in the foreign markets. If the firm belongs to an externally dependent industry, the impact of the crisis will be magnified. If the firm faces an important fixed cost to enter the export market, the need for financing it through borrowing will be larger, and the negative impact of the banking crisis is likely to be larger (Berman, 2006). If imports operations require an important amount of financing, the banking crisis, by making more difficult for firms to borrow, may have a negative impact on imports. Nevertheless the impact is larger for exports since banking crises prevent some firms to enter the export market, or force them to exit from it, which is not the case for importing firms. Moreover, as pointed out by Aghion and Howitt (2005), a Schumpeterian view of business cycles and growth emphasizes the fact that a recession has cleansing properties, correcting organizational inefficiencies and encouraging the firms to reorganize and innovate. In that context, a banking crisis may have a mitigated effect. It often leads to important recessions which could in turn induce the previously mentioned cleansing effects. On the other hand, the tightening of credit constraints that follows the crisis may prevent firms from borrowing in order to do their reallocating operations.

The reaction of trade to financial crises may be affected by various elements. Table 1 below reports the different channels through which trade may be affected by financial crises and the financial or sectoral elements that may magnify or reduce their impact. Both imports and exports can increase after a banking crisis because of the improvement of the financial system efficiency. To test the different channels, it seems useful to take into account firms' borrowing behavior and the sectoral specialization - because of differences in the levels of fixed costs, external dependence and elasticities of substitution which can modify the effect of crises. All these elements interact with each other: the amount of fixed cost influences the impact of crises in more externally dependent industries; the level of foreign currency borrowing and credit

constraints have a different impact on exports' reaction of industries using a large amount of external finance.

Table 1: Financial Crisis and Trade: Transmission Channels

	Impact on Exports	Impact on Imports
Financing Capacity	-	-
Efficiency	+	+
Total Effect	**Ambiguous**	**Ambiguous**
Magnification		
Fixed Costs	-	
External Financial Dependence	-	

Source: Berman (2006)

Finally, in the long run, a banking crisis, by forcing the less efficient banks to exit the market, may increase the mean level of banking system efficiency. Indeed, if inefficiency has played a role in the occurrence of the banking crisis, an efficiency recovery should be observed in the post-crisis period. As pointed out by Bertrand, Schoar and Thesmar (2004), a larger banking system's efficiency may lead to an improvement in firms' efficiency and productivity; this can generate a higher share of exporting firms and an increase of total exports, which should be larger when the country is specialized in more financially dependent industries. Imports can increase too, because of the diminution of credit constraints generated by the improvement of banking system efficiency. While this improvement has not been observed for some recent crises in Turkey and Indonesia (Reynaud and Rokhim, 2004), it is however necessary to consider it in the long run.

3. Country Characteristic and Macroeconomic Performance

Burkina Faso

Burkina Faso's economy is dominated by the primary and services sectors. It is highly vulnerable to external shocks and adverse weather conditions, which increase the country's risk

of debt overload. The economy is insufficiently diversified and heavily dependent on gold and cotton exports. With the effects of the energy, cotton, food and financial crises, growth rate slowed down from 5.2% in 2008 to 3% in 2009. The growth contribution of investment turned negative in 2009 (-1.5 % of GDP), as private investment contracted (-1.8 %). The primary sector accounts for no less than 34.5% of GDP. It is followed by trade, transport and communications (17.1%). Manufacturing is not highly developed (12% of GDP), while the mining sector, although it has grown very strongly in the last two years, still accounts for only a small share of GDP (2.8%). The cotton ginning sector contracted by 25%, as a result of the crisis in the cotton sector, thus, gold became Burkina Faso's leading export product. Gold accounted for 41% of total exports in 2009, and its share is projected to rise to 45% in 2010 and 55% in 2011. The easing of political tension in neighbouring Côte d'Ivoire helped to boost the growth of the tertiary sector, which accelerated from 1.5% in 2008 to 2.5% in 2009. Trade and transport expanded respectively by 6.1% and 12.7% during the year. The financial sector, however, suffered from the effects of the global crisis. Growth is projected to pick up again in 2010 and 2011, with rates of 4.4% and 5.2% respectively (African Economic Outlook, 2010).

