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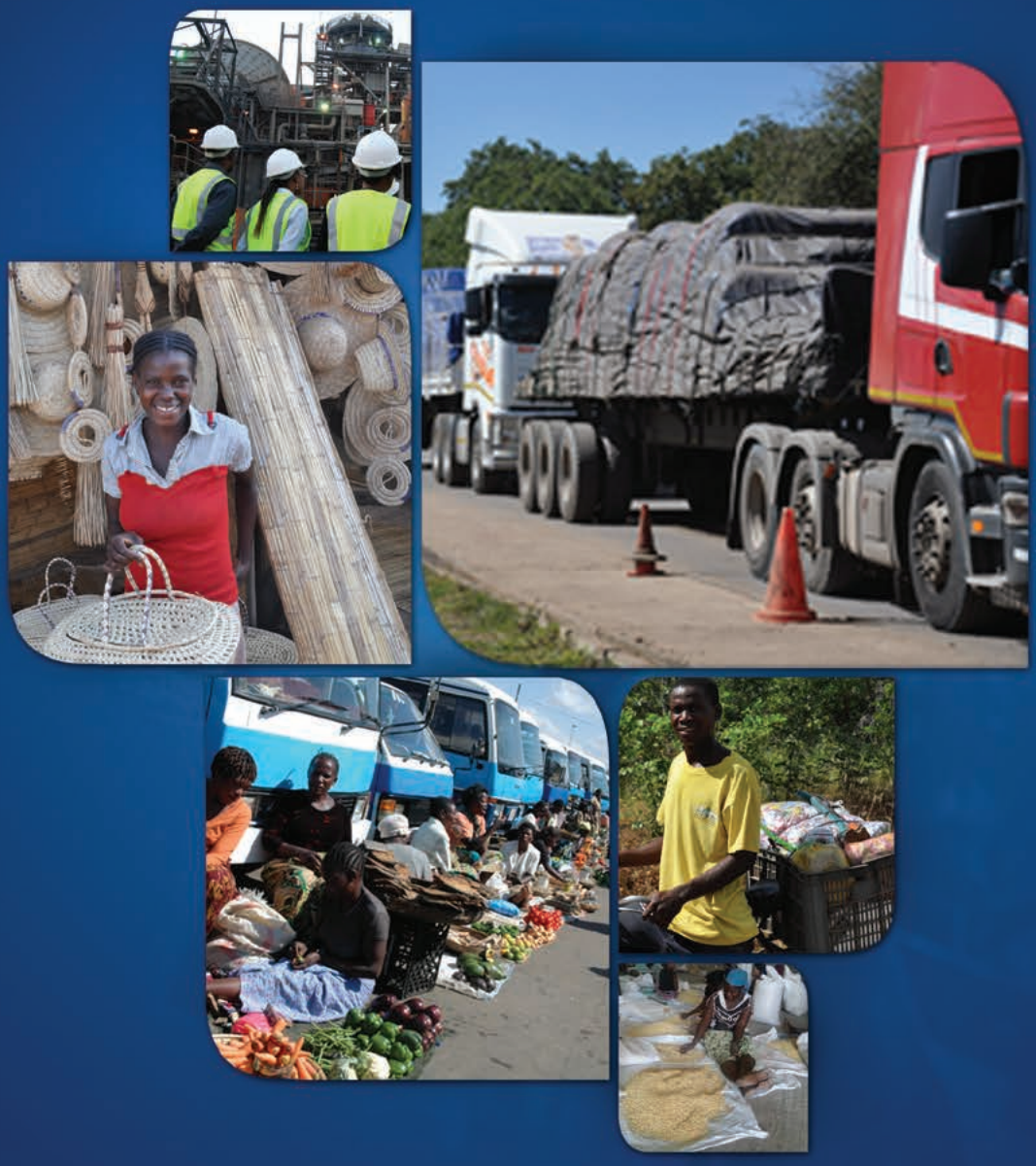
Zambia Economic Brief



PROMOTING TRADE & COMPETITIVENESS: WHAT CAN ZAMBIA DO ?

WORLD BANK GROUP JUNE 2014 ISSUE 3

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This report was prepared by the staff of the Africa Region Poverty Reduction and Economic Management. The findings, interpretations, and conclusions expressed herein are those of the authors and do not necessarily reflect the views of the World Bank's Board of Executive Directors or the countries they represent.

The report was designed, edited, and typeset by Communications Development Incorporated, Washington, DC.

Cover: Musa Mwamutanda
Photo: Jumbe Ngoma

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Foreword

I am pleased to share the third *Zambia Economic Brief* with a focus section on trade and competitiveness. This Brief is part of a series of short economic updates produced twice a year by the World Bank. Each Brief includes two sections: the Bank's assessment of recent economic developments and outlook in the short to medium term, and its analysis on a specific development topic or theme.

Zambia continues to experience strong growth, but challenges are building up. Copper prices are declining, and global financial conditions are tightening. At home, the fiscal deficit is becoming difficult to manage, and Zambia's currency has sharply depreciated. The government intends to reduce future budget deficits, but this would involve making difficult political choices. Zambia risks losing the benefits of macroeconomic stability. In the past few years inflation and interest rates have declined and the currency has been relatively stable, providing an environment for growth and reducing poverty. High inflation would hurt the poor most.

The trade and competitiveness section of the Brief stresses that Zambia can and should try to get more out of what it has, namely copper, arable land, and water, to grow faster and create more jobs. Beyond rhetoric, the analysis shows that Zambia's non-copper exports to neighbors are indeed growing and could grow further. Agriculture exports also show large potential, and Zambia could emerge as the grain basket for Southern and Eastern Africa. But this requires that trade costs be reduced. Currently, the costs of crossing borders and compliance with regulations are high. This encourages small traders, including women for whom such trade is an important source of livelihood, to bypass formal systems. For agriculture, a more predictable export policy would lead to higher output and lower volatility in domestic prices. Zambia could also gain by improving value addition by local suppliers to the mining industry.

We hope that the findings of the Brief will generate a healthy debate in the country on policies and interventions on trade and competitiveness and further opportunities for diversification for Zambia.

Kundhavi Kadiresan
Country Director for Zambia
The World Bank

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The report was edited and laid out by a team at Communications Development Incorporated, led by Bruce Ross-Larson.

Executive summary

Zambia continues to post strong growth, but fiscal accounts deteriorated in 2013

Recent economic developments

Zambia's 6.4 percent growth rate in 2013, though strong, was lower than the 7.3 percent in 2012. During 2013, agriculture output contracted by 15.4 percent, copper output rebounded despite a decline in copper prices, and services grew in excess of 8 percent, partly due to growth in government services. The Zambian national accounts have been recently rebased to 2010 from the previous base year of 1994. Rebased estimates for 2010 GDP are 25 percent larger than the 1994-based estimates due to better coverage of informal economic activities, which are mostly in the services sector. This Brief uses 1994-based GDP data.

Inflation stayed within single digits in 2013, but pressure has been building up. Average annual inflation in 2013 was around 7.0 percent against 6.6 percent in 2012. To contain inflationary pressures, the Bank of Zambia increased the policy rate several times during 2013 and in 2014, raising it from 9.25 percent at the beginning of 2013 to 12.00 percent at the end of March 2014.

Fiscal accounts deteriorated sharply in 2013, and the fiscal deficit was 6.8 percent of GDP against 4.3 percent budgeted. Including other liabilities such as the buildup of arrears toward pensioners and the guarantees extended by the government to the Food Reserve Agency (FRA), fiscal deficit stood at around 8.7 percent of GDP. The higher fiscal deficit is mainly the result of significant overrun in subsidies (3.1 percent of GDP against 0.7 percent budgeted), wage bill (9.9 percent of GDP against 9.1 percent budgeted), and lower collection of revenues than budgeted. The authorities financed the much-higher-than-budgeted deficit using domestic financing, bridge loans from the central bank and unspent proceeds from the 2012 Eurobond. Net domestic financing was 4.7 percent of GDP against 1.5 percent budgeted.

Increased issuance of domestic debt alongside rising inflation has pushed up yields on government securities. For example, the weighted average yield rate for Treasury bills was 12.8 percent in 2013, up from an average of 10.8 percent in 2012. Without fiscal consolidation, increased domestic financing of the deficit will prevent the private sector from accessing credit at lower cost.

Zambia faces declining copper prices, prospects of slowing growth, and likely increasing borrowing costs in the near term. In these circumstances, continuation of the highly expansionary fiscal stance of 2012 and 2013 will hurt growth and make the economy more vulnerable to negative shocks. The government seems aware of the need to adjust, and some steps have been taken to contain expenditure. While its immediate priority would be to implement the 2014 budget as planned, particularly by staying within the net domestic financing target, a more aggressive reduction in the deficit would be needed in 2015 and 2016. But that is not going to be easy. Four expenditure areas will determine success in reducing fiscal deficit: agriculture subsidies, fuel subsidies, the wage bill, and public investment. Each of these involves making difficult political choices.

Zambia faces declining copper prices, prospects of slowing growth, and likely increasing borrowing costs in the near term

External debt is still low but new risks are emerging given recent Eurobond issuances. Rollover and refinancing risks are real in the future, as investor risk aversion to non-investment-grade countries might increase, following the U.S. Federal Reserve's tighter monetary policy. This will especially be true if rollover periods coincide with times of heightened global financial turbulence or a depreciating kwacha against the dollar. The government should strengthen its capacity to identify suitable projects, manage its debt portfolio, and develop a medium-term debt management strategy in light of its rapidly changing debt situation.

Medium-term outlook

Among Zambia's trading partners, in the next two years growth is projected to remain subdued in South Africa and to slow down in China. Copper prices are projected to fall in 2014, by 5.9 percent in nominal terms and 6.4 percent in real terms, as supply continues to rise and demand remains weak. Weakening copper prices would be mitigated by a production increase but overall export earnings are set to remain subdued. The medium-term outlook is for growth to stay robust—around 6.5 percent a year—supported by domestic demand and the global recovery, but with a real risk of being actually lower. A major risk to the outlook is that copper prices could decline even more than in the baseline presented in this outlook, hurting Zambia's economy.

Increased financial-market and capital volatility associated with the "tapering" of quantitative easing in the United States also remains a substantial risk. With global financial conditions tightening, short-term capital inflows have tumbled in Sub-Saharan Africa; Zambia, which has seen robust portfolio inflows into its local securities markets in recent years, might be affected by a reversal of capital flows. Also Zambia has relied on favorable international capital flows with two Eurobond issuances to finance its fiscal expansion in the aftermath of the global financial crisis. It is therefore particularly vulnerable to a changing international environment and possible increase in benchmark interest rates and spreads.

Tightening global financial conditions may hit the Zambian economy if they are not managed well. Zambia is also more closely monitored now by international investors and policy mistakes could be costly, as evident from the higher cost of borrowing the second time when Zambia went to international capital markets. In the past two years several policy actions have been reversed primarily because their full implications were not considered initially. This raises concerns about the process of policymaking and coordination in the government and creates uncertainty about how policymakers would respond to economic challenges in the future.

Trade and competitiveness

Zambia's trade grew fast over the past decade and its share of Sub-Saharan Africa, Common Market for Eastern and Southern Africa, and world exports grew too. The nature of trade has also been changing in terms of composition and partner countries. Six salient trade and competitiveness outcomes are identified in the Brief:

- Non-copper merchandise exports have grown briskly alongside copper exports.
- The number of exporting firms and exported products has grown, but exports have low survival rates.
- Zambia is trading more with its regional partners, including through informal channels.
- Zambian enterprises face high trade costs.
- Zambia has scope to expand export of services.
- Zambia has scope to improve competitiveness of mining-related goods and services.

These outcomes point to the opportunities available to diversify production and exports further. Data from export transactions over more than a decade show a large increase in the number of exporting firms and in products exported to neighboring countries. This increase signifies opportunities, though they are often transient. Since these transactions are small in value, border costs are a big share of exported value. Therefore reducing costs of crossing borders will improve the competitiveness of exporting firms. Also there is sizable informal trade with neighboring countries mostly involving small traders including women. Greater recognition and facilitation of small trade and reducing the costs

of crossing borders would help these people for whom trade is also an important source of livelihood.

The Brief specifically focuses on the opportunity for Zambia to emerge as a major food exporter to Eastern and Southern Africa and the policy direction that would take it there; the need to reduce high costs of crossing borders that would facilitate regional trade in non-copper products; and a long-term approach to developing competitiveness of the local mining supply cluster.

Three constraints are identified that come in the way of growing agriculture exports and competitiveness:

- High regulatory costs related to obtaining trade permits, phytosanitary and other certificates, quality analysis, and product registration and testing.
- Unpredictable trade policy and FRA interventions in maize market, which create disincentives for farmers to produce for exports and make on-farm investments and for agribusiness firms to invest in input supply and marketing mechanisms.
- High input subsidies that create incentives for smallholders to expand area under maize but hurt competitiveness by diverting public resources away from long-term improvements.

Analysis shows that even without any input and output subsidies, commercial farmers would be able to produce additional irrigated and rainfed maize for exports to neighboring countries that would also help in stabilizing domestic prices. Good opportunities also exist for smallholder farmers to benefit from export trade. Agriculture exports and competitiveness could therefore grow by:

- Reducing the cost of regulatory compliance by streamlining trade procedures and eliminating unnecessary ones.
- Putting in place a mechanism that precommits the government to allowing agreed amounts of private maize exports and moving to a policy of open borders over time.
- Ploughing back savings from farm input subsidies into measures aimed at improving long-term competitiveness.

The government has taken several steps to reduce border costs and facilitate trade. These include introduction of pre-arrival declarations and improved customs data management systems, elimination of preshipment inspection and replacement with destination inspection, strengthened risk management regimes, and one-stop border posts (OSBPs). But these initiatives have not had their full impact yet. Particularly for OSBPs, complementary actions need to be taken to get the full benefits. An approach that gives priority to simplifying procedures, streamlining requirements, and improving governance before investing heavily in border infrastructure would be preferable.

Zambia should also use the World Trade Organization's Agreement on Trade Facilitation to advance the reforms for reducing border costs. The agreement is binding not only on customs but on all border agencies, and presents a framework within which discussions among all stakeholders can be organized and critical decisions taken.

Zambian suppliers have not been able to benefit much from the strong expansion of copper mining industry in the past decade. While the local supply cluster is relatively big in terms of number of suppliers, it is very small in terms of value-added content. A large number of suppliers are into distribution activities characterized by lower capital and skills requirement. There are several constraints to competitiveness of local suppliers. These include, among others, skills scarcity and gaps that prevent firms from technological upgrading and business expansion; and structural, cost-raising factors such as high cost of finance, high border costs, and the like.

The long-term approach to improving competitiveness of local supply cluster would have the following goals. First, to increase local value-added content, by increasing the technological, skills, and capital intensity of local activities, and by facilitating their upgrading processes. It is very important that this goal is not confused with the goal of simply increasing turnover for Zambian-owned businesses. Second, to expand the number of new entrants in the mining supply chain, which will increase the range of services provided locally, and promote competition. Third, to expand market opportunities for existing service providers. These market opportunities consist of expanding sales to current customers, selling to other mining

Zambia has opportunities to emerge as a major food exporter to Eastern and Southern Africa and as a regional logistics hub. It can also develop long-term competitiveness of local mining supply cluster

and non-mining companies, and expanding into regional markets.

To pursue these goals, an institutional partnership among the government, mining companies, and local suppliers is needed. An existing, public-private sector–driven initiative, the Zambia Mining Local Content Initiative, could be used to energize the process. The strategy of developing a local supply cluster cannot be unilaterally pushed by local suppliers or the government. For the strategy to be successful and its outcomes sustainable, it has to be well informed and designed to make local sourcing economically and financially attractive to buyers.

SECTION I

Recent Economic Developments

Net FDI inflows to the region grew 10.7 percent to $31.9 billion in 2013

Sub-Saharan Africa in 2013

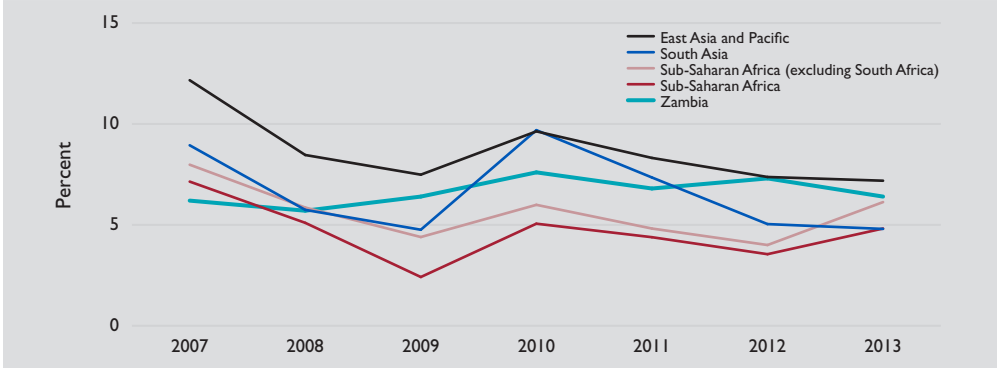
Economic activity was robust in much of Sub-Saharan Africa, including Zambia, in 2013, supported by strong investment demand and private consumption. Gross domestic product (GDP) growth in the region strengthened to 4.7 percent that year, up from 3.5 percent in 2012. In South Africa, one of Zambia's key trading partners, growth slowed due to structural bottlenecks, tense labor relations, and low consumer and investor confidence. Excluding South Africa, average GDP growth for the rest of the region was 6.0 percent, second only to developing East Asia and Pacific at 7.2 percent (figure 1.1).

Owing in part to lower international food and fuel prices, inflation decelerated in the region, growing at an annual 6.3 percent in 2013, down from 10.7 percent a year earlier (figure 1.2).

Capital flows to Sub-Saharan Africa remained robust, reaching an estimated 5.8 percent of regional GDP in 2013, which was less than the 6.5 percent of GDP recorded in 2012 but slightly higher than the developing country average of 5.7 percent. Net foreign direct investment (FDI) inflows to the region grew 10.7 percent to $31.9 billion in 2013, boosted by new hydrocarbons discoveries in many countries. While the resource sector continued to account for much of the region's FDI, some 30 percent of it focused on the domestic market. Consumer-oriented FDI projects in services expanded, including in telecommunications, banking, and transport.

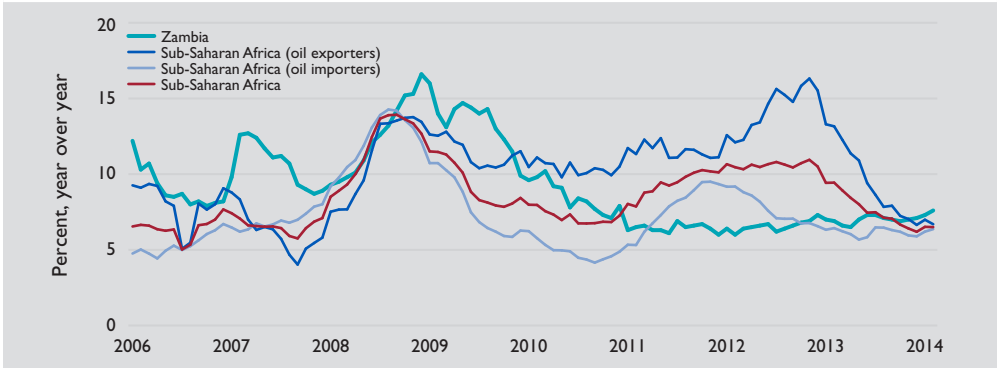
Real metal prices have fallen more than any commodity group since reaching their peak in 2011. Metal prices were 6 percent lower in 2013 than in 2012. The price decline was broad-based: prices for zinc, copper, aluminum, and nickel declined 2, 9, 9, and 14 percent, respectively (figure 1.3). Still historically high, copper declined from $7,966 per metric ton at end-December 2012 to $7,215 at end-December 2013, declining further to $6,650 at end-March 2014.

Figure 1.1 **Growth picked up in Sub-Saharan Africa in 2013**



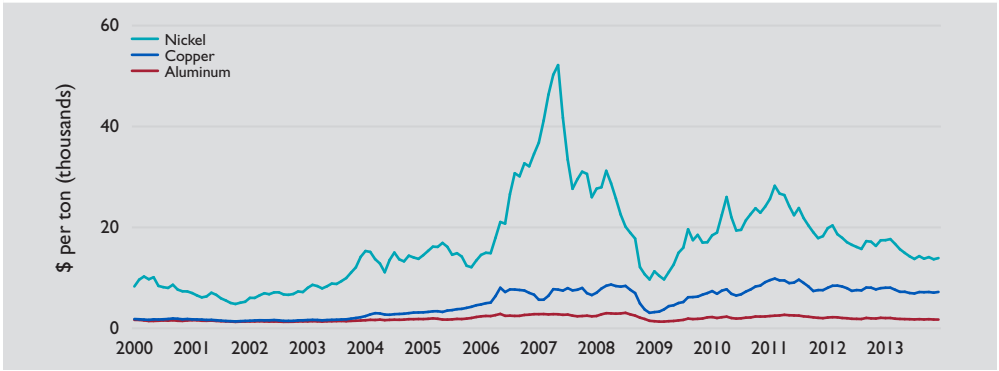
Source: World Bank.

Figure 1.2 Inflation eased in 2013



Source: World Bank.

Figure 1.3 Prices of aluminum, copper, and nickel



Source: World Bank.

In 2013 mining production rebounded after two years of decline

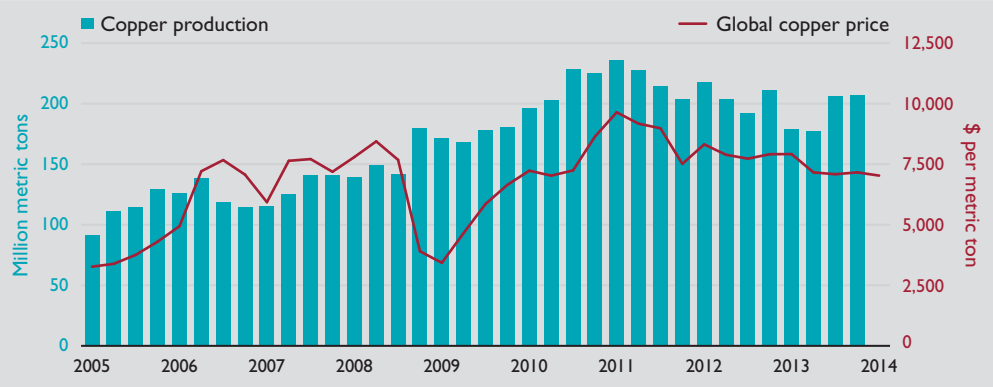
The state of Zambia's economy

Zambia continued to post strong, but declining, growth (6.4 percent in 2013 against 7.3 percent in 2012). As in recent years, the main drivers were the secondary and tertiary sectors (with annual growth of 8.3 and 8.6 percent, respectively). Several factors (including stepped-up public infrastructure spending, rising urban incomes, and new hires in the civil service) boosted expansion of the construction, communications, and transport sectors as well as public administration services. Agriculture output contracted sharply (down 15.4 percent), due to a fall in maize and cotton production. In 2013 mining production rebounded after two years of decline. Yet even as prices of copper declined, its production was boosted by the opening of the Lubambe mine and ramping up of production at the Mulyashi copper mine (figure 1.4).

The just-completed rebasing of the national accounts shows that the Zambian economy is bigger than earlier estimated and that services have a bigger share. The Central Statistical Office has just finalized rebasing the national accounts to 2010 (from 1994). Rebased estimates for 2010 GDP are 25 percent larger than the 1994-based estimates—kwacha (K) 97.2 billion compared with K77.7 billion. The new estimates aim to include more comprehensive coverage of the informal sector. Among other notable differences with previous estimates, the relative contribution of each sector to overall GDP has changed: Zambia is now presented as a service-oriented economy with the tertiary sector at 53.7 percent of GDP and manufacturing at 7.9 percent. Agriculture, forestry, and fishing account for 9.9 percent and mining 12.9 percent. The revised GDP estimates for 2011, 2012, and 2013 are expected to be released later in 2014. This Brief uses the 1994-based GDP.

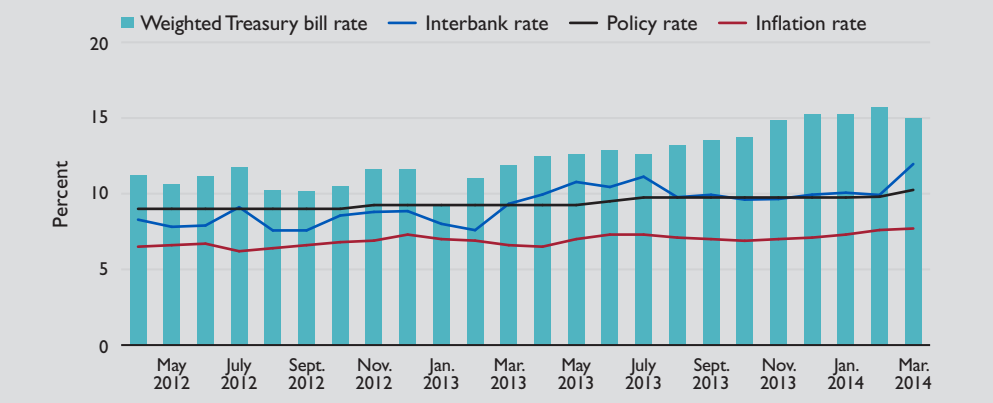
Inflation has stayed within single digits since 2009, but pressures started building in 2013, despite moderating food inflation (figure 1.5). Inflation was 7.1 percent at end-2013, mainly due to higher nonfood inflation (8.2 percent, year over year); food inflation at end-2013 moderated to 6.2 percent (year over year) thanks to improved food supply. The latest inflation figures (April 2014) indicate acceleration to 7.8 percent (year over

Figure 1.4 Zambia copper production and global copper prices (2005–13, quarterly figures)



Source: Bank of Zambia and World Bank staff computations.

Figure 1.5 Inflation, Treasury bill yields, and policy rates are moving up



Source: Bank of Zambia.

year). Average annual inflation for 2013 was around 7.0 percent (6.6 percent in 2012).

The Bank of Zambia (BoZ) acted to contain inflationary pressures. During 2013 it increased the policy rate by 25 basis points twice to reach 9.75 percent. In 2014, BoZ monetary policy targets end-year annual inflation of no more than 6.5 percent through the use of open-market operations aiming to steer the average interbank rate toward the policy rate (within a band of 2 percentage points). Prompted by increased inflation as well as high liquidity levels and strong pressures on the exchange rate, the monetary policy committee further adjusted the BoZ policy rate by 50 basis points to 10.25 percent at end-February 2014 and then by 175 basis points to 12 percent in April.

Fiscal deterioration and difficult choices ahead

Large budget overrun in 2013

Fiscal accounts deteriorated sharply in 2013. The 2013 budget planned a deficit of K5.4 billion, around 4.3 percent of GDP, but ended up with a deficit of K8.2 billion—close to 6.8 percent of GDP according to preliminary estimates (table 1.1). This preliminary figure is based on budgetary releases, therefore computed mostly on a cash basis. It does not take into account the buildup of arrears toward pensioners or the guarantees extended by the government to the Food Reserve Agency (FRA), which did not lead to disbursements within the year. Including these liabilities would raise the fiscal deficit to around 8.7 percent of GDP, or very close to the International Monetary Fund (IMF) estimated fiscal deficit in the 2013 Article IV Consultation (IMF 2014).

The 2013 budget overrun resulted mainly from higher expenditure on subsidies and wages and from domestic revenues that came in lower than budgeted. Expenditure on subsidies was 3.1 percent of GDP versus 0.7 percent budgeted, in large part due to arrears from 2012, which came from unplanned expansion of agriculture

The 2013 budget overrun resulted mainly from higher expenditure on subsidies and wages, and domestic revenues that came in lower than budgeted

Table 1.1 Budget versus fiscal outturn, 2013

Percent of GDP, unless otherwise stated

	Budget	Outturn[a]
Revenue	21.7	20.9
Tax	17.9	17.7
Income taxes	9.0	8.1
Value-added tax	5.0	6.1
Excise taxes	2.1	1.9
Custom duties	1.7	1.5
Nontax	2.6	2.9
Grants	1.3	0.4
Expenditure	26.2	27.8
Current expenditure	19.0	21.2
Out of which wages and salaries	9.1	9.9
Out of which interest payments	1.7	1.8
Out of which Fertilizer Support Program	0.4	0.9
Out of which Strategic Food Reserve	0.2	0.9
Out of which fuel subsidy	0.0	1.3
Capital expenditure	7.2	6.6
Overall balance (including grants)	–4.5	–6.8
Financing	4.5	6.8
External (net)	2.9	2.2
Domestic (net)	1.5	4.7
Memorandum items		
GDP (millions of kwacha)	120,952	120,780

a. Preliminary figures assume 100 percent disbursement of external project financing.
Source: Ministry of Finance, IMF, and World Bank.

Increased issuance of domestic debt alongside rising inflation expectations have pushed up yields on government securities

subsidies. Specifically, expenditure booked to fertilizer subsidies under the Farmer Input Support Programme (FISP) was K1.1 billion, against K500 million budgeted, mainly because of clearance of arrears built up in 2012. And expenditure booked to FRA procurement operations and subsidies was K1.1 billion against K345 million budgeted. However, this booked figure does not include the commercial loans that the FRA took out in 2012 with the government's guarantees. The guarantees were called in 2013 but the outstanding amount (K1.4 billion) was rolled over by commercial banks and is expected to be repaid starting in 2014 (K600 million is set aside in the 2014 budget for this purpose). Fuel subsidies were not budgeted for but added K1.6 billion to the deficit as arrears built up until May 2013 when the fuel price was adjusted.

The government unexpectedly anchored salaries of its lowest paid employees on the cost of a basic needs basket for a family of five, which tripled their salaries from September 2013. The full effect of the salary increase, along with some other pay policy reform measures that saw salaries of all government employees go up, is expected to kick in mainly in 2014, with the budget projecting a 30 percent increase in the wage bill from 2013's outturn.

Revenue performance was below target by 5 percent due to lower collection of income tax[1] and lower receipts of donor grants. Domestic value-added tax (VAT) collection was 115 percent of the target because of lower refunds in the last quarter of 2013 (box 1.1).

Increased domestic financing and Treasury bill yields

To finance the higher budget deficit in 2013, the authorities sharply increased domestic bond issuance, borrowed from the BoZ using bridge loans[2] intended for cash management, and recalled unspent 2012 Eurobond proceeds from spending agencies. These funds are provisioned for in the 2014 budget. Overall, net domestic financing was slightly more than three times higher than budgeted, also partly due to lower than expected foreign financing.

Increased issuance of domestic debt alongside rising inflation expectations have pushed up yields on government securities. During 2013 the local currency debt of the central government is estimated to have increased

Box 1.1 Domestic VAT collection for 2013 and going forward

Zambia's VAT regime is based on the 1997 Value Added Tax Act. Under Rule 18 of this Act, exporters who want to claim a zero VAT tax rate on their exports have to produce several documents to substantiate their claim, among which are a certificate of importation in the country of destination and proof of payment by the customer for the goods. On January 11, 2013, Rule 18 was amended to include one more requirement that documentary evidence be provided to show that payment for the goods has been made into the exporter's bank account in Zambia.

Introduction of this amendment and stricter enforcement by the Zambia Revenue Authority of the rule itself starting in August 2013 (after several audits were conducted) led to lower refunds on domestic VAT for exporters, primarily mining companies. Several cases were brought before the courts, which have yet to be resolved. The authorities seem to have agreed to ring-fence the funds pending resolution of the disputed cases.

Source: Zambia Revenue Authority.

to K19,744 million (around 16.3 percent of GDP), from K15,409 million (14.5 percent of GDP). This debt stock is made up of Treasury bills (T-bills) with maturities less than 1 year (50 percent), government bonds with maturities up to 15 years (45 percent), and domestic arrears (5 percent). The weighted average yield rate for T-bills averaged 12.8 percent in 2013, up from an average of 10.8 percent in 2012. Similarly, the composite average yield rate of government bonds rose to an average of 15.4 percent from an average of 12.9 percent in the previous year.

Nonresidents' holdings of T-bills and of government bonds account only for 9.7 percent and 5.1 percent, respectively, of the total stock of T-bills and bonds in circulation (against 25 percent in Ghana and more than 40 percent in South Africa—both regional peers vulnerable to a sudden stop in external financing). Nonresidents' holdings of government securities (T-bills and government bonds) rose during 2013, suggesting that investors' risk appetite had not been affected by other global economic developments. However, worldwide financial volatility at the start of the year put pressure on currencies and asset markets in Zambia (along with South Africa, Ghana, and Nigeria) with short-term capital inflows falling sharply.

Difficult choices lie ahead to control the fiscal deficit

Zambia faces declining copper prices, prospects of slowing growth, and likely increasing borrowing costs in the near term. In these circumstances, continuation of the highly expansionary fiscal stance of 2012 and 2013 will hurt growth and make the economy more vulnerable to negative shocks. The government seems aware of the need to adjust. For example, the 2014 budget targets a fiscal deficit of 6.6 percent of GDP and some steps, discussed below, have been taken to contain expenditure. While its immediate priority would be to implement the 2014 budget as planned, particularly by staying within the planned net domestic financing target, a more aggressive reduction in the deficit would be needed in 2015 and 2016. But that is not going to be easy. Revenues are expected to rise only gradually as most revenue measures are geared toward increasing nontax revenues or improving tax administration, and so most of the adjustment burden will fall on expenditures. Four areas will determine success: agriculture subsidies, fuel subsidies, the wage bill, and public investment.