Niger

Niger's economic growth in 2009 fell by 0.9%, after rising by 9.5% in 2008. The primary sector, essentially informal, declined by 6.9% in 2009, after growing by 16.2% in 2008. The reason for the fall in agricultural production was a 26.5% drop in winter crops, in particular cereals and cowpeas accounting for 47.5% of total production. The primary sector constitutes the backbone of Niger's economy, contributing 43.3% of GDP in 2009, down from 49.6% in 2008. The growth rate of the livestock sector is estimated at 4.4% in 2009, against 4.2% in 2008. Despite its agricultural nature, Niger imports more than 60% of its food needs, the vital staple of rice in particular. The secondary sector, dominated by extractive industries, energy and construction, expanded by an estimated 4.6% in 2009, compared to 3.7% in 2008. It is, nevertheless, the weak link of Niger's economy, representing only 11% of GDP in 2009. Energy production continued to expand in 2009, as did the construction sector. The tertiary sector is estimated to make up 38.5% of GDP, recording a real growth rate of 4.6% in 2009, against 3.7%

in 2008. The situation can be attributed to telephony – reaching 5.2% annual growth – and public services, at 6.5%. Growth in investment, at 2.7%, moderated in 2009, is the result of the weakness of private investment: up 1.3% in 2009, as against 22.5% in 2008.

Malawi

Malawi has weathered the impact of the global economic crisis relatively well. Estimated at 7%, growth in 2009 remained robust although slower than the 9.8% achieved in 2008. Largely dependent on the agriculture sector, the services sector is increasingly becoming important, accounting for over 40% share of GDP. Strong maize and tobacco harvests, and the start of the uranium production helped anchor the economy's resilience. Malawi's financial sector is weakly integrated into the global financial system making the economy relatively resilient to the global financial crisis. The impact on the real sector, however, appears to have been relatively strong. Tobacco export earnings fell by 2.8% in 2009, owing to a reduction in the average price of tobacco. The IMF estimated that remittances to Malawi declined by more than 50% in 2009, to USD 61 million from USD 144.2 million in 2008. The crisis also appears to have affected private transfers to non-government organizations, which are estimated to have declined by 5% in 2009. FDI in 2009 were lower at USD 110 million compared to USD 215 million in 2008 but remained within the medium term trend. Going forward, growth is projected to slow down but will remain relatively strong at 6% and 6.2% for 2010 and 2011 respectively. The share of private investment to GDP increased from 3.5% in 2001 to 15.5% in 2008. However, private investment contracted in 2009. Medium term prospects look weaker but still positive reflecting a gradual recovery after a setback in growth in 2009.

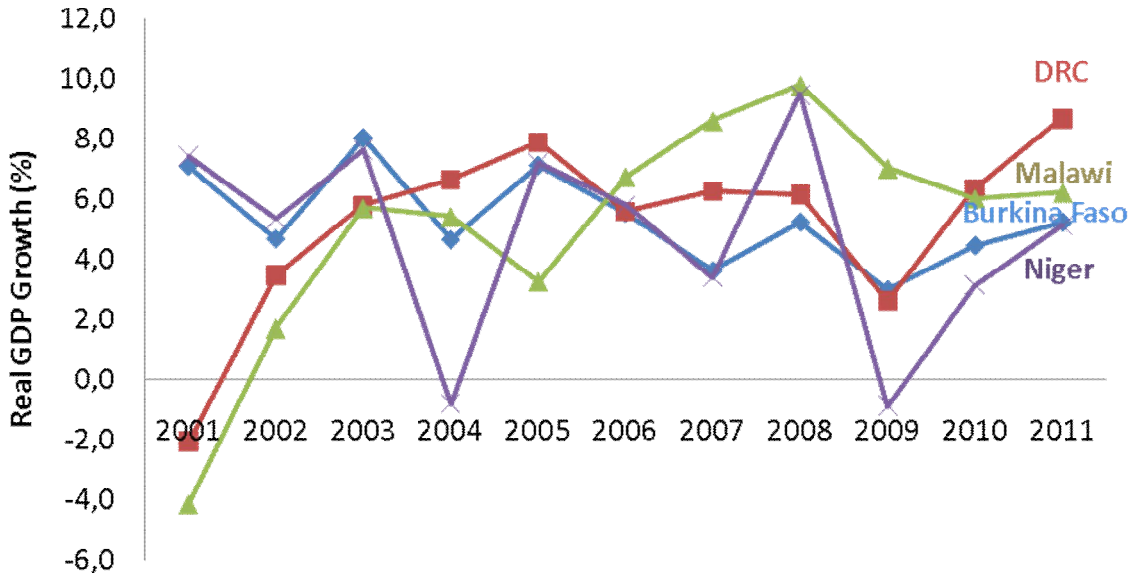
Democratic Republic of Congo

Economic growth in the DRC slowed to 2.5% in 2009 (from 6.2% in 2008) due to structural problems and the world economic and financial crisis. It mainly affected the country through shrinking trade and FDI because of lower world demand and a drop in prices for the DRC's main exports. Growth should recover to 6.5% in 2010 and 8.8% in 2011. The macroeconomic structure came under great strain in 2009 because of the international recession (African Economic Outlook, 2010). The trade deficit grew, government revenue fell, the central bank