Four areas will determine success in fiscal adjustment: agricultural subsidies, fuel subsidy, the public wage bill, and public investment

In 2013 the government announced reductions in FRA and FISP subsidies. From 2014 it has decided to bring all FRA activities on to the central budget.[3] The aim is to tighten financial control of the agency following shortcomings noted in its operations in previous years. The government has also decided that the FRA will limit its procurement to a level that enables it to maintain a strategic grain reserve of 0.5 million MT. However, this policy is yet to be tested—going by past experience it will likely require strong political commitment. Also, preliminary figures for budgetary releases in January and February 2014 show that almost 60 percent of the budget allocation for the FISP for 2014 was spent in the first two months of the year, due to clearance of arrears from 2013, suggesting possible overruns later.

In April 2014 fuel prices were adjusted upward by an average of 8.3 percent, to account for the depreciating kwacha and the higher import price of oil.[4] The government has yet, though, to announce that prices

Public wage bill is set to grow further from 55 percent of domestic revenues in 2014

in future will be automatically adjusted to reflect changes to supply costs.

The wage bill is the largest expenditure item in the budget and therefore its size and trend have a heavy impact on the budget balance. The ratio of the wage bill to domestic revenue is about 55 percent in 2014. In 2013 the government also started implementing a pay policy reform where all civil servants were brought on to a single salary grade structure, which is likely to have further financial implications. As a temporary measure, the 2014 budget announced a wage freeze until end-2015 and a hiring freeze until end-2014. The authorities have a declared objective to reduce the wage bill to revenue ratio to 35 percent by 2018, but the trajectory has yet to be designed. Indeed, hard choices will be involved on wages and their structure to achieve the goal.

Public investment allocation was increased to 7.2 percent of GDP in the 2014 budget, up from 6.6 percent in the 2013 outturn. The government will need to find the right balance between frontloading infrastructure investment and achieving fiscal consolidation. This will most likely involve slowing down on road construction and prioritizing public investment projects.

Sound banking sector

Strong growth in private sector credit since 2009 has supported economic activity, but a sharp slowdown in the last part of 2013 coinciding with larger government borrowing might suggest crowding out of the private sector (figure 1.6). Absent fiscal consolidation, increased domestic financing of the deficit will prevent the private sector from accessing credit at lower cost. Domestic credit rose by 43.9 percent in December 2013 (year over year), mainly due to a rise in credit to government. Credit to the private sector, which includes households and private enterprises, also rose, by 10 percent.

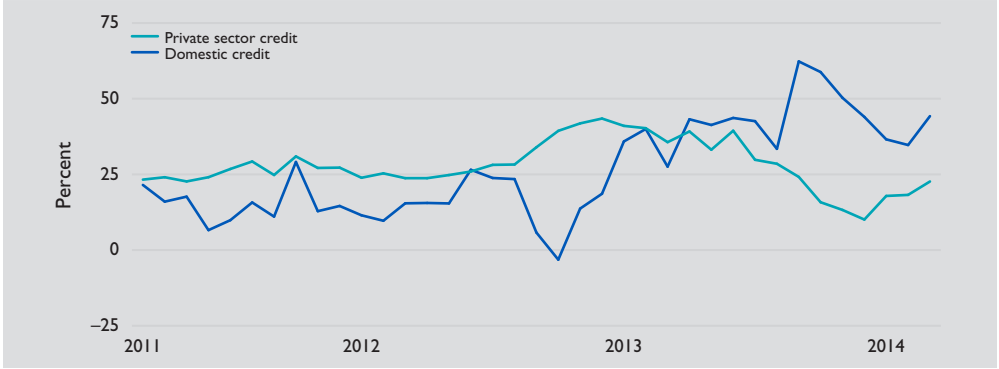
The banking sector, which has seen regulatory changes in the past two years (box 1.2), performed well in 2013 as several financial soundness indicators show (see annex table A3). As of end-March 2014, capital adequacy was stable at 26.8 percent (versus end-December 2013). Nonperforming loans (NPLs) as a share of total loans increased to 8 percent (from 7 percent in end-December 2013), and more than 70 percent of these NPLs were provisioned for. Liquidity indicators also improved, while earnings and profitability remained stable in the last quarter of 2013 and in the first quarter of 2014.

As of end-December 2013, the banking sector's total assets amounted to 33 percent of GDP. Loans and advances to customers, which account for the largest share of total assets, are mainly financed by deposits from customers, suggesting that the lack of bankable projects to finance and risk aversion could be the main constraints to financial intermediation.[5]

External reserves came under pressure

A shrinking current account surplus and a depreciating kwacha put pressure on external reserves. Zambia is a small open economy with a trade-to-GDP ratio (averaging above 72 percent since 2003) higher than the Sub-Saharan average. Despite increasing diversification of trade (World Bank 2013), Zambia's exports still heavily depend on copper, which leaves the country vulnerable to global copper developments. Policies toward greater

Figure 1.6 **Domestic and private sector credit growth**



Source: Bank of Zambia.

Box 1.2 Taking stock of the recent regulatory changes in the financial sector

In 2012 the BoZ revised the minimum capital requirements for banks to strengthen balance sheets. As of end-December 2013, 14 of 19 operating banks met the minimum primary capital requirements. Of the five others, one is set to convert to a nonbank financial institution, while the remaining four have been granted special approval for recapitalization plans that extend beyond the December 31, 2013, deadline.

Effective January 2, 2013, the BoZ introduced a cap on margins that commercial banks can add on the BoZ policy rate to determine the effective lending interest rate; at that time, interest rate caps were 18.75 percent for commercial banks, 30 percent for payroll lenders, and 42 percent for development-oriented microfinance institutions. These interest rate caps moved up along with the policy rate in 2014.

Effective March 10, 2014, the BoZ issued new statutory reserve requirements to manage the high liquidity in the banking system and support the kwacha. The reserve ratio has been increased from 8 to 14 percent.

Source: Bank of Zambia.

economic and trade diversification can mitigate this risk.

Preliminary data for 2013 indicate that Zambia recorded a current account surplus at around 1.2 percent of GDP, down from 3.9 percent in 2012 (figure 1.7). This decline stemmed from an increase in imports of goods and services (17 percent and 14 percent, respectively) relative to exports, a deterioration in the income account due to higher income on equity payments (126 percent), and lower official transfers, mainly budget support grants (42 percent).

The surge in goods and services imports came mainly from the governments' stepped-up investment in infrastructure along with the rise in foreign investment inflows, with imports of iron and steel, petroleum products, and electrical machinery and equipment rising the fastest. Imports of food items declined by 9.3 percent.

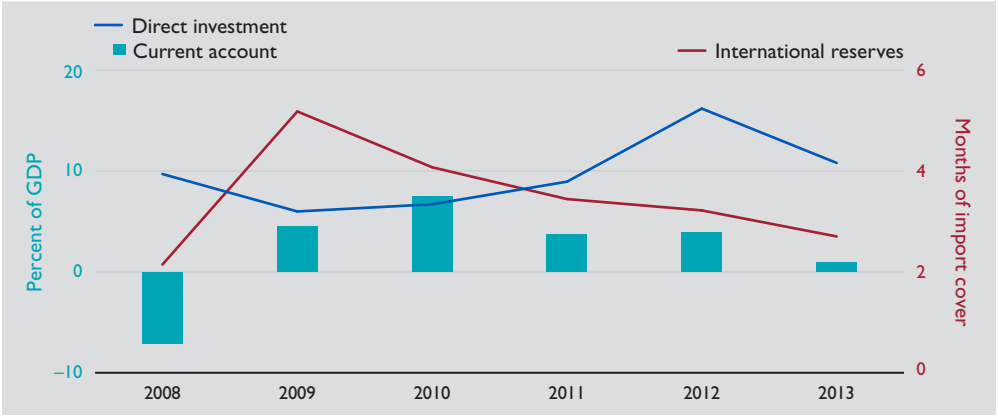
Merchandise exports grew by 13 percent in 2013, driven largely by growth in nontraditional exports (up 23 percent). Copper export earnings were 10.3 percent higher than in 2012, driven by higher export volumes even as the realized average copper price marginally declined.

In 2013 the financial account recorded a larger deficit than in 2012, mainly due to lower inflows of project grants and portfolio investment. Despite increasing in recent years, primarily in mining, net FDI declined in 2013 to $1.6 billion from $2.4 billion the previous year, as outward FDI became positive again. Conventional classification under the "other investment" category in the financial account shows mining companies keeping a large share of mining export proceeds abroad, which is recorded as a large outflow.

The kwacha depreciated against most major currencies in 2013. The slowdown in net portfolio inflows and market reaction to an uncertain policy environment (reflected by the downgrading of the sovereign rating by credit rating agencies) were likely the main drivers. In 2013 the kwacha depreciated against the U.S. dollar by 4.9 percent and the euro by 8.6 percent, while appreciating against the rand by 10.7 percent.

The slowdown in net portfolio inflows and market reaction to an uncertain policy environment were likely the main drivers of kwacha depreciation in 2013 and 2014

Figure 1.7 Current account balance, net FDI, and gross international reserves



Source: Bank of Zambia.

The government should strengthen its capacity to identify suitable projects, manage its debt portfolio, and develop a medium-term debt management strategy in light of its rapidly changing debt situation

Despite the BoZ's sales of foreign exchange to offset kwacha depreciation in January–April 2013, which cut international reserves, further depreciation came at year-end. And since end-December 2013 to May 9, 2014, the kwacha has fallen against the dollar by 17.4 percent and against the rand by 18.6 percent. In April 2014 the kwacha traded in an average range of K6.20/$ and K0.59/ZAR. While a weaker kwacha will make imports more expensive it might have a positive impact on competitiveness of non-traditional exports, especially agricultural products.

In line with the moves on the balance of payments and in the kwacha exchange rate, a decline in unencumbered gross international reserves was recorded in 2013, from around $2,457 million to $2,396 million (from 3.2 months of import coverage to 2.7 months). At the close of March 2014, unencumbered reserves declined further, mainly due to foreign exchange sales aimed at supporting the currency ($178 million was sold in March alone). Reserves have shot up recently from the proceeds of the $1 billion Eurobond.

External debt is still low but new risks are emerging given recent Eurobond issuances. At end-December 2013, total outstanding central government debt was estimated to have remained stable at 30.2 percent of GDP (from 30.3 percent in 2012).[6] Of that debt, 54 percent is domestic and in local currency (K19.75 billion). Borrowing from non-Paris club bilateral creditors has increased in recent years in response to the authorities' ambitious public investment program and its large financing needs. In April 2014 Zambia tapped the international capital markets for the second time by raising $1 billion through a Eurobond issue to finance the 2014 budget. However, this issuance had a higher yield (8.625 percent against 5.625 percent in 2012), reflecting cooling demand from global investors for emerging market debt as well as a less positive assessment of Zambia. The government has announced that proceeds of the 2014 Eurobond issuance will be used for energy and transport projects.

Rollover and refinancing risks are real in the future as investor risk aversion to non-investment-grade countries might increase, following the U.S. Federal Reserve's tighter monetary policy. This will especially be true if rollover periods coincide with times of heightened global financial turbulence or a depreciating kwacha against the dollar. The government should strengthen its capacity to identify suitable projects, manage its debt portfolio, and develop a medium-term debt management strategy in light of its rapidly changing debt situation.

Economic outlook: Increasing concerns in a challenging external environment

Among Zambia's trading partners, growth is projected to remain subdued in South Africa under the combined effect of policy tightening and infrastructure bottlenecks. China has set its growth target at 7.5 percent for 2014, and a rebalancing of growth drivers toward more reliance on consumption and less on investment is expected in the next few years. Slower growth in China and other emerging markets is expected to translate into lower demand for commodities, especially industrial metals. Relevant to Zambia, copper prices are projected to fall in 2014, by 5.9 percent in nominal terms and 6.4 percent in real terms, as supply continues to rise and demand remains weak. Weakening copper prices should be mitigated by a production increase but overall export earnings are set to remain subdued.

The medium-term outlook is for growth to stay robust, supported by domestic demand and the global recovery, but with real downside risks. Real GDP growth is projected to increase from an estimated 6.4 percent in 2013 to 6.7 percent in 2014 and to stabilize around 6.5 percent in 2015–16. Zambia's real GDP growth is projected to remain above the 5.0 percent average for Sub-Saharan Africa.

A major risk to the outlook is tied to the commodity market, as weaker demand and increased supply could lead to a sharper decline in copper prices. In particular, if Chinese demand, which accounts for some 45 percent of Zambia's total copper demand, remains weaker than in recent years and supply continues to grow robustly, copper prices could decline even more than in the baseline presented in this outlook, hurting Zambia's economy. With the current account surplus already narrowing, a more pronounced decline in copper prices will place greater downward pressure on the kwacha, which could push inflation higher. A major

slowdown in China's growth and lower copper prices would together weaken long-term foreign investment and growth in Zambia, given its strong dependence on copper.

Increased financial-market and capital volatility associated with the "tapering" of quantitative easing in the United States also remains a substantial downside risk. With global financial conditions tightening, short-term capital inflows have tumbled in Sub-Saharan Africa, suggesting changing investor sentiment to the region. South Africa, which has strong links with global financial markets, is particularly vulnerable to sudden stops of capital inflows given its reliance on portfolio inflows to finance its current account deficit. Zambia, which has seen robust portfolio inflows into its local securities markets in recent years, might also be affected by a reversal of capital flows.

More financial sector tightening has yet to come, pushing up borrowing costs and spreads for developing countries. If interest rates rise too rapidly or there are sharp pullbacks in capital flows, economies with large external financing needs or rapid expansions in domestic credit in recent years could come under considerable stress. Simulations conducted for the January 2014 *Global Economic Prospects* report suggest that a sudden 100 basis point increase in U.S. bond yields could lower capital inflows to developing countries by about 50 percent for several months, implying a significant increase in the cost of raising capital, which could lower investment and growth (World Bank 2014). Zambia has relied on favorable international capital flows with two Eurobond issuances to finance its fiscal expansion in the aftermath of the global financial crisis. It is therefore particularly vulnerable to a changing international environment and possible increase in benchmark interest rates and spreads.

Tightening global financial conditions may hit the Zambian economy if they are not managed well. Zambia is also more closely monitored now by international investors and policy mistakes could be costly, as evident from the higher cost of borrowing the second time when Zambia went to international capital markets. In the past two years several policy actions have been reversed primarily because their full implications were not thought through initially. This raises concerns about the process of policymaking and coordination in the government and creates uncertainty about how policymakers would respond to economic challenges in the future.

Zambia is vulnerable to a changing international environment and possible increase in benchmark interest rates and spreads

SECTION 2

Trade and Competitiveness

Zambia's shares in COMESA, Sub-Saharan Africa, and world exports grew during 2002–12

This section examines Zambia's trade performance in the past decade to identify areas of potential export growth and how the competitiveness of exporting and import-competing producers can be improved. The focus is on non-copper exports, in line with the country's development goal to diversify production. Apart from aggregate trade statistics reported at country level, the analysis draws on decade-long firm-level export transactions to understand the characteristics of exporting firms, particularly those that survive in the export market.

An assessment of trade performance identifies opportunities in non-copper exports that can be harnessed, with actions focused on reducing trade costs. It gets into the details of the high costs of crossing Zambia's borders, as well as actions being taken to reduce them. High border costs hurt particularly those exporters who depend on imported inputs, as they face these costs both at import and export stage. Some suggestions are made for policy direction to reduce border-crossing costs.

The section identifies agriculture and related products, particularly maize, as an emerging area for exports, and discusses constraints to faster growth, such as unpredictable trade policy and expensive subsidies. It offers suggestions on how policy can be made more predictable and what can be done to improve long-term competitiveness of agriculture.

It also examines why Zambian goods and service providers have been unable to benefit from growth in the copper industry in the past decade. It argues that improving the competitiveness of a local supply cluster is a long-term project whose main aim should be to increase value added by Zambian providers. This project requires close collaboration between buyers and sellers with a convening and supportive government role.

Performance on trade and competitiveness

Over the past decade Zambia's trade grew fast and underwent several structural changes that point toward opportunities. Exports grew at an average annual rate of about 25 percent (nominal) in 2002–12, for one of the highest rates in Sub-Saharan Africa. Zambia's shares in the Common Market for Eastern and Southern Africa (COMESA), Sub-Saharan Africa, and world exports grew during this period (figure 2.1). Imports grew similarly fast with an annual average growth rate of more than 20 percent (nominal) over the same period (figure 2.2).

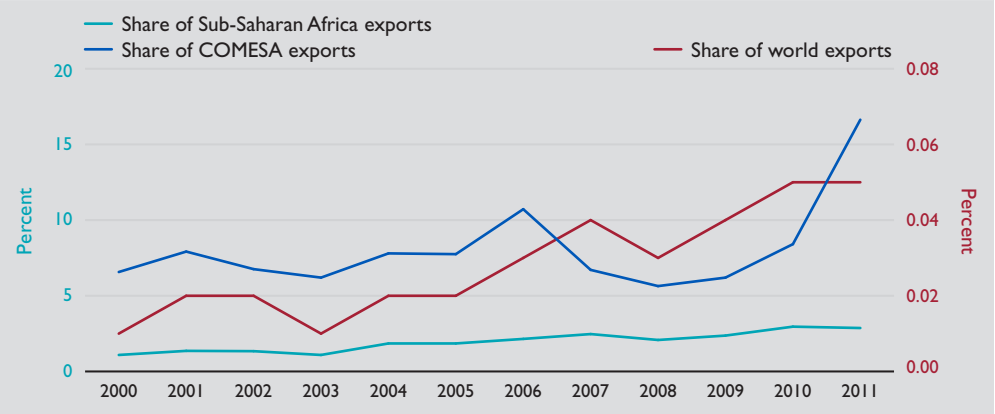
Zambia's trade during this period of growth exhibits several characteristics that indicate that the nature of trade has been changing in terms of composition and partner countries. At the firm level there are signs of considerable churning whereby an increasing number of firms are trying to export. These changes signal opportunities that could be tapped.

Six salient facts about Zambia's trade and competitiveness over the last decade

Non-copper merchandise exports have grown briskly alongside copper exports

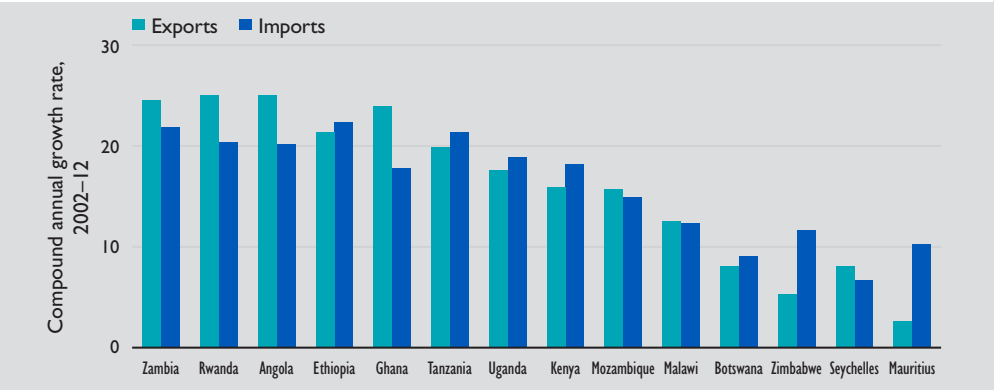
Copper exports grew at 29 percent a year in 2002–12, because of large increases in copper

Figure 2.1 Zambia's share of COMESA, Sub-Saharan Africa, and world exports has been growing



Source: COMTRADE/WITS.

Figure 2.2 Average annual growth of exports and imports in Zambia and comparators, 2002–12



Source: COMTRADE/WITS.

Zambia's non-copper exports have been growing, but the structure of exports still reflects the economic weight of the copper industry

prices until 2011 and higher copper production. The fast growth of copper exports, much in excess of GDP growth, took the share of copper exports to GDP from 14 percent to 30 percent. However, non-copper exports saw strong growth too at around 22 percent annually during the period. As a result, the share of non-copper exports in GDP increased from 12 percent to 16 percent, by value from $0.5 billion to around $3.2 billion (table 2.1).

Recent data indicate that several non-copper exports—such as electrical equipment and machinery, sulfur and related products, and residues from the food industry and animal feed—have had a higher average annual growth rate in value than copper since 2005 (table 2.2). Information presented later on exporting firms shows that non-copper exports are still unstable with a large number of exporting firms exiting the market every year. Yet there are some stable trends, as in gemstones, sugar, and products of the food industry, which are encouraging.

Non-copper exports are growing from a small base. Together, they contributed to more than 30 percent of merchandise exports in 2012, but individually none of these products commanded a share of more than 2 percent in total exports (except cobalt at around 4 percent and electrical equipment and machinery at 2.6 percent).[7] Therefore, the structure of Zambia's exports still reflects the economic weight of the copper industry. Besides dominating exports, it also strongly influences imports. In particular, increasing amounts of copper ores have been brought into Zambia for processing in recent years from the neighboring Democratic Republic of Congo, while imports of machinery and motor vehicles for extracting and transporting copper have also grown rapidly.

Agriculture exports have also grown fast in the past decade at an average of 27 percent a year since 2000 (figure 2.3). Agriculture import growth has been slower at

Table 2.1 Copper and non-copper merchandise exports, 2002–12

	Share of GDP (%)		Annual growth rate, 2002–12 (%)
	2002	2012	
Total exports	26	46	26
Copper	14	30	29
Non-copper	12	16	22

Source: COMTRADE/WITS, World Bank's World Development Indicators, and Central Statistical Office.

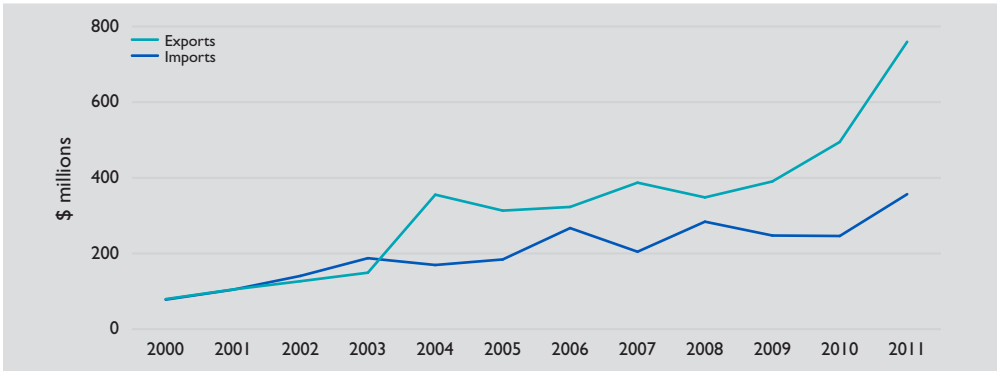
Agricultural trade surplus has been growing

Table 2.2 Export shares in 2012/13 and growth 2005–13, selected export lines

HS code	Product description	Share in merchandise exports, 2012/13 (%)	Annual growth rate, 2005–13 (%)
74, 2603,262030	Copper and related products	66.7	22
Non-copper exports, of which:		33.3	21.7
4,85	Electrical machinery equipment and parts thereof; sound recorders and so on	2.5	40.5
10,11	Cereals and products of the milling industry	3.5	31.1
71	Gold and precious stones	3	39.8
25	Cement and lime	2	41.2
28 (excluding 2822)	Sulfur and related products	2.4	103
23	Residue from agroindustry	1.1	73.8

Source: Central Statistical Office and World Bank staff computations.

Figure 2.3 Agriculture imports and exports



Source: FAOSTAT data.

18 percent during the same period resulting in a growing trade surplus. As described later, these data do not include the value of informal trade and so understate the real trade situation.

In agriculture, sugar, tobacco, wheat, and soybean exports, as well as maize, have made substantial gains. Zambia has long been a major exporter of sugar and tobacco, but the country is increasingly self-reliant in wheat and soybean cake with growing surpluses available for export. Most wheat and soybean exports leave Zambia as milled flour and manufactured stock-feed, respectively, so they are important for value addition and downstream job creation. Tobacco has likewise experienced strong growth in recent years with flue-cured and burley tobacco currently benefiting from very high prices. Until recently, the maize sector has also done very well with a series of bumper harvests due to favorable weather conditions and heavy spending on input subsidies.[8]

Maize, maize flour, and maize bran grew from a low base to become a major agriculture export, accounting for roughly 19 percent of total agriculture exports from 2007 to 2011. In 2011 alone, maize and maize products accounted for 28 percent of all agriculture exports worth almost $208 million with industry insiders saying the total value was similar or even greater in 2012.

The number of exporting firms and exported products has grown, but exports have low survival rates

Firm-level customs data for 1999–2011 obtained from the Central Statistical Office and Zambia Revenue Authority show that the number of Zambian exporters increased from 232 firms in 1999 to 1,754 in 2011.[9] The number of destinations served by exporters more than doubled over this period, and the number of products exported increased fourfold over 1999–2011 (figure 2.4). Furthermore, while an average Zambian exporter shipped four different products and generated some $2 million of export revenue in 2011, the corresponding median values are considerably smaller, indicating a skewed distribution.

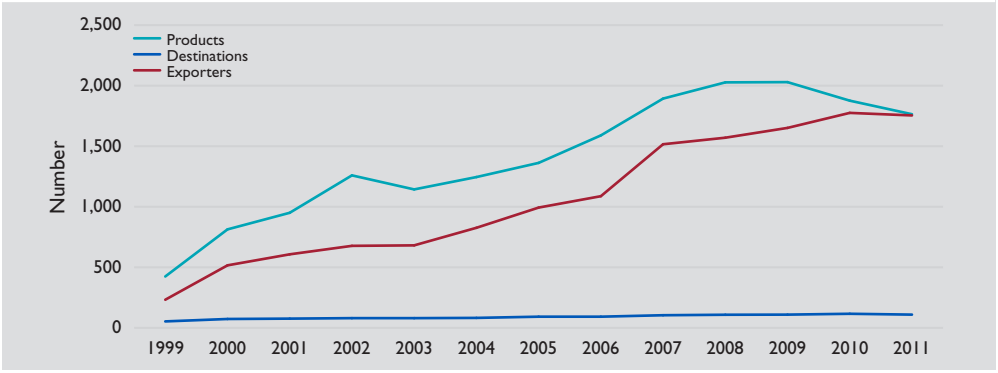
About 80 percent of export transactions in 2011 were with Sub-Saharan Africa. By value, the share of exports to Sub-Saharan Africa is 25 percent, indicating that individual transactions with the region are much smaller than those to other destinations—indeed, the average export transaction to Europe is almost 20 times larger (figure 2.5). This variation is driven by metals and mineral products. Machinery has the highest number of exporting firms and products among the broad product categories, but with very small transaction values, suggesting a large presence of re-exports (figure 2.6).

Exporting firms display high churning. Firm entry rates into exporting are near the international maximum, suggesting lively activity by Zambian firms trying to enter export markets. But these firms have a uniquely low export survival rate internationally (box 2.1).

A modeling exercise was carried out to identify firms' characteristics associated with their export survival (see annex B). The exercise shows that survival prospects are better for firms involved in bigger transactions and economically larger destination markets. Both destination country GDP and distance seem to have a significant impact on export survival, other things equal. These are essentially

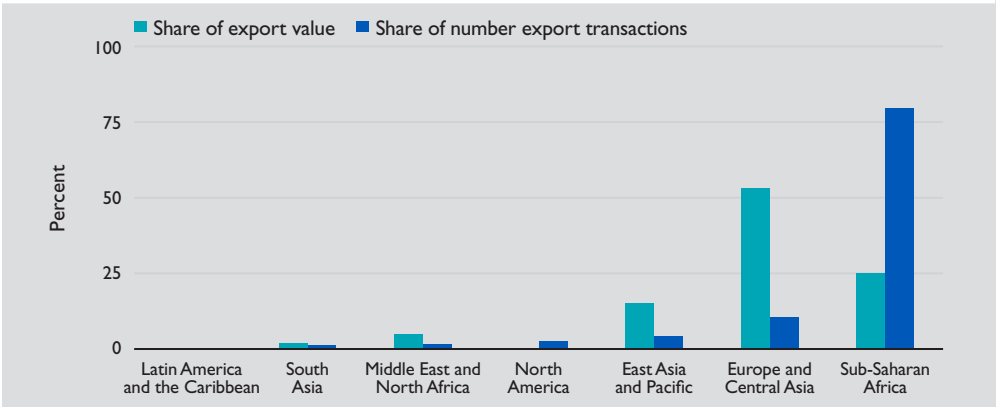
About 80 percent of export transactions in 2011 were with Sub-Saharan Africa, but they are much smaller in size than those to other destinations

Figure 2.4 **Number of products, destinations, and exporters**



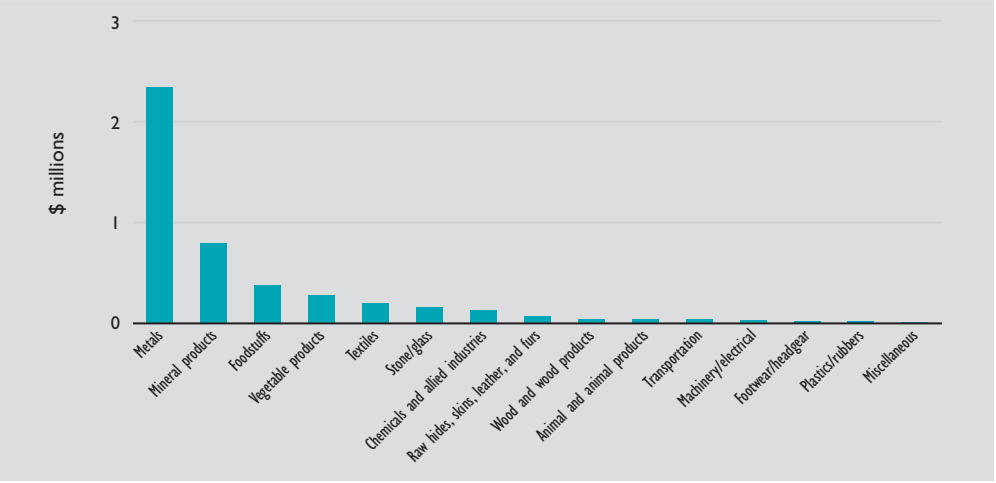
Source: Authors' calculations.

Figure 2.5 **Share of export transactions and value by destination region**



Source: Authors' calculations.

Figure 2.6 Average size of export transaction per firm by product exported



Source: Authors' calculations.

Exchange-rate volatility and problems related to the importing of inputs destabilize Zambian firm-level export spells

Box 2.1 Churning among exporting firms

For any 100 exporters in a given year, 50 have not exported in the previous year and 41 exit in the following year. Among the 41 who exit, 18 will never re-enter within the sample period. Some 65 percent of firm-level export spells last no longer than one year. Only 55 firms exported without interruption over the 13-year sample period.

There is somewhat greater stability at the product level than the firm level. At the product level, for any 100 exported products in a given year, 37 have not been exported in the previous year and 31 will not be exported in the following year. Among the 31, only 4 will never be exported again within the sample period. Of product-level export spells, 53 percent last no longer than one year. The most "unstable" categories are chemicals and textiles.

the firms that are exporting mineral products to European and East Asian markets.

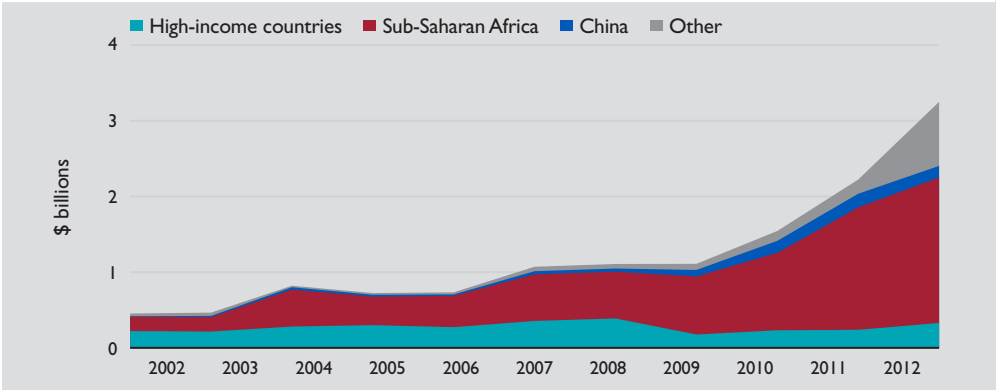
Interviews were conducted with selected firms engaged in exporting. Their business representatives brought up a number of constraints to exports, including financial frictions, exchange-rate issues, inefficient and costly services inputs (finance, electricity, or infrastructure), to the emergence of new international competitors, and political instability in destination markets. Two recurrent themes emerged: problems with unexpected exchange-rate movements, and impediments to importing inputs required for export production.