had to finance the budget deficit, the currency lost 45.2% of its value against the USD and inflation averaged 44% over the year. The economic crisis made life tougher for the population and the chances of achieving the Millennium Development Goals by 2015 faded. The economy was driven in 2009 by wholesale and retail trade (up 9%), construction (+4.4%), manufacturing (+4%) and transport and communications (+3.4%). Extractive industries were the most affected by the crisis, shrinking 7.2%, a drop of 18.6% on the year. Expansion of wholesale and retail trade slowed to 9% in 2009 (from 12.3% in 2008) whilst transport and communications growth also slackened, to 3.4% (8.4% in 2008). Slower growth and fewer remittances from Congolese abroad substantially reduced demand in 2009, with lower household consumption and private investment and especially a drop in net exports.

The performance of the four economies in terms of real GDP growth from 2001 to 2011 is shown by Figure 1 below.

Figure 1



Source: African Economic Outlook, 2010

We note that real GDP growth rate dropped drastically in 2009, the largest fall has been for Niger's economy followed by DRC, Burkina Faso and then Malawi. DRC, Burkina Faso and Niger have not only faced the setbacks of the world economic downturn but also declining food prices and export prices. Malawi, in turn, has been in a better position to circumvent the effect

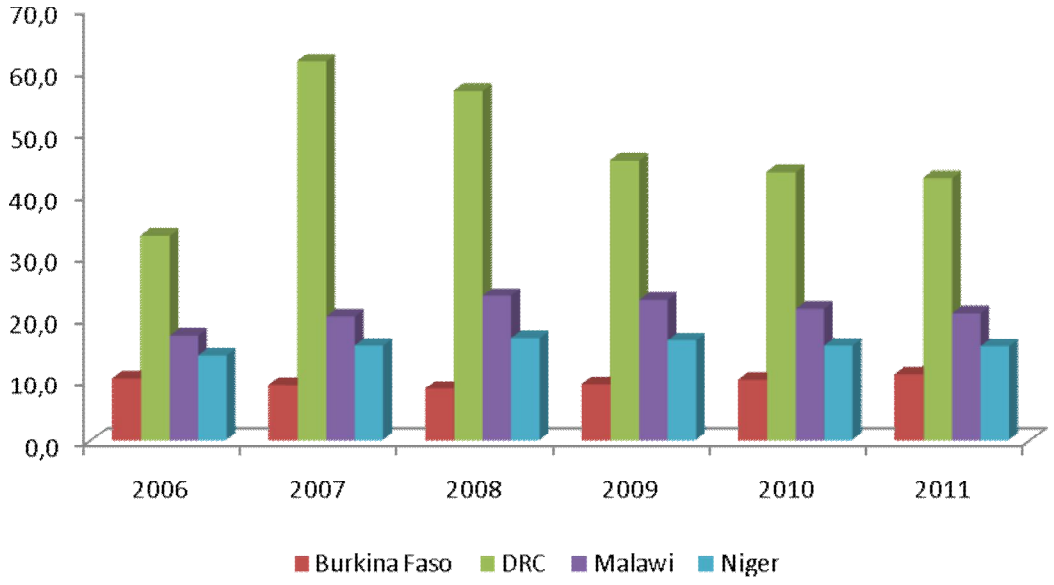
of the global financial crisis. In terms of their export performance, we observe from table 2 and Figure 3 below, that exports as a share of GDP has dropped relatively more for DRC from 2008 to 2009 compared to Malawi and Niger whilst Burkina Faso registered a rise in its exports share.

Table 2: Exports as a share of GDP (%)

Country	2006	2007	2008	2009	2010	2011
Burkina Faso	10.2	9.1	8.5	9.3	10.0	10.9
DRC	33.3	61.6	56.8	45.4	43.6	42.6
Malawi	17.2	20.2	23.5	22.8	21.4	20.7
Niger	13.9	15.5	16.8	16.4	15.5	15.4