Analysis confirms what many business people say: exchange-rate volatility and problems related to the importing of inputs destabilize Zambian firm-level export spells. The regression models for survival showed that exchange-rate volatility is indeed a driver of firm-level export instability (see annex table B1). For impediments to imported inputs, the results show that exporting firms that are also importers have more stable export patterns. However, in all cases, imported input intensity is found to increase export hazard rates significantly. This means that, other things equal, the more a firm relies on imported inputs, the more unstable its export spells become (see annex table B2).

Zambia is trading more with its regional partners, including through informal channels

Aggregate trade data confirm that Sub-Saharan countries have been a major and growing destination for Zambia's non-copper exports, while the value of exports going to high-income countries has stagnated (figure 2.7). Indeed, non-copper exports to COMESA and the Southern African Development Community (SADC) have grown faster than total exports over the last decade. The main products exported to Sub-Saharan countries include cereals, sugar, tobacco, gold, cement, cotton, soap, iron/steel, and chemical products. The main regional importers of Zambia's products are the Democratic Republic of Congo, South Africa, Zimbabwe, and Malawi. According to official records, Zimbabwe followed by Kenya, South Africa, Tanzania, and Malawi have been the

Figure 2.7 Destination of Zambia's non-copper exports



Source: COMTRADE/WITS (total less 74, 2603, 262030).

largest exports markets for Zambian maize, in that order. In practice, however, the Democratic Republic of Congo is widely regarded as Zambia's second most valuable maize market with large amounts of value-added maize meal going across the border informally.

Sub-Saharan countries are also the source of the majority of Zambia's imports, but their shares have decreased since the early 2000s while the share of imports sourced in non-African countries (such as China) has increased. South Africa remains Zambia's main source of imports, but imports of copper ore from the Democratic Republic of Congo, oil from Kuwait, and manufactured products from China have increased these countries' shares in total imports. Zambia's imports of Chinese manufactures consist mainly of engineering machinery, electrical equipment, and motor vehicles, as well as metal/plastic manufactures and textile articles to a lesser extent.

Zambia's official trade statistics underestimate actual volumes of trade with regional partners. This is because two-way, informal cross-border trade (ICBT) is likely to be considerable (box 2.2).

There is considerable two-way informal trade between Zambia and its neighbors

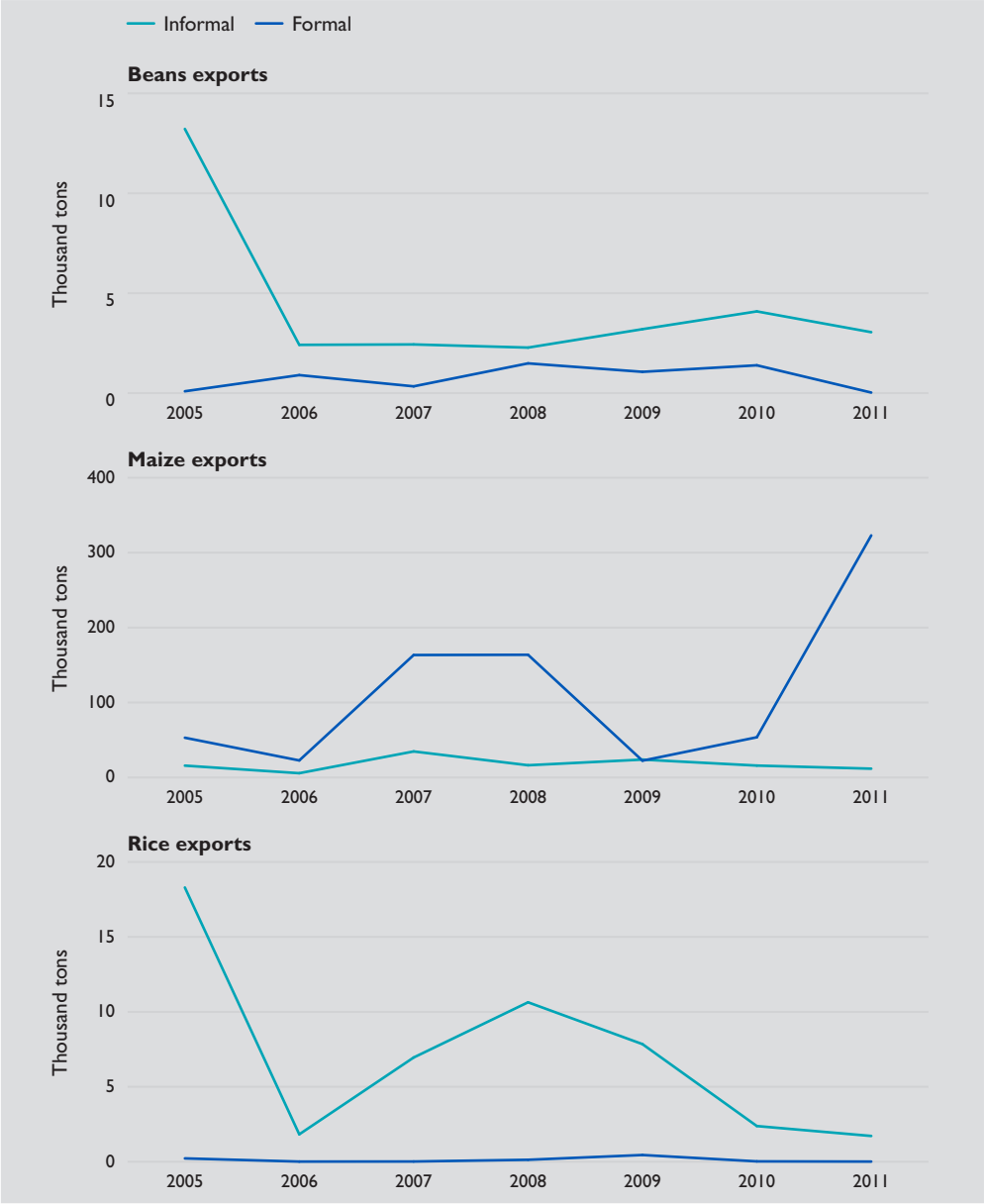
According to FEWS Net data, which covers ICBT of three major agricultural commodities (maize, rice, and beans), maize has the largest volume of informal exports (124,000 tons between 2005 and 2011, reaching close to 40,000 tons in 2009). Informal exports of rice and bean are fewer (50,000 tons of rice and 31,000 tons of beans in the same period) but still larger than the recorded exports in these commodities (figure 2.8). There are also unrecorded imports coming into Zambia from neighboring countries. Data collected by FEWS Net suggest that total informal imports of maize, rice, and beans amounted to 70,000, 11,000, and 9,000 tons, respectively, between 2005 and 2011.

Box 2.2 Data on ICBT

Attempts at capturing data on informal trade have been carried out in Zambia and other COMESA countries but there is still a dearth of comprehensive and accurate data on ICBT over long periods, which partly explains the relatively low profile of this issue among policymakers. Several complementary methods were elaborated in the 1990s to assess the magnitude and characteristics of ICBT. These include border monitoring, tracking of trucks and passenger buses, and stocktaking at open markets or warehouses, as well as surveys of different stakeholders. Several concrete initiatives using these methods to assess the magnitude of ICBT flows have since been launched in some African countries.

The most useful source on ICBT between Zambia and its neighbors is the monitoring initiative implemented by FEWS Net and the World Food Programme, which focuses on food security and therefore only covers three major agricultural commodities (maize, rice, and beans). Despite the limited coverage, this initiative has the major advantage of providing monthly data on informal export/import quantity and prices since 2005. The data accumulated shed light on the links between production and domestic/regional exchange patterns, but only capture trade flows at some border posts and thus fail to capture exchanges at nonmonitored posts or outside established border crossings, which are widespread at the porous border region between Malawi and Zambia, for example (Njiwa, Nthambi, and Chirwa 2011). For this reason, the figures should only be considered as rough.

Figure 2.8 **Zambia's beans, maize, and rice exports**



Note: Only the countries for which FEWS Net reports data for beans are included (Democratic Republic of Congo, Tanzania, Zimbabwe), maize (Democratic Republic of Congo, Malawi, Mozambique, Tanzania, Zimbabwe), and rice (Democratic Republic of Congo, Malawi, Zimbabwe).
Source: Authors' calculations based on FEWS Net and COMTRADE/WITS data for dried beans (code 05423), maize and maize meal (044 and 04721), and rice (042).

ICBT appears to be an income source for many small traders. Surveys carried out at selected border posts by the COMESA secretariat suggest that 20,000–30,000 small traders cross the border every month at Mwami/Mchinji (Malawi), 15,000–20,000 at Chirundu, and 12,000–13,000 at Livingstone/Victoria Falls (Zimbabwe) (Njiwa, Nthambi, and Chirwa 2011; Njiwa 2012).

Greater recognition and facilitation of small trade as well as more information on such trade are needed in Zambia. ICBT arises from opportunities available in small and short-lived price differences that develop in neighboring areas. By definition these opportunities are not systematic and large enough to be exploited through formal trade. In addition ICBT represents efforts to bypass regulatory measures and the costs of formal border crossing. Thus minimizing regulation and costs of border crossings should move trade into formal channels.

Zambian enterprises face high trade costs

Recent data on trade costs show that costs for agricultural and manufacturing products

from Zambia to key markets (China, Germany, Japan, United States) are consistently higher than those to neighbors (Tanzania, South Africa, Namibia, Botswana) in 2009 and 2010.[10] For agricultural exports, trade costs are also usually higher than those faced by companies in Malawi or Mozambique to reach global markets (figure 2.9). For Zambia to play a central role in regional markets and value chains and possibly emerge as a logistics hub for intraregional trade, given its central location (it borders eight countries), reducing trade costs is rightly a high priority.

Trade costs are high for several reasons. Delays at borders are one—and form a big part of trade costs. Despite attempts to reduce them, delays at borders do not appear to be going down. A note issued by TradeMark Southern Africa in 2013 showed, using GPS data, that average crossing time for imports at Chirundu increased from about 19 hours in the first quarter of 2011 to 33 hours[11] in January 2013 and that the share of trucks cleared within 12 hours fell from 57 percent to 28 percent over the same period. Average time for imports at Kasumbalesa (on the Democratic Republic of Congo border) stayed at around 46 hours over the same period. Average crossing times for imports at Nakonde (on the Tanzanian border) fell slightly from 109 hours in 2010 to 72 hours in April 2013, but remain high. While these crossing times include time in the queue, more recent data focusing more narrowly on border crossing times indicate that these have more than doubled at Chirundu and Kasumbalesa over the last year (figure 2.10).

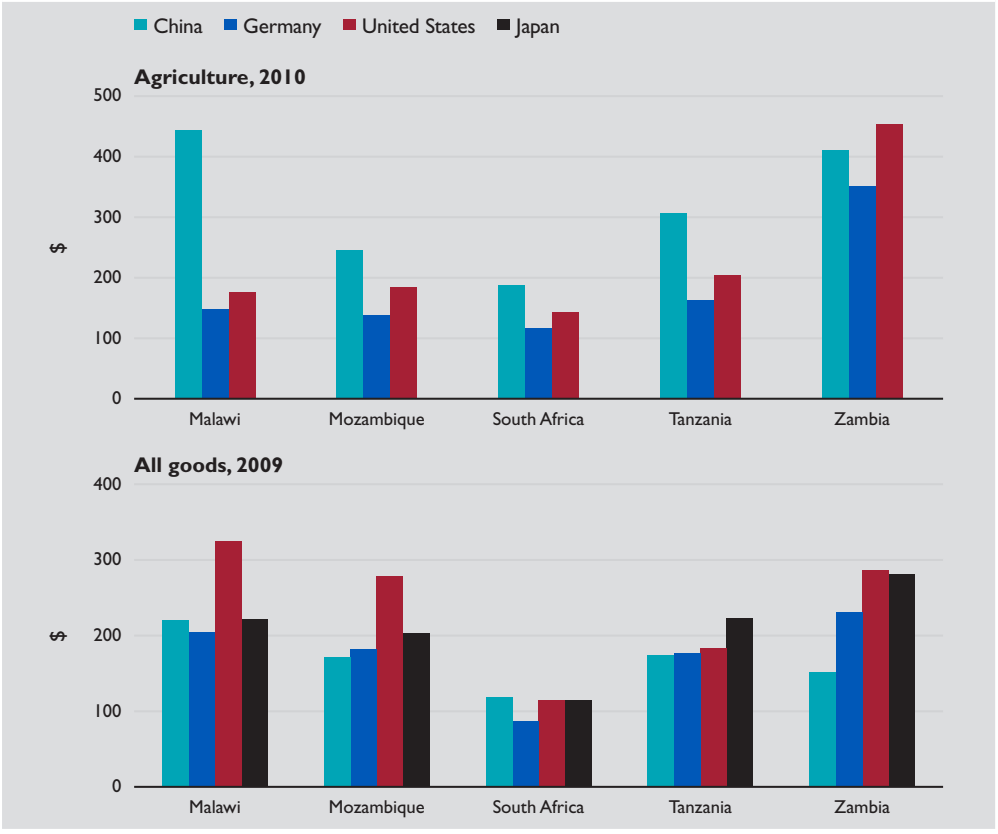
High border costs hurt small traders disproportionately. These costs are often a big share of the value exported, which could be hurting competitiveness of smaller firms with small transactions. Also small traders find it harder to navigate complex procedures.

High border costs hurt small traders disproportionately. These costs are often a big share of their value exported

Zambia has scope to expand services exports

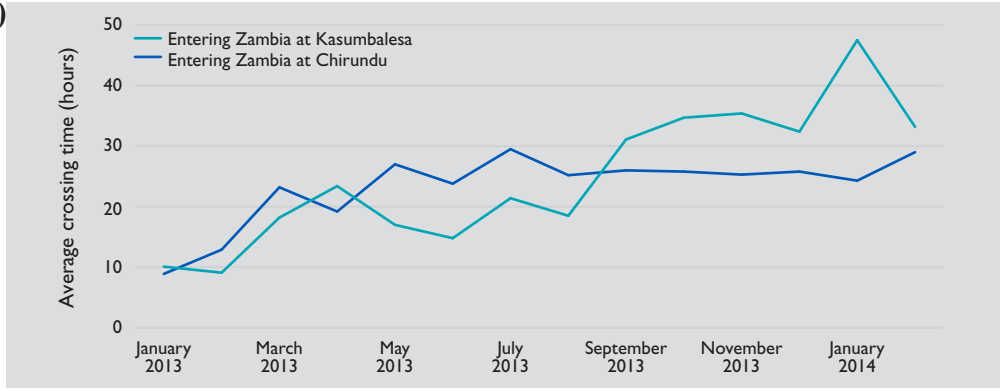
Zambia's trade in services has been declining as a share of GDP. Services trade declined to about 8 percent of GDP in 2010–12 from about 14 percent in 2000–02. Recorded services exports are relatively low ($375 million in 2011) and are mainly transport (46 percent) and travel services (39 percent).

Figure 2.9 Trade costs to key destination markets remain higher for Zambia than for its neighbors



Source: http://data.worldbank.org/data-catalog/trade-costs.

Figure 2.10 Border clearance times for imports have more than doubled over the last year

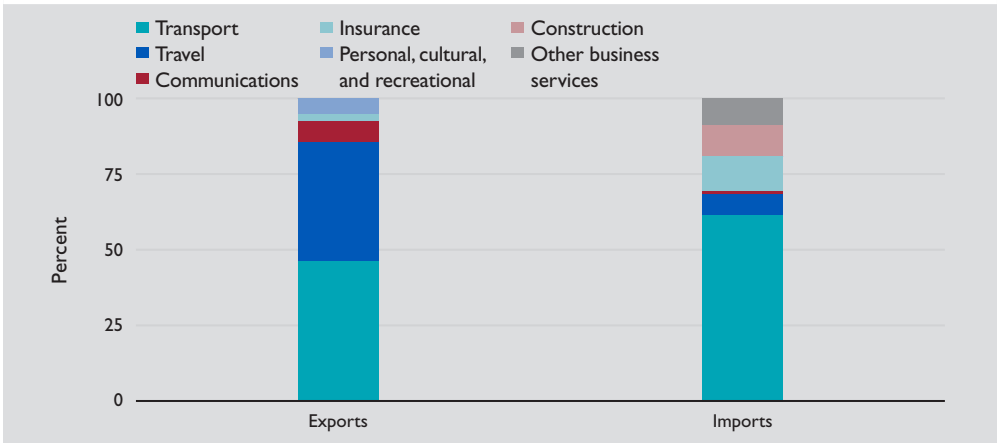


Source: www.tmsa.informationplatform.co.za.

Services imports are higher ($1.2 billion in 2011), with transport services forming the bulk (60 percent) and construction, insurance, and other business services the rest (figure 2.11).

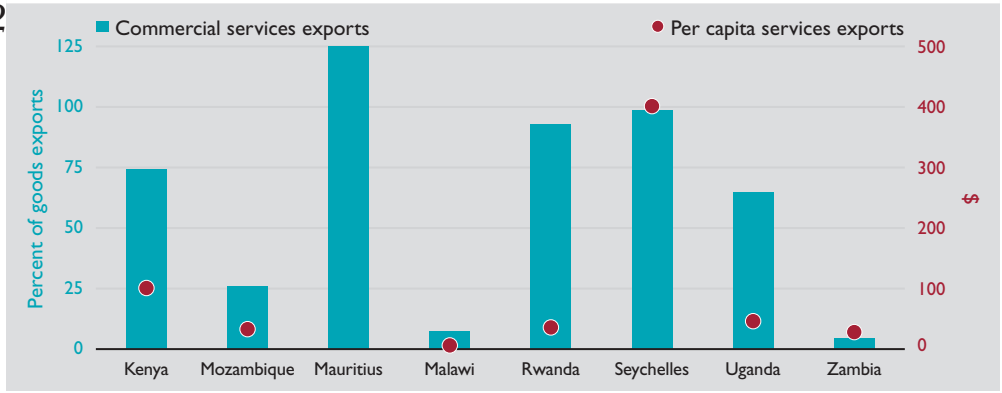
Zambia's services exports are low on several metrics (other than share of GDP). For example, the ratio of commercial services exports relative to goods exports is below 5 percent and is the lowest among selected comparators (figure 2.12). In comparison, exports of services to goods exports are more than 60 percent for Uganda, Kenya, and Rwanda. At the extreme are Mauritius

Figure 2.11 Structure of services trade, 2011



Source: UNCTADSTAT.

Figure 2.12 Services export metrics, 2009–11



Note: Mauritius's per capita services exports at $2,500 are not shown.
Source: World Development Indicators.

and Seychelles where the services exports to goods exports ratio is 100 percent or more. Zambia's per capita commercial services exports are also extremely low (below $50) as in most other comparators except Mauritius and Seychelles.

Zambia's services exports are, however, growing briskly—particularly for modern services exports. Business surveys undertaken in 2012–13 in Sub-Saharan Africa reveal that about 18 percent of the interviewed firms in Zambia already export professional services (figure 2.13). There is potential for Zambia to further grow exports in education and professional services within the region. For example, more than 80 percent of the professional services firms in the country interviewed as part of a World Bank–COMESA project export to at least one country within the Sub-Saharan region. Also, Zambia is considering replicating the positive experience of the Kafue Gorge Regional Training Centre that offers specialized training in hydropower station operations to Sub-Saharan countries for other technical subjects.

The fragmentation of regional markets for professional, education, and health services by restrictive policies and regulatory heterogeneity prevents Zambia from fully benefiting from exports and imports of services. Opening regional boundaries and establishing mutual recognition agreements (MRAs) would help raise Zambia's exports of education and professional services to its African partners and relieve temporary shortages in crucial sectors such as health. The free movement of COMESA/SADC nationals without work permit requirements would be of great help to increase business opportunities within the region and boost service exports. Regional discussions in Southern Africa on MRAs in professional services are in a very preliminary phase. Interested countries could learn from East Africa's experience with MRAs in accounting and architectural services.

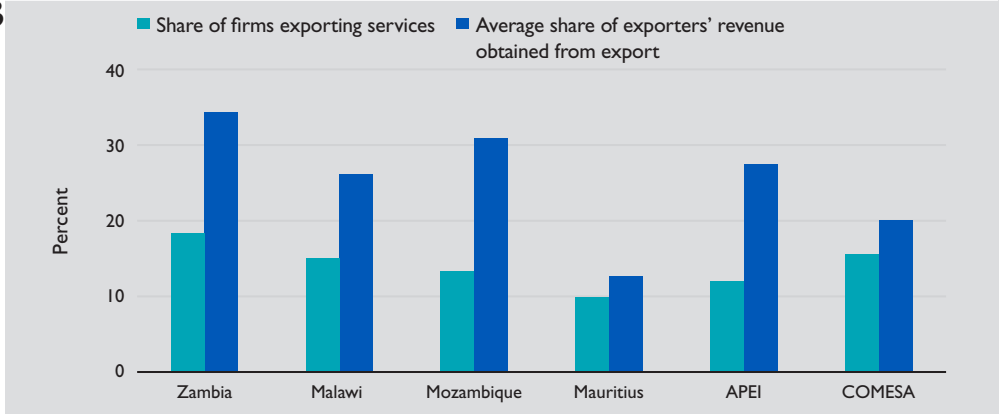
Zambia has scope to improve competitiveness of mining-related goods and services

Zambia's copper mining sector has expanded strongly in the past decade. This has created new opportunities for local suppliers. Several multinational companies have invested in plant rehabilitation and expansion and new copper extraction and refining projects. This has expanded demand for mining-related goods and services. Tapped into effectively, such demand could contribute to economic growth, jobs creation, skills and entrepreneurship development, and technological upgrading.[12]

The volume of locally sourced goods and services by copper mines is large but the share of Zambian suppliers is quite small. Accurate data are lacking on the value of local procurement by Zambia's copper mining sector, but a study prepared in 2012 estimates local sourcing to amount to some $2.5 billion, comprising equipment and mining services (35 percent of total expenditures); consumables, parts and components, and maintenance (40 percent); low-tech manufactured goods (5 percent); and basic services (20 percent) (Kasanga 2012). These were supplied by locally based international suppliers of goods and services (80 percent),

The fragmentation of regional markets for professional, education, and health services prevents Zambia from fully benefiting from exports and imports of services

Figure 2.13 **Exports of professional services from Zambia and selected comparators**



Note: APEI is Accelerated Program for Economic Integration.
Source: World Bank surveys of professional services in COMESA in 2013.

overseas suppliers (16 percent), and locally based Zambian suppliers (4 percent).

Growing Zambia's agriculture trade

Zambia could become a major food exporter to Eastern and Southern Africa.[13] Relative to other countries in the region, it has an abundance of water and fertile land and a generally favorable climate for agricultural production. Compared with many African countries, it already has a well-developed agribusiness sector with more than 400,000 smallholder households linked to private firms through vertically integrated outgrower programs primarily for cotton and (less so) sugar, tobacco, and soybeans. Large commercial farms and estates also play an important role in Zambian agriculture and account for the bulk of exports of sugar, tobacco, wheat, horticulture products, coffee, and soy.

In 2011, the costs of meeting regulatory requirements for maize exports and crossing the border at Kasumbalesa came to 15 percent of the farmgate price

Zambia is generally surrounded by countries with large maize deficits. Until recently, South Africa was the main supplier to these deficit countries, but now produces mainly GMO maize and has shifted to supplying other buyers outside Africa. The reorientation of South African maize exports combined with substantial maize deficits in much of the SADC region and in East Africa provides an important strategic opportunity for Zambia to assert itself as a grain basket for Eastern and Southern Africa. To do this, however, Zambia requires a combination of improved transport links, predictable trade relationships, and other policies that encourages both large commercial and smallholder farmers to intensify production.

Constraints

High regulatory costs

For all types of agriculture commodities and farm inputs, Zambia encounters a wide variety of requirements that make trading difficult and expensive (box 2.3). Phytosanitary and other regulations serve legitimate purposes, yet in practice there are frequent institutional overlaps whereby traders are often required to obtain certificates for the same or similar things from different agencies and to submit their goods for duplicate inspections. In some cases the certificates traders are required to obtain do not even correspond with actual buyer requirements, leading to complaints from the private sector that the process is more about raising revenue for the certifying body than regulating trade.

Looked at individually, regulatory costs may not appear large but add up quickly for exporters. In 2011, for example, the costs of meeting regulatory requirements and border fees for formal sector maize exports to the Democratic Republic of Congo at Kasumbalesa came to around $1,136 for a 30-ton truck (see annex table C1). On per-ton basis, this cost was equivalent to 15 percent of the Zambian farmgate price for maize. Such high costs not only hit exports but also cut into the profits available to farmers. Streamlining trade regulations, therefore, is important for improving export competitiveness in agriculture and boosting rural incomes.

Unpredictable trade policy and FRA interventions in the maize market

Zambia has a long history of unpredictable agriculture trade restrictions and outright bans. This particularly concerns maize, which is inherently vulnerable to drought and subject to many political pressures as the main smallholder crop and daily staple for almost the entire nation.[14] Zambia has also used import bans to protect local wheat growers and, at various times, has imposed trade restrictions on soybeans, poultry, pork, beef, and other strategic commodities. These restrictions are often unpredictable but typically placed on imports to ensure that domestic production is consumed first and on exports during bad harvest years to protect self-sufficiency.

Trade restrictions have the seeming benefit of keeping domestic prices low, but there is considerable documented evidence to show that trade restrictions contribute to food price volatility that typically hurts the poorest members of society most (Jayne and others 2008; Kagira 2009; COMPETE 2010; World Bank 2012). One good example is Zambia's 2005 maize marketing season when the country suffered a food shortage and import parity prices rose unnecessarily by more than $100 per ton, while the government decided how to respond and when to lift import restrictions (Mwanaumo and others 2005).

FRA interventions also directly affect the volume of maize available to the private sector for regional trade. While the Food Reserve Act of 1995 mandates that

Box 2.3 Regulatory requirements for agriculture trade

Trade permits. Each vehicle carrying agriculture produce into or out of Zambia must carry an original trade permit issued by the Agribusiness Unit of the Ministry of Agriculture and Livestock (MAL). The actual cost of a trade permit is relatively modest at only K35 each. Permits, however, are only valid for 30 days and the exporter must be registered with the Zambia Revenue Authority, thereby excluding very small traders from the legal system. Moreover, until recently, exporters needed to specify the vehicle registration number and trailer number, which in turn were recorded on the trade permit. If the designated vehicle suffered a breakdown before it reached the border, this meant the permit could not be used and a brand new one had to be applied for and issued by MAL. Longer term, traders also say the unpredictability of whether or not trade permits will be issued is an even bigger problem and major deterrent to private investment and forward contracting. Often it is not clear whether trade permits are available, and even when there is not a formal trade ban, importers and exporters complain that the lack of transparency lends itself to cronyism and rent seeking.

Phytosanitary certificates. The use of such certificates is a normal and well-established part of agriculture and food trade, whereby exporters are required to demonstrate compliance with the importing country's phytosanitary declaration conditions. In Zambia these certificates are issued by the Plant Quarantine Unit at the Zambia Agriculture Research Institute (ZARI) and cost K15.50 each plus a K54 fixed rate for inspection. Although this part of the trade process was said to work well with ZARI able to issue phytosanitary certificates from branch offices close to major borders, the permits are valid for only 15 days and often require various types of testing, treatment, and certification that cannot be done in branch locations. On top of the official charges, exporters also say they are routinely asked to collect phytosanitary inspectors from the ZARI offices and provide transport to where the commodity is stored.

Non-GMO certificate. Most of Zambia's regional trade partners including Botswana, Malawi, Namibia, Tanzania, and Zimbabwe ask for non-GMO certification as part of the phytosanitary process. Private inspectors such as SGS and SOCOTEC used to be allowed to conduct non-GMO tests for trade certification, but this procedure has now been made the sole responsibility of the Pathology Unit at ZARI. Under the new system, designated non-GMO inspectors must draw physical samples for laboratory analysis that can only be performed at ZARI headquarters at Mt. Mukulu near Lusaka. Zambia does not allow any type of genetically modified seed into the country, but still requires non-GMO testing as part of certification. There is no fee for non-GMO certification except, as with phytosanitary inspection, traders say they must collect inspectors from ZARI to get the job done and even arrange to transport the sample to Mt. Mukulu if the grain is stored far from Lusaka. Traders also report they have been required to obtain non-GMO certificates for exports to South Africa even though South Africa is not a non-GMO country and certification is not part of the buyer's requirements.

Fumigation certificate. Like non-GMO certification, proof of fumigation is also required by most Southern Africa countries as part of the phytosanitary process. Fumigation for the purpose of trade can only be done by companies registered with ZARI and costs around K4.20 per ton. On treatment, the licensed fumigator will issue a certificate that is valid for 15 days and is required to obtain the phytosanitary certificate. If the commodity is not exported within the 15-day window, the trader may apply for a single 15-day extension. If, however, the commodity is still not exported after this time, it must be fumigated again even though the chemicals are effective for two or three months.

Quality analysis. Although Zambia does not require quality inspection of its agriculture exports, proof of compliance with Zambian standards is compulsory for several categories of agriculture import including animal feeds, maize flour, wheat flour, refined edible vegetable oils, and all types of fertilizer. Zambia does not recognize foreign quality certificates and importers are advised to send preshipment samples to the Zambia Bureau of Standards at least two weeks before the expected arrival date for domestic quality inspection.

Product registration and testing. Before being imported to Zambia, all types of seed, fertilizer, agrichemicals, and veterinary medicines must be registered with ZARI or another statutory agency. Registration trials can take several seasons and cost many thousand dollars that must be paid for by the importer. These trials are typically done to ensure a product is safe and effective. Once a product is approved, however, annual fees are also charged for re-registration. Each type of fertilizer, agrichemical, and seed that dealers plan to handle must be registered annually with the Zambia Environmental Management Agency at cost of K1,560 per product. In the livestock sector, each veterinary medicine, and even each different size vile, must be registered annually with the Zambia Medicines Regulatory Agency at a cost of K1,900 per product and with the Zambia Environmental Management Agency at a cost of K1,560 per product. On top of these fees, 2 percent of the invoice amount for all vet medicines is paid to the Veterinary Department as a screening charge. Given the duplicate and overlapping nature of these fees, importers and farmers' representatives alike have complained that the charges are more about raising revenue for the statutory agency than actual trade facilitation or consumer protection.

the FRA should protect the national food reserve, the FRA has grown to dominate the maize market, buying upwards of more than 80 percent of all maize sold by smallholder farmers in some years and, from September 2012 to May 2014, even being the only legal Zambian exporter of maize grain through government-to-government deals that were exempted from the statutory trade ban. The consolidation of maize trade in the hands of the FRA, with the risk of future price interventions and restrictions on maize exports, have made it impossible for Zambia to develop reliable trading relations with deficit markets in the region (box 2.4).

An improved policy environment will create incentives for agribusiness firms to invest in input supply and marketing systems

Over the long term, the lack of certainty over market access, together with the FRA's procurement and pricing policies, leads to farmers and the private sector making inefficient choices about production and investment. Until roughly the mid-2000s, large commercial farmers in Zambia were important suppliers of maize to the industrial mills but then switched to growing the crop mainly for on-farm use. Reasons for this change included FRA price interventions, prohibitions on commercial farmers selling to the FRA, and lack of assured access to regional parity prices and predictable futures contracts. Zambia has thus become increasingly dependent on rainfed maize from smallholder farmers to meet domestic demand and to provide possible surpluses for export. Policy uncertainty also deters productivity-raising investments by farmers and other investments by the private sector in input supply, crop storage, and food marketing. The FRA practice of buying from smallholder farmers at high, pan-territorial prices and offloading the maize to registered mills for less than the cost of procurement and storage has led commercial mills to pull out of the maize market and rely instead on the FRA as their primary source of supply.[15]

Conversely, an improved policy environment would create incentives for small or large producers to make on-farm improvements or for agribusiness firms to invest in input supply and marketing systems. With a clear commitment to allowing maize sector participants access to foreign markets, there would be good reason for established and emerging commercial farms to re-enter maize production. According to industry sources, these farms could produce a stable 300,000 tons of new maize including up to 100,000 tons of irrigated maize for early harvest that would not only provide the basis for export development but also create a buffer stock for domestic consumption in case of drought. Smallholder farmers would also benefit from clear market signals including timely and competitive payments associated with export development. Despite many challenges, recent experiences provide insight into the type of production arrangements and trading relations that could flourish in a more appropriate policy environment (box 2.5). While the recent decision to lift the 2012 trade ban is a step in the right direction, the unpredictability of maize pricing policies and potential for similar trade bans being introduced in the future continue to deter much-needed private investment.

High input subsidies hinder long-term competitiveness

The high level of input subsidies leaves the Ministry of Agriculture and Livestock (MAL) with few resources to develop long-term

Box 2.4 Are government-to-government transactions crowding out private maize deals?

Although government-to-government maize exports by the FRA were still allowed under the recent trade ban, very little grain was actually sold. The Grain Traders Association of Zambia reports that 150,000 tons were earmarked for export to Zimbabwe, but just 12,000 tons were exported and only 8,000 tons were paid for. Malawi was similarly allocated 30,000 tons by the government but only imported and paid for around 5,500 tons, while Tanzania was allocated 80,000 tons of which around 20,000 tons were taken and paid for. According to private grain traders, the poor performance of these deals is not an indication of lack of demand in neighboring markets but a result of the inability of foreign governments to pay. Private imports from other world producers continued to roll into Zimbabwe and other neighboring countries while Zambian maize earmarked for export sat idle and even rotted because of poor storage.