Source: African Economic Outlook, 2010

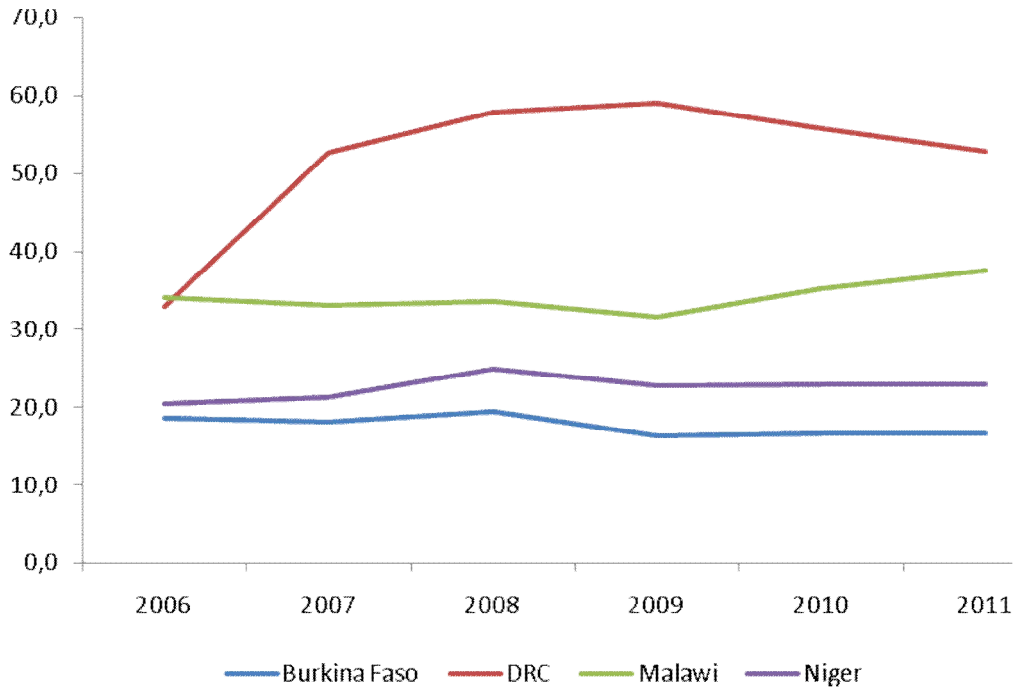
Figure 2



Source: African Economic Outlook, 2010

From Figure 3 below, the import performance in terms of imports as a share of GDP dropped for all countries between 2008 and 2009, except for DRC which peaked in 2009 to attained 59% of GDP.

Figure 3: Import as a share of GDP (%) from 2006-2011



Source: African Economic Outlook, 2010

4. Data and Estimation Methodology

Data Source

We use data from the World Bank Enterprise Survey for four low income countries in Africa namely Burkina Faso, Democratic Republic of Congo, Malawi and Niger for the period 2006 and 2009. The survey covers in total 1,609 firms in the manufacturing and services sectors for the four countries over the two years. The manufacturing firms are mainly from the food, metals and machinery, electronics, garments and textiles and chemicals and pharmaceuticals industries. The services sector includes firms from hotel and restaurant and other services.

Data Analysis

From Table 2 below, we note that firms in our sample are from the manufacturing and services sector and the different size of the firms are well represented in the data. We observe that the

percentage of exporting firms has declined in Burkina Faso, Malawi and Niger from 2005/2006 to 2009.

Table 2

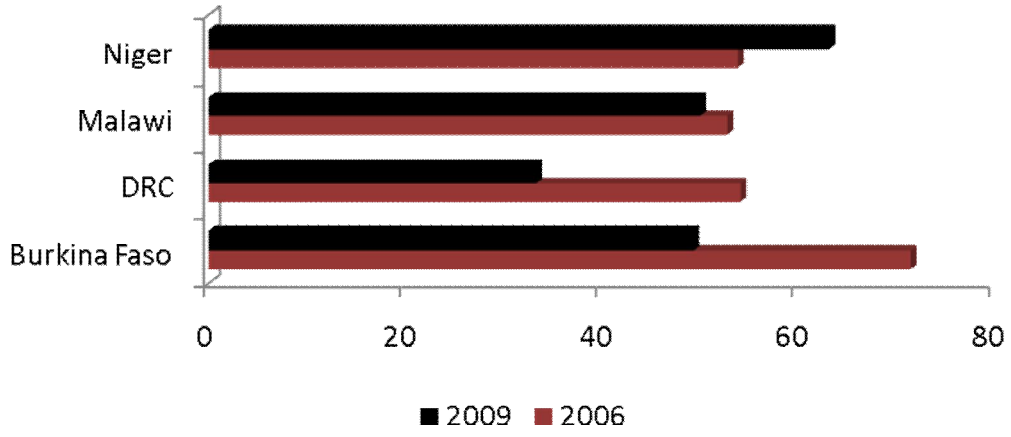
		Sample Composition by Size				Sample Composition by Industry		Exporting Firms (%)
Country	**Year**	**Number of Obs**	**Small**	**Medium**	**Large**	**Manufacturing**	**Services**	
Burkina Faso	2006	139	106	27	6	51	88	11.51
	2009	394	226	108	60	98	296	6.09
DRC	2006	340	258	71	11	256	84	3.53
	2009	151	84	51	16	58	93	9.93
Malawi	2005	160	19	83	52	160	-	24.38
	2009	150	45	54	51	70	80	12.00
Niger	2005	125	86	35	4	125	-	20.80
	2009	150	87	52	11	48	102	14.00

Source: World Bank Enterprise Survey

Effect on Domestic Sales, Direct Exports and Indirect Exports

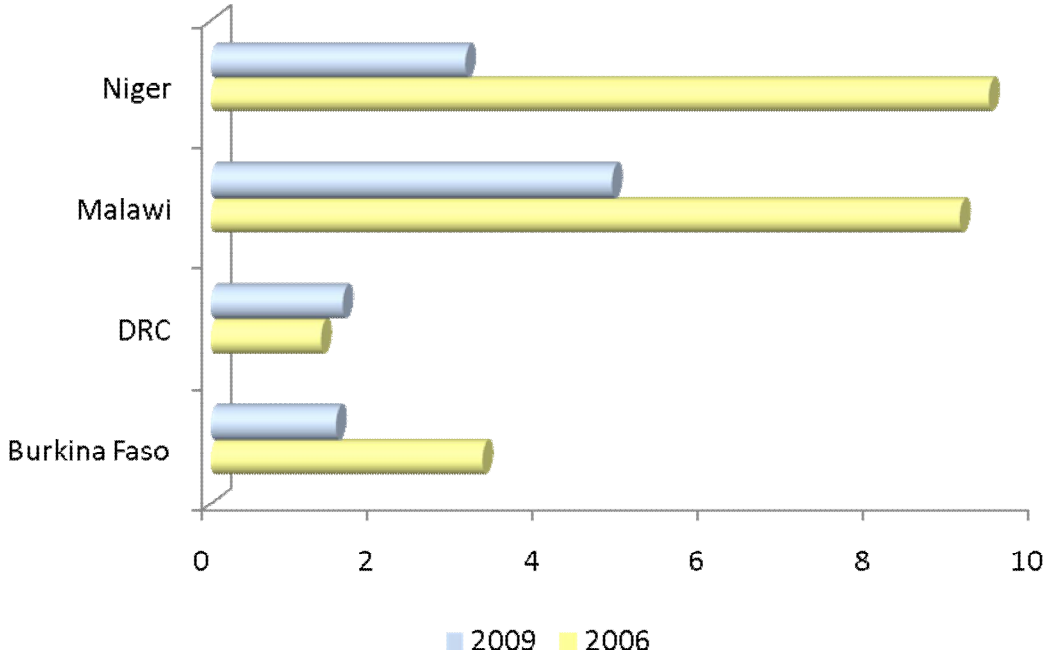
Firms were asked the share of their establishment sales that were domestic sales, direct exports and indirect exports in the fiscal year. We note from Figure 4 below that exporting firms in 3 out of 4 countries experienced a decrease in their domestic sales from 2006 to 2009. Only exporting firms in Niger observe a rise in domestic sales during that period.

Figure 4: Average % of Domestic Sales across Exporting Firms from 2006 - 2009



Further, most countries except DRC, experienced a drastic fall in direct exports from 2006 to 2009 (Figure 5 below) whilst indirect exports (which include those firms that sell their products domestically to a third party that in turn exports their products) have increased during the period for all countries, except Malawi.