Meanwhile, because SI-85 allowed only government-to-government exports and exports by the World Food Programme, the FRA was prevented from selling the more than 200,000 ton surplus it held for export to private buyers who were ready and willing to pay.

Box 2.5 Emerging private sector relations in agriculture

Zambia has a long history of outgrower support for smallholder cotton, tobacco, and sugar that have not been affected by trade bans or price manipulation like maize. Contract farming arrangements have also started to emerge recently for smallholder groundnuts and sunflower. Notably under many of the better established outgrower programs for cotton, private firms such as Cargill and Louis Dreyfus/NWK (which recently bought Dunavant) have been providing input loans and extension advice for maize and soybeans as part of a "whole farm" approach—that is, with maize being the household food crop that can also be sold for cash and soybeans as a nitrogen-fixing legume. In the most recent 2013/14 season, Cargill procured roughly $12 million in fertilizer and maize seed that it distributed 45,000 farmers. NWK Agri-Services also provides inputs for maize and is further supporting a smallholder mechanization program that provides tractor loans to farmers that the grower can pay for through cotton, soybean, and maize sales.

Several other large private companies such as Afgri, CHC Commodities, Export Trading Group, Zamanita, and Zdenakie are also active in local commodity markets buying maize, soybeans, sunflower, and wheat from large-scale and smallholder farmers to supply breweries, stock feed manufacturers, oil processors, and other commercial users. Recent focus group discussions carried out by the Indaba Agricultural Policy Research Institute in Chipata, Katete, Choma, Monze, Mkushi, and Serenje found that farmers generally have favorable perceptions of corporate grain traders who are viewed as more trustworthy than local wholesalers and even the FRA in that the prices are transparent, scales are believed to be accurate, and payments are made immediately.

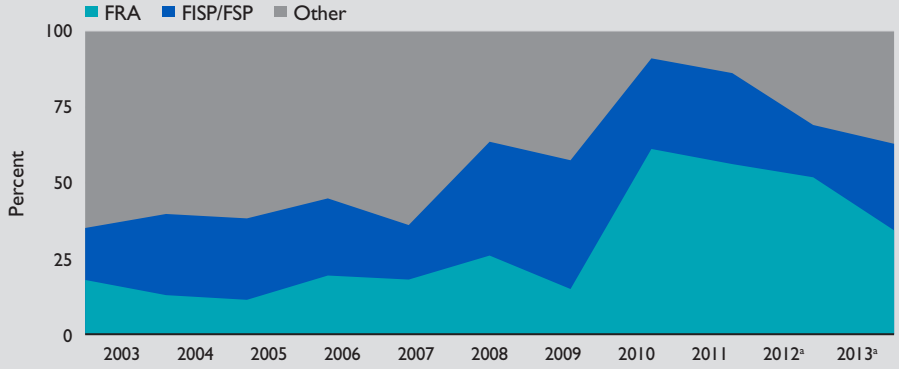
But output floor prices are not currently offered as part of private input arrangements for maize, thus putting significant price risk on the farmer. Private traders could guarantee floor prices through use of futures contracts traded on the SAFEX Commodity Exchange in Johannesburg, or even a revitalized ZAMACE exchange, but the risk of export bans and uncertainty of price interventions by the FRA makes this risky and impractical. If, however, grain traders were certain of being able to trade at export parity, or even sell to the FRA at export parity, these companies could hedge their contract positions to defray the price risk and in turn provide small farmers a guaranteed price.

FISP input subsidies are unlikely to have a lasting impact on agricultural output or competitiveness

competitiveness in maize. The FISP, which aims to provide "vulnerable but viable" farmers with subsidies for fertilizer and crop seeds, primarily for maize, absorbs, with FRA operations, more than 50 percent of the available budget for MAL. The FISP and FRA together reached 91 percent of total spending in 2010 (figure 2.14). Given the scope and scale of public spending on these programs, they have significant implications for MAL's role in developing Zambia's capacity to serve as a reliable maize exporter in the long term.

By themselves, FISP input subsidies are unlikely to have a lasting impact on agricultural output or competitiveness. These subsidies transform the profitability of supported crops, and support incentives to grow maize for participating households on a seasonal basis. FISP subsidies provide considerable cash savings and incentives to increase the area under cultivation.[16] Much has been made of the FISP's contribution to recent bumper harvests, and although Burke, Jayne, and Black (2012) find that 47 percent of the 2010 bumper harvest was due to favorable weather and not the FISP, 25 percent of the increase in 2010 is attributed to increased fertilizer use and 5 percent to increased hybrid seed use. Their analysis also shows that on average 23 percent of the increase was due

Figure 2.14 Percent share of FISP/FSP and FRA in total MAL spending, 2003–13



Note: FSP is Fertilizer Support Programme.
a. provisional.
Source: Indaba Agricultural Policy Research Institute's computation with MAL support (provisional).

to area expansion. Although the research does not look in closer detail at the reasons for area expansion, the savings on cash costs because of the FISP surely facilitated at least part of the area increase.

Analysis by the Indaba Agricultural Policy Research Institute also shows that the impact of the FISP on crop productivity is very low, at just 1.88 kg of maize per kg of subsidized fertilizer purchased by government. Reasons for this include problems with distribution of inputs to better-off farmers who would normally buy private inputs, distribution of Compound D basal fertilizer to all part of Zambia when other products would be more appropriate in some locations, and late delivery of inputs sometimes by several weeks or months (Burke, Jayne, and Black 2012; Mason, Jayne, and Mofya-Mukuka 2013). In 2010 a World Bank survey of five provinces found that maize yields per hectare were around 5 percent lower for households that used subsidized inputs against private inputs because of late delivery and delivery in quantities that were different from what the farmer was expecting (World Bank 2010).

Zambia would be in a position to export even if there were no maize subsidies

What if there are no subsidies? Zambia's underlying competitiveness in maize

A discussion of maize trade policy has to take into account the input and output subsidies provided by the government to the sector through FISP and FRA operations. Having invested heavily in subsidizing maize growing and mealie meal production, the government is keen to see that domestic prices remain low.[17] In the absence of physical limitations, open borders would lead, in theory, to domestic prices settling around export parity when there is a maize surplus and around import parity if there is a deficit. If free exports result in commodities being exported to neighboring countries for less than the total economic cost of production, it would be a welfare loss to the country. Therefore, a pertinent policy question while advocating for more open borders is whether Zambia would be in a position to export if there were no maize subsidies.

A practical way to look at this question is to consider whether the revenue Zambia earns from exporting is greater than the economic cost of producing, including the costs of subsidy provision, and whether exporting maize is financially profitable without the subsidies. To provide a framework, results from an analysis of the underlying economic efficiency and farm-level profitability of exporting maize to Zimbabwe were developed (box 2.6, with details in annex C).[18]

Large commercial farmers

Results of the analysis of irrigated and rainfed maize grown by large commercial farmers (LCFs) indicate that LCF growers are efficient in producing maize for export to Zimbabwe at economic parity prices (table 2.3). This is particularly true for preseason irrigated maize where the domestic resource cost ratio (DRC) of 0.33 is outstanding and indicates a very high degree of social efficiency. As expected, the DRCs increase as export parity prices fall throughout the season, but at a peak of just 0.51 for irrigated maize and 0.60 for rainfed maize the analysis still shows that LCF production is highly

Box 2.6 Domestic resource costs as a measure of competitiveness

The analysis covers large commercial farmers (LCFs) growing irrigated and rainfed maize in Central Province, and family farmers (FAMs) growing rainfed maize using high- and low-input management in Central, Eastern, and Northern Provinces. For LCF growers all transactions are based on private sector prices. For FAMs the analysis covers growers who use private inputs and subsidized FISP inputs and who sell to private traders and to the FRA.

Underlying competitiveness is measured by domestic resource cost ratios (DRCs). A DRC is a ratio of the domestic resources used to produce and market a unit of tradable commodity at economic prices to the foreign profits earned at economic prices. Therefore, when a DRC is less than 1.00 the system is socially efficient, and the lower the DRC, the greater the efficiency. But if the DRC is greater than 1.00 this is because the system consumes more domestic resources than the value of tradable output it produces, meaning the system is not efficient, and the higher the DRC, the greater the inefficiency or social loss.

To account for seasonal variation in export parity prices, the analysis covers four market scenarios: preseason exports of LCF irrigated maize when prices are highest; early-season exports of LCF and FAM maize shortly after the main harvest begins when prices start to drop; peak season exports when the market is flush with maize and prices are lowest; and long-season exports based on several months' of storage for export during the next rainy season when prices start to climb.

Table 2.3 **LCF competitiveness indicators**

	Preseason	Early	Peak	Long
LCF irrigated (10 mt/ha)				
DRC	0.33	0.39	0.51	0.36
Net profit ($/ha)	569.81	165.41	(404.79)	(12.19)
LCF rainfed (7 mt/ha)				
DRC	n/a	0.43	0.60	0.42
Net profit ($/ha)	n/a	130.59	(309.83)	(35.01)

Source: Authors' calculations.

competitive and has the potential to make very efficient use of domestic resources even when regional prices are low. The DRCs for rainfed maize are higher than for irrigated production, but at a range of just 0.42 to 0.60 are still highly attractive.[19]

On the financial side, however, the analysis points to important market risks in that private profits depend on exporting the maize quickly when regional prices are still high. Whereas irrigated and rainfed maize can be extremely profitable if exported early, the analysis shows there is not enough profit left in export parity to cover the farmer's costs and trader's margin once prices drop going into the main harvest season. Even with long storage under good private sector conditions, prices do not recover enough to provide farmers a financial profit at the assumed yields and prices. Therefore, if exports are delayed due to the unavailability of export permits or other trade bottlenecks, LCF maize can quickly become a loss-making activity despite being highly competitive and socially profitable for Zambia as a whole.

Family farmers

The picture is less clear for smallholders or family farmers (FAMs). In this case, many of the DRCs with FISP or FRA subsidies are above 1.00, indicating that export trade is socially inefficient once the additional costs of these programs are taken into account (table 2.4). All the DRCs involving private inputs and private sales are less than 1.00 and sometimes even indicate a very high degree of social efficiency. The financial profits for farmers in these scenarios are mostly quite low and sometimes even negative when 100 percent of the crop is sold for cash.

Closer examination of the FAM results reveals, however, strategic opportunities for smallholder maize to be socially competitive and financially profitable in regional export markets. The best DRCs for smallholder maize, for example, appear to come after several months of private sector storage when prices start to go up in the next rainy season. Financial profits from private sales are lower after long storage compared with early-season exports, but do improve substantially compared with transactions at peak-season prices when regional prices are low. Yet many of the DRCs with FRA storage are near or above 1.00 due to crop losses, excess overheads, and other managerial inefficiencies that have long plagued the state-owned marketing system.

The analysis also shows that smallholder production is more efficient with FISP inputs and private sector sales than with private inputs and FRA sales. Of the two subsidy programs, therefore, the FISP appears to be a more competitive and efficient way to support smallholder maize than pan-territorial pricing and state-run storage by the FRA. The worst efficiency scores, in fact, result from using FISP inputs and selling to the FRA, meaning that participation in both government programs is the least efficient option for Zambia from a social efficiency point of view, once the economic costs and returns from these programs are taken into account.

The data further show that a farmer's profits can be greater for private sales than for sales to the FRA in locations closer to the export market. In Central Province, for example, net profits are higher with FISP inputs and private sales than with FISP inputs and FRA sales except in the peak season when regional prices are low. In locations even closer to Zimbabwe than Mkushi, the incentives to sell to private traders would be even stronger. As seen in table 2.4, a different situation prevails in Eastern and Northern Provinces when the grain is valued at

Table 2.4 FAM competitiveness indicators

		DRCs			Net profit ($/ha)		
Inputs	Output	Early	Peak	Long	Early	Peak	Long
Central Province (Mkushi)							
FAM-high (2.6 mt/ha @ 4×4)							
Private	Private	0.60	0.76	0.58	79.49	(64.03)	37.27
FISP	Private	0.81	1.01	0.78	254.46	116.46	213.86
Private	FRA	0.80	1.06	0.86	26.67	26.67	26.67
FISP	FRA	1.02	1.33	1.10	203.67	203.67	203.67
FAM-low (1.4 mt/ha @ 2×2)							
Private	Private	0.73	0.92	0.71	0.75	(76.53)	(21.99)
FISP	Private	1.01	1.26	0.98	92.08	20.32	70.97
Private	FRA	0.96	1.26	1.03	(27.70)	(27.70)	(27.70)
FISP	FRA	1.26	1.65	1.36	65.67	65.67	65.67
Eastern Province (Chipata)							
FAM-high (2.7 mt/ha @ 4×4)							
Private	Private	0.62	0.80	0.60	14.77	(134.27)	(29.07)
FISP	Private	0.83	1.06	0.80	192.98	49.46	150.76
Private	FRA	0.84	1.14	0.91	47.39	47.39	47.39
FISP	FRA	1.07	1.42	1.15	224.39	224.39	224.39
FAM-low (1.95 mt/ha @ 2×2)							
Private	Private	0.53	0.67	0.51	62.74	(44.90)	31.08
FISP	Private	0.72	0.90	0.69	157.32	55.20	127.27
Private	FRA	0.71	0.95	0.77	86.30	86.30	86.30
FISP	FRA	0.92	1.21	0.99	179.67	179.67	179.67
Northern Province (Kasama)							
FAM-high (3.10 mt/ha @ 4×4)							
Private	Private	0.53	0.75	0.55	10.41	(186.15)	(65.37)
FISP	Private	0.77	0.99	0.74	166.66	1.06	117.94
Private	FRA	0.79	1.10	0.86	130.30	130.30	130.30
FISP	FRA	1.00	1.37	1.09	307.30	307.30	307.30
FAM-low (2.00 mt/ha @ 2×2)							
Private	Private	0.56	0.72	0.54	2.90	(107.50)	(29.58)
FISP	Private	0.76	0.96	0.73	100.96	(3.92)	70.10
Private	FRA	0.77	1.05	0.84	96.67	96.67	96.67
FISP	FRA	0.99	1.33	1.07	190.03	190.03	190.03

Note: Private yields shown, with FISP assumed 0.10 mt/ha less; yields at different levels of fertilizer use expressed in 50-kg bags of Compound D*50-kg bags of urea per hectare.
Source: Authors' calculations.

Zimbabwe export parity prices. In actual practice, however, grain from these locations would likely go to Malawi or Tanzania and so could still be more profitable at regional parity compared with selling to the FRA.

Options for enhancing agriculture trade and competitiveness

When one maps the way forward, several opportunities stand out. The analysis in this subsection shows that agriculture importers and exporters of all commodities face a number of high trade costs, lengthy procedures, and duplicate charges that undermine competitiveness. The trade policy, particularly for agriculture, is unpredictable, and combined with the FRA's interventions, it leads to inefficient decisions by farmers and the private sector on production and investment. High input subsidies could also be coming in the way of developing long-term competitiveness.

The basic premise of this subsection's analysis is that input and output subsidies, FRA marketing interventions, and agriculture trade policy need to be looked at in unison when developing an approach to long-term agriculture competitiveness. An important element is to provide a predictable policy environment for farmers and the private sector to make informed decisions. The recent decision to lift the recent export ban on maize, for example, is a step in the right direction but does little or nothing to

encourage long-term investment as long as the risk of future bans and other forms of price manipulation remain.

Reduce costs of regulatory compliance

The earlier discussion of trade requirements showed how many duplicate and overlapping procedures add to the costs of trade and undermine Zambia's export competitiveness. The worst effect of these charges is felt by small-scale traders for whom the charges are highly regressive and create incentives to engage in informal transactions outside the legal system.

To improve matters, dialogue at the national and regional levels on opportunities to streamline and eliminate unnecessary trade procedures would be a good practical strategy for Zambia. One obvious area for improvement would be to streamline the procedures for non-GMO certification. Zambia does not allow any kind of GMO seed to cross its borders yet requires non-GMO testing of all exports at Mt. Mukulu as part of its phytosanitary regime. In broader terms there could also be potential for transitioning to a spot-check system of GMO compliance. While some small quantities of GMO seeds may have entered the country illegally, there have not been any major interceptions of GMO crops, and random sampling of warehouses and grain storage depots could be a much less burdensome approach to meeting importer requirements than mandatory testing of all export consignments.

Requirements for product registration and testing could also be streamlined. Whereas government departments such as the ZARI remit their funds to the national budget, statutory agencies including the Zambia Bureau of Standards, Zambia Environmental Management Agency, and Zambia Medicines Regulatory Agency depend on the revenue collected to fund at least part of their operations. Traders and farmer representatives have therefore complained that the certification and registration requirements these agencies impose are more about revenue collection than actual trade facilitation. In the case of vet medicines, for example, having to register each product and even each different size vials with both the Zambia Medicines Regulatory Agency and Veterinary Office is redundant and the procedure could be streamlined.