Figure 5: Average % of Direct Exports across Countries from 2006 - 2009



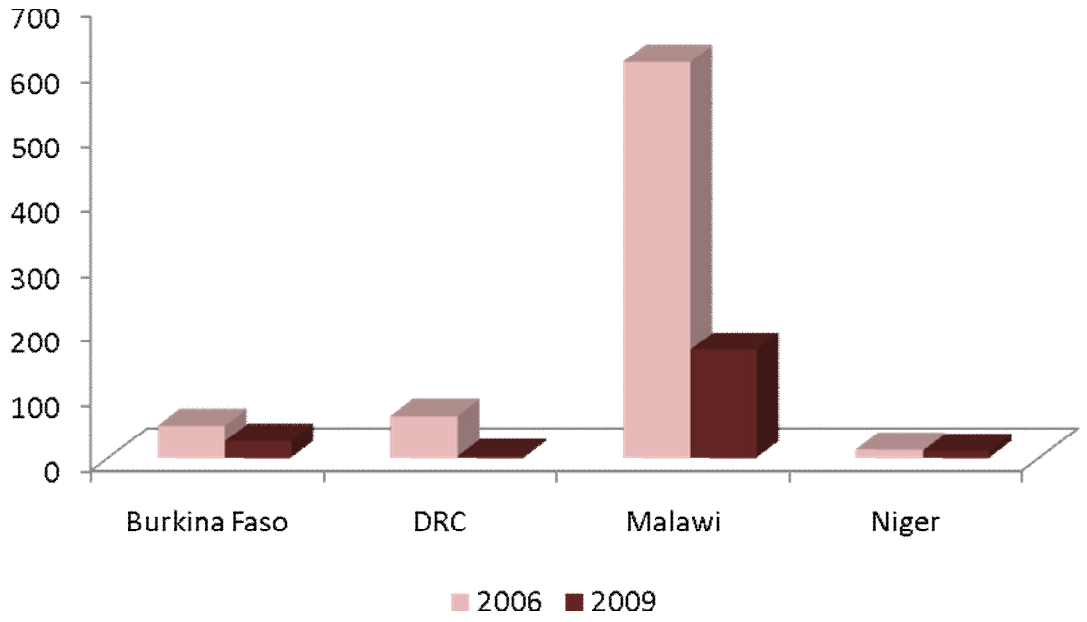
Effect on Permanent and Temporary Employment

The change in permanent employment measures the variation in employment between 2006 and 2009. Permanent employment is defined as including all paid employees contracted for a term of one or more fiscal years who have a guaranteed renewal of employment and who work eight or more hours per day. Firms can substitute permanent employees with temporary workers; therefore, to measure the full effect of the financial crisis on employment, it is also important to analyze changes in temporary employment. Temporary employment consists of all paid, short-term (that is, for less than a fiscal year) employees who have no guarantee of employment contract renewal and who work eight or more hours per day.

Permanent employment fell in Burkina Faso only for large firms whilst the drop in permanent employment is registered only for small firms in DRC between 2006 and 2009. In Malawi permanent employment dropped across all firms, irrespective of size. The fall seems, however, to be more significant for large firms. For Niger, permanent employment fell across medium-sized and large firms but the drop is more pronounced for the latter. The reduction in temporary employment has been more significant across small and medium-sized firms in Burkina Faso, DRC and Niger. In Malawi the decline has been noted in medium-sized and large firms with the latter facing a larger decline in temporary employees. We observe that overall, permanent employment declined mainly in large firms while the drop in temporary employment arises essentially across small and medium-sized firms. Larger firms are in a better position to reduce their permanent workers relative to small and medium-sized firms. This may also reveal the large firms' perception of the crisis as a permanent change in the business environment, with long-term consequences.

As far as exporting firms are concerned, we note a decline in permanent workers across all exporters in Burkina Faso with the fall being larger for medium-sized and large firms. Only small exporting firms in DRC have been reducing their permanent labour force. In Malawi medium-sized and large exporting firms registered a fall in permanent employment and the larger decline is registered for the latter. In Niger, the fall in permanent workers was observed in large exporting firms. Temporary employment, on average, decreased in all exporting firms across the four nations (Figure 6). The reduction in temporary employment has been more significant across medium-sized and large exporting firms in Burkina Faso and Malawi. For DRC, temporary employment fell across all exporting firms but the decline is more important for medium-sized and large exporters. Niger's small and medium-sized exporting firms reduced temporary workers, and the changes are more significant for the latter. Overall we observe that the decline in both permanent and temporary workers has been more pronounced in medium-sized and large exporting firms across the four low income nations.

Figure 6: Mean Number of Full-Time Temporary Workers across Exporting Firms from 2006 - 2009



Effect on the Use of Internal Funds

During difficult economic times, firms are more likely to use internal financing, become overdue in their obligations, restructure their liabilities, or even file for bankruptcy. We note that exporting firms in Burkina Faso and DRC relied more on their internal resources to finance working capital in 2009 compared to 2006. Further in all countries but Malawi, exporters have been using more internal funds to purchase fixed assets in 2009. In the event of the financial crisis, domestic borrowing can be more difficult to contract, and the firms can be forced to use their own liquidity. If the firm faces an important fixed cost to enter the export market, the need for financing it through borrowing will be larger, and the negative impact of the banking crisis is likely to be larger (Berman, 2006).

Estimation Methodology

We estimate the following export equation:

$$Exports_{jt} = \lambda_0 + \lambda_1 FirmAge_{jt} + \lambda_2 Size_{jt} + \lambda_3 \ln Sales_{jt} + \lambda_4 \ln Capital_{jt} + \lambda_5 Foreign_{jt} + \lambda_7 State_{jt} + \lambda_8 Year\,09 + Sector + Country + \varepsilon_{jt} \quad (1)$$

where *j* represents firm and *t* is time. *Exports* is a dummy variable taking the value of 1 for the exporter and 0, otherwise. *FirmAge* represents the number of years the firm has been in operation in a particular country. *Size* denotes the firm size ranging from a small to medium sized and large firm size and *lnSales* is total annual sales of the establishment which measures the performance of the exporting firm. *Lncapital* is log of the firm's expenditure on the purchases of machinery, vehicles and equipment. *Foreign* is a dummy with value of one is the firm is owned by foreign individuals, companies or organisations and 0, otherwise. *State* is a dummy variable having a value of one if the firm is state-owned and zero otherwise. *Sector* covers industry dummies namely the food, metals and machinery, electronics, garments and textiles and chemicals and pharmaceuticals industries. The services sector includes firms from hotel and restaurant and other services. *Year09* captures the effect of the global financial crisis in 2008 and 2009, the period during which the firms were interviewed. *Country* represents country dummies.

We perform some preliminary checks to detect the presence of major outliers and to test for heteroscedasticity[1]. Since there is no serious problem, we use OLS with robust[2] standard errors to correct for any minor deviations from the classical assumptions of least squares regressions. Logistic regression technique is also used as the dependent variable is discrete that is binary (with values 0, 1).

5. Findings

[1] This is done using the Cook and Weisberg (1983) test. We also use the Shapiro-Wilk test for normal data and the Kernel density estimates from STATA to test for the normality of the residuals.
[2] Huber/White/Sandwich estimate of standard errors from STATA 10.

Using firm level data from the four low income countries, OLS results for each country are shown by Table 3 below. Overall, the model performs well and most coefficients are consistent with expectations. We note that the sales level which measures the performance of firms is likely to impact positively on the decision of the firm to export on foreign markets. Size is also an important element as large firms are more likely to export, relatively to small and medium sized enterprises. Firm's size and age matter in Burkina Faso and when pooling all the four countries, we observe that large firms are more likely to export. Year09 captures the events which have occurred in 2009 namely the energy, food and financial crises. Our results reveal a significant and negative coefficient across all countries except DRC, ranging from 9.6% to 16.3%, with an average of 4.9% for all four economies. We can argue that the negative coefficient also encompasses the effect of the financial crisis on exporting firms, which is more pronounced for exporters compared to non-exporting firms. Capital intensity, foreign and state ownership do not appear as statistically significant variables affecting the export status of firms.

Table 3: OLS Results across the Four Individual Countries (2005 and 2009)

	Burkina Faso	DRC	Malawi	Niger	Pooling all 4 countries
Firmage	0.003	0.001	0.0003	-0.004	0.001
	(0.001)**	(0.002)	(0.002)	(0.002)**	(0.001)
Insales	0.006	0.008	0.049	0.040	0.020
	(0.005)	(0.021)	(0.014)***	(0.021)*	(0.005)***
Incapital	0.001	0.001	0.002	-0.001	0.001
	(0.002)	(0.004)	(0.003)	(0.004)	(0.001)
Medium	0.069	0.017	-0.128	-0.067	0.001
	(0.036)*	(0.070)	(0.056)**	(0.070)**	(0.021)
Large	0.171	-0.015	-0.014	0.135	0.108

	(0.066)***	(0.152)	(0.084)	(0.152)	(0.041)***
Foreign	-0.054	0.052	0.061	0.129	0.033
	(0.041)	(0.086)	(0.060)	(0.086)	(0.025)
State	-0.075	0.146	-0.041	-0.212	-0.068
	(0.142)	(0.106)	(0.193)	(0.106)**	(0.091)
Year09	-0.096	0.033	-0.106	-0.163	-0.049
	(0.043)**	(0.070)	(0.061)*	(0.070)**	(0.020)**
Country	-	-	-	-	Yes
Sector	Yes	Yes	Yes	Yes	Yes
Constant	-0.055	-0.133	-0.618	-0.476	-0.196
	(0.087)	(0.108)	(0.207)***	(0.218)	(0.095)**
R-squared	0.120	0.077	0.204	0.220	0.133
No of obs.	499	479	282	168	1428

Notes: (a) Dependent variable is Export Status of Firms (Dummy Variable = 1 if exporter and 0, otherwise);
(b) Robust absolute standard errors in parentheses;
(c) * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent

We also apply logistic regression technique to equation (1) as export status is a discrete variable where OLS may not be the most efficient estimation method. Our estimates (Table 4 below) serve to reinforce the conclusions from the OLS estimation. The magnitude and pattern of the variables is very similar for both estimation methods. There are some changes in the levels of significance, but the conclusions about 2009 external factors including the impact of the financial crisis appear to be more significantly negative for exporters in the least developed world. Three out of four countries show a negative effect of the year 2009 on their likelihood to enter the export market. As shown in Figure 5 above, exports have declined for all countries except DRC. This is confirmed by both the OLS and logit results. Capital intensity, foreign and state ownership are still statistically insignificant, whilst sales and size are on average important variables, with large firms finding it easier to enter the export market relative to small and medium-sized enterprises.

Table 4: Logit Results across the Four Individual Countries (2005 and 2009)

	Burkina Faso	DRC	Malawi	Niger	Pooling all 4 countries

Firmage	0.001	0.0002	0.0002	-0.004	0.0002
	(0.001)	(0.0003)	(0.001)	(0.002)*	(0.0003)
lnsales	0.004	0.004	0.065	0.049	0.014
	(0.005)	(0.003)	(0.017)***	(0.025)**	(0.0003)***
lncapital	0.0004	0.001	0.002	.00003	0.0003
	(0.001)	(0.001)	(0.003)	(0.004)	(0.001)
Medium	0.064	0.017	-0.070	-0.071	0.014
	(0.039)*	(0.024)	(0.090)	(0.064)	(0.016)
Large	0.190	-0.005	0.010	0.088	0.055
	(0.118)*	(0.021)	(0.099)***	(0.168)	(0.034)*
Foreign	-0.029	0.029	0.057	0.133	0.012
	(0.013)**	(0.027)	(0.064)	(0.088)	(0.013)
State	-0.012	0.061	-0.012	-	-0.023
	(0.044)	(0.152)	(0.153)	-	(0.022)
Year09	-0.065	0.028	-0.100	-0.178	-0.023
	(0.038)*	(0.034)	(0.050)**	(0.084)**	(0.014)*
Country	-	-	-	-	Yes
Sector	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.203	0.159	0.201		0.200
No of obs.	499	439	226	154	1428

Notes: (a) Dependent variable is Export Status of Firms (Dummy Variable = 1 if exporter and 0, otherwise);
(b) Robust absolute standard errors in parentheses;
(c) * significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent

6. Conclusion

Overall, firms in the least developing world have experienced the effects of the financial crisis. This impact has been felt essentially through a drop in exports as well as temporary and permanent employment across both exporting and non-exporting firms. Our results show that the impact of the crisis is very much pronounced for exporting firms across three out of the four low income countries studied. The magnitude of the impact, however, defers across nations as the countries' reactions to the crisis in terms of policy measures may vary. The effect seems to be more pronounced for Niger followed by Malawi and Burkina Faso. Further, these low income countries depend extensively on trade and foreign direct investment and their main

export destinations are the industrialized nations namely EU and the US, where the impact of the financial crisis has been very significant. In essence, demand from these countries has fallen drastically in 2009, explaining the negative effect on exporting firms in the low income countries. Our analysis also reveals a reduction in permanent and temporary workers across exporting and non-exporting firms, with a higher drop across larger and medium-sized firms. This is because; larger firms are in a better position to reduce their permanent workers relative to small and medium-sized firms. This may also reveal the large firms' perception of the crisis as a permanent change in the business environment, with long-term consequences. Lastly we show that in the event of the world economic downturn, firms have made use of the internal funds to purchase fixed assets or finance their working capital. In fact, domestic borrowing can be more difficult to contract, and the firms can be forced to use their own liquidity (Berman, 2006).

One limitation of our study is the inability to single out the impact of the global financial crisis in 2008/09 on exporting firms across the four low income countries. To achieve this, the firm level data used should have been on a monthly basis across the whole years of 2008 and 2009. We are constrained by data availability and the only existing firm level data for Africa is the World Bank Enterprise Survey.

The current economic crisis has affected all the drivers of African growth: prices and demand for primary commodities, capital flows, especially foreign direct investment. Many countries face the risk of twin deficits (current account and budget deficits) and greater poverty. Trade is one channel through which the financial crisis has operated and impacted considerably the low income countries. The major challenge for poor economies remains to mobilize resources to finance growth, development, investment in infrastructure and poverty reduction programs. This will require that aid commitments by donors are met, and that African countries improve their performance in resource mobilization at the national and regional level. However, long-term strategies must be oriented toward building more resilience to the crisis and sustaining growth.

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