Commit to open borders in a sequenced manner

The above discussion also showed that progress in agriculture expansion has been undermined by trade policies that limit market access and threaten to make private transactions unprofitable. Despite Zambia enjoying a strong economic comparative advantage in maize exports, problems with unpredictable market access and manipulation of output prices make trade risky and deter much needed private investment at all levels of the supply chain. A stepwise approach to open borders and genuine free trade could provide space for the government to develop confidence that greater private sector participation and less government intervention would allow critical food security goals to be met at the same time as maize exports grow. Such an approach would provide space for the private sector to develop necessary market infrastructure and commercial linkages, and enable the government to focus on providing other support services.

A stepwise approach to open borders could allow the government to develop confidence that greater private sector participation and less government intervention would allow critical food security goals to be met at the same time as maize exports grow

Step 1: Adopt forward contracting with the commercial farm sector. Zambia could almost immediately make a firm commitment to guaranteed export parity prices for a fixed amount of precontracted maize. With it, the Grain Traders Association of Zambia (GTAZ) and other exporters could contract with members of the Zambia National Farmers Union (ZNFU) to produce preseason irrigated maize that is not currently being grown and would come on the market two to three months earlier than rainfed production when local supplies are most likely to be scarce. This maize could be offered first to the government/FRA at export parity prices as a buffer for food security, and if it declines this option, export permits would be granted on a fixed date for regional trade through private channels. The GTAZ and ZNFU have said they could easily contract for 60,000–80,000 tons of "new" irrigated maize in the first season using spare irrigation equipment used for winter wheat. In following seasons, the GTAZ and ZNFU say it would be possible to contract for 100,000 or more tons of irrigated maize together with at least 200,000 tons of rainfed maize that is not currently being produced.

Such an approach does not mean the maize would be exported automatically. If Zambia were facing a deficit, domestic prices

would naturally rise above export parity, meaning the new maize would stay in the country. The additional production would help minimize local price swings to the benefit of consumers and the FRA's own price stabilizing mission.

Step 2: Expand export parity contracts to the smallholder farm sector. In the near future, export parity contracts could be extended to groups of smallholder farmers connected to outgrower programs and through the ZNFU's "Lima Credit Scheme" run by the Zambia National Commercial Bank.[20] Similar to forward contracting of commercial farmer maize, the idea would to guarantee a market-driven floor prices as an incentive for increased production. In well-connected farm areas, export parity prices are often greater than the FRA price, meaning this strategy could be a route not only to increasing farmer incomes but also to alleviating budgetary pressure from the FRA.

As with commercial farm maize, contracts could be structured in such a way that gives the FRA first right of refusal at a predetermined delivery date and price. If the FRA passes on the option because of good supply, the contracting firm would have the right to export the crop without restriction. Or, if domestic supply is tight and the food is required locally, the FRA could exercise its option to buy at export parity and enjoy considerable savings compared with having to import difficult-to-source non-GMO maize. Such an approach, therefore, would not only help make the market more predictable—to the benefit of farmers and consumers—but would also allow the government to manage food prices in a much more cost-effective way than holding physical stocks. In outlying areas far from regional markets, FRA prices are likely to be between import and export parity, and a case could be made for continuing FRA purchases there.

Step 3: Permanently open borders. Beyond the use of export parity prices in domestic contracts in the near to medium term, a final challenge to Zambia becoming a true "grain basket" is supplying physical stocks consistently. Guaranteed parity pricing, with the FRA having the first right of refusal, would do much to stimulate total production and improve national food security, but regional importers need to be certain of receiving food stocks. Simply put, for Zambia to become the supplier of first choice, there needs to be a firm and irrevocable commitment to keeping the country's borders open to maize imports and exports. While it is possible that food prices could sometimes rise sharply in the face of widespread regional shortage with permanently open borders, such pressures could be moderated through local forward contracts for physical delivery and even by taking a more pragmatic stance on possible import of GMO maize for human consumption during a true deficit, like Zimbabwe has done.

To improve long-term competitiveness in agriculture, there is need to support public and private investments that help farmers improve crop yields and expand farm size

Invest in long-term competitiveness

To complement moves toward guaranteed export parity pricing and eventually to permanently open borders, Zambia could take immediate steps to improve rural incomes and trade competitiveness.

There is need to support public and private investments that help farmers improve crop yields and expand farm size. The analysis of economic efficiency shows that investments in irrigation to allow a reliable early-season harvest as well as mechanization to let farmers cultivate a greater area could be good strategies to improve the profitability and efficiency of smallholder maize production. The government could also tailor extension messages for different parts of Zambia. Since well before economic liberalization, Zambia's extension services recommended farmers in all locations to apply four 50-kg bags of basal fertilizer (Compound D) and four 50-kg bags of urea top dressing per hectare (4×4 management as modeled at the high input level). However, this recommendation does not always provide the best financial profit or efficiency given differences in soil type and market access.

While the matter of how to improve the FISP's effectiveness is well beyond the scope of this Brief, the analysis points to the importance of making real progress in this area. Compared with spending on output marketing and into mill price manipulation through the FRA, for example, the analysis shows that subsidized inputs are more likely to benefit farmer income and trade competitiveness. One way to address the problem of

late delivery and improve access to subsidized inputs that are adapted to different locations, for example, would be the electronic voucher approach that has been promised by MAL for years. Opportunities also exist for private outgrower programs to play a larger role with input delivery and even the delivery of subsidized inputs that would help alleviate the logistical burdens of current arrangements, forge new market relations, and promote cost savings through increased private competition.

Policies that stimulate private investment in smallholder marketing depots and storage sheds would also be useful. Wholesaling firms have indicated that if export opportunities were predictable, significant investment would go into grain storage in the northern corridor, including Chinsali, Isoka, and Nakonde. These sheds would seek to tap into export markets in Kenya and the Democratic Republic of Congo, as well as domestic markets in the Copperbelt. The government has proposed to spend around K180 million to construct and rehabilitate public grain storage facilities across the country. Given the pent-up demand for private sector investment in storage under export parity conditions, and that high storage losses at FRA depots are not just a matter of poor infrastructure but also relate to poor management, these funds could likely be better spent on other public services including investments in farmer extension, crop research, and construction of new roads and bridges to better link farmers to markets.

Trade facilitation

Trade costs are high for several reasons. For seaborne trade, distances to ports are long even though enterprises have several options for ports, and there is little that Zambia can do about these distances. Also the scope for reducing freight rates on international trade routes is limited because they are already competitive. But there is considerable scope to reduce costs of crossing Zambia's own borders. For example, there are numerous procedural requirements at Zambian borders that act as bottlenecks and cause costly delays.[21] In 2009 the Federation of East and Southern African Road Transport Associations indicated that truckers spent more than 50 percent of travel time from Kolwezi to Durban at border crossings (TMSA 2012).[22] Zambia's performance is particularly poor on coordination among agencies, governance, and impartiality at borders, as measured by OECD Trade Facilitation Indicators, which rank it significantly worse than the Sub-Saharan average.

Efforts to improve customs and border management

The government is working to improve clearance times at borders, but its initiatives have not had their full impact yet

The government is already working to improve clearance times and border operations, but much more has to be done. Some of the initiatives undertaken include introduction of pre-arrival declarations and improved customs data management systems, elimination of preshipment inspection and replacement with destination inspection, strengthened risk management regimes, and one-stop border posts (OSBPs). But as discussed below, these initiatives have not had their full impact yet. Complementary actions need to be taken to get the full benefits. And an approach that gives priority to simplifying procedures, streamlining requirements, and improving governance before investing heavily in border infrastructure would be preferable.

Anecdotal evidence suggests that inadequate information about documentary requirements at borders can cause big delays. (The burdensome documentary requirements for agricultural products were discussed earlier.) Equally important, there is not enough readily available information on which documentary requirements have to be met for what products. Changes to these requirements are frequent and it is difficult for enterprises to keep track. Where documentation is inadequate, goods can be held at a border until traders can present the paperwork—often obtained only in Lusaka. Information about all documentary requirements could be made more readily available in one place, reducing the number of cases where goods have to be held at the border. Restricting the individual powers of ministries to change the requirements at short (or no) notice could increase the predictability of trade operations. The recently revised Technical Regulations Framework aims to achieve this, but has yet to be implemented.

Introduction of pre-arrival declarations has led to faster clearance at borders but

faces some constraints. With such declarations, trucks no longer wait while processing their documents when exiting Zambia. The private sector attests that pre-arrival declarations have had a big impact on reducing clearance times. However, truckers often do not manage to submit preclearance documentation in time, partly because the truck registration number needs to be part of the submission (for the temporary export of the truck). This requirement does not allow large logistics companies to submit preclearance enough in advance as they often do not know which truck will carry which trailer with the goods, due to fleet management demands, until they leave the depot.

A comprehensive but prioritized approach covering IT and procedural reforms besides infrastructure is needed to improve border performance

The Zambia Revenue Authority introduced an improved customs data management system, ASYCUDA World, in late 2013 to speed up customs procedures, but so far the impact has been limited. Selectivity parameters that will be included in the system to allow risk-based targeting of inspections are expected to allow better risk management and decentralization of valuation decisions, leading to faster clearance. Such a system would also reduce the scope for parallel processes and rent extraction. However, there are concerns that introduction at four border crossings has initially led to longer clearance times for some shipments because connectivity for the Internet-based system is proving an issue. There are other operational weaknesses that relate to delays in RTGS payments and expanding the electronic payment system to other banks. The situation is likely to improve as users get more accustomed to the new system and as Internet connectivity improves.

OSBPs at Zambia's main land border crossings have been the most visible policy change.[23] Their introduction has received much attention globally, though the experience at Chirundu is mixed, as reflected in the opinions of border-post users. Among official circles, the Chirundu OSBP is a great success, and serves as a model for the nationwide program to convert all major border posts into similar operations. This group stresses reduced border clearance times despite increased traffic. The private sector, by contrast, attributes the time reduction to other measures such as the introduction of pre-arrival clearance facilities that the authorities launched at the same time.

Despite significant improvements, the border is effectively far from being a "one-stop" border post as coordination across the border remains limited, documentation is still processed twice, and data entered are not shared between the two countries. Traders also need to use two freight forwarding agents, one in each country. This points to the need for regulatory reforms and the high potential for further improvements.

To reduce delays an OSBP must be accompanied by simplified procedures at the borders. The conditions for success are simple, but experience shows that they are sometimes difficult to fulfill. The main challenges are related to architectural design, clarity of procedures, and their implementation. Close coordination is needed to detect fraud, while the legal framework needs to allow arrests of offenders and prosecution of cases without violating either country's laws. Therefore it is important that procedures between the countries are harmonized and simplified. Bilateral agreements should be flexible enough to allow for adjustment to local conditions and to change over time. To realize full benefits of an OSBP, it is important that procedures are simplified and implemented well; there is full use of information technology (IT); there is transparency and shared intelligence; staff are properly trained; and there is overall effective change management of the border facility for all stakeholders.[24]

A comprehensive but prioritized approach covering IT and procedural reforms besides infrastructure is needed to improve border performance. This Brief recommends that procedural reforms be given priority over the physical development of new OSBPs. This sequencing will ensure that streamlined procedures inform the physical layout and flow of goods, instead of locking outdated procedures into physical layouts that will be more difficult to correct later.[25] The private sector makes the same point, arguing that there is a risk in focusing too much on the border post facilities and sitting arrangements and overlooking other critical streamlining measures. Procedural reforms will increase central control over operations at borders and reduce opportunities for corruption as processes become standardized. Therefore, they are likely to be resisted by those currently benefiting from existing arrangements. Also these

reforms are less visible and thus less attractive politically.

The need for a prioritized and balanced approach is particularly relevant at crossing points where OSBPs may take time to be introduced, as with the Democratic Republic of Congo and Angola. The Kasumbalesa border with the Democratic Republic of Congo suffers from congestion with long queues of trucks extending for several kilometers, even though infrastructure on both sides of the border is quite modern. Recent research indicates that a key factor in these delays is poor cross-border coordination, which prevents the border post from handling higher volumes in a timely manner. Some recent changes have been made (for example, a single window with parallel processing of all paper work) that could have positive impact, but more reforms are needed.

Since 2011 the government has been working to set up a framework for coordinated border management. This framework identifies the Zambia Revenue Authority or the Immigration Department as possible lead agencies. One of these will, at each border post, direct and coordinate the activities of all agencies in their operations with traders. However, despite lengthy discussions, the Border Management Bill, which will establish this framework, has still not been submitted to Cabinet—stakeholder consultations continue. Following approval by Cabinet it would be sent to the National Assembly for consideration and enactment—and would then have to be implemented on the ground, likely a huge task in itself.

Improving border processes depends not only on border officials but also clearing and forwarding agents (CFAs). There are more than 1,600 CFAs, and 30 freight forwarding companies handle more than 80 percent of traffic. Data for 2007 show that Zambian clearing agents generated far longer delays than their Zimbabwean counterparts at the Chirundu border post—both for northbound and southbound traffic. Many CFAs are said to be poorly trained, and to submit declarations with high rates of inaccuracies or (perceived) fraud, leading to a lack of trust between border agencies and CFAs and so higher rates of checks (absent a functioning risk management scheme), costs, and delays. It is therefore important to establish and enforce a proper scheme for accreditation that ensures minimum qualifications and professionalism among CFAs, which will also help any risk management system function.

Can Zambia become a regional logistics hub?

With its central location in Southern Africa, bordering eight countries, Zambia is particularly well positioned to establish itself as a logistics hub as regional supply chains emerge and trade flows increase. There is a feeling in the country that Zambian truckers—a very distinct group—should be able to benefit from the country's central location and help transform it into a logistics hub. But several factors limit their participation in international trucking services. Issues surrounding border procedures and delays are an important factor affecting the competitiveness of Zambian truckers, but the challenges go further, ranging from geographic and regulatory issues to limited incentives to participate in international trucking in the current market environment.

Issues surrounding border procedures and delays are an important factor affecting the competitiveness of Zambian truckers, but the challenges go further

Addressing delays at borders (including improved risk management) will benefit trucking companies in Zambia particularly, as long delays at borders represent a pure waste of resources. Zambian truckers cross these borders (with higher delays and costs) on each trip, while that is not the case for other truckers. In comparison, trucking companies in South Africa or other neighboring countries operate on routes where they experience fewer delays.[26]

Imbalances in trade disadvantage Zambian truckers on international routes to ports. While trucks leaving Zambia with loads are likely to find cargo to pick up in the ports, they are unlikely to go empty to ports to look for cargo, reducing the number of trips taken over a fixed period as they wait for export cargo to pick up in Zambia. Trucks in coastal countries, however, can more easily be deployed due to the availability of import cargo, and when in Zambia are able to compete down prices as a load will contribute to profit as long as it exceeds the marginal costs of transporting the additional weight—these trucks would otherwise have to return empty. Improving access for Zambian (and other regional) trucks to the cargo allocation system at ports by making it more transparent

A strategic approach to developing the local supply cluster to the mining industry has to be comprehensive, long term, and based on a tripartite partnership among buyers, suppliers, and the government

and thereby reducing information asymmetries will not only reduce the current bias but also make it easier for shippers to identify the best offers for transport services.

Differences in vehicle standards among neighboring countries and in access to finance also hurt Zambian truckers. While all truck configurations common in Tanzania are legal for operating in Zambia, a configuration of trucks particularly common in Zambia is not permitted to operate in Tanzania. Similarly, Zambia has lower standards than South Africa in the market for tankers, barring Zambian tankers from entering South Africa where the higher standards are enforced. Equally, difficulties in obtaining low-cost financing in Zambia to buy or renew fleets is a critical issue that affects potential investment, while international trucking companies that invest in Zambia apparently often have easier access to financing, possibly from international or domestic markets. Differences in road-user cost-recovery systems have also been blamed for negatively affecting Zambian truckers, but this is unlikely to be a key issue, and neither are fuel prices likely to affect competition as fuel prices across the region have converged.

And so incentives for domestic companies to participate in international trucking are very limited. In addition to the above factors, prices on international trucking services are far lower than domestic or regional transport prices, while costs are comparable.[27] As a result, many companies prefer to serve the domestic market where they can make higher profits. With the entry of international trucking companies into the domestic market to allow them compete on national transport services under cabotage restrictions, domestic prices are likely to start falling, reducing the disincentive to participate internationally.

World Trade Organization's Agreement on Trade Facilitation

Zambia should use the World Trade Organization's Agreement on Trade Facilitation to advance the reforms outlined above. The agreement is binding not only on customs but on all border agencies, and presents a framework within which discussions among all stakeholders can be organized and critical decisions taken. Through such discussions, Zambia will have to decide which components of the agreement will be implemented when the agreement enters into force, after a transition period, and where technical assistance for implementation will be needed. Commitments by all countries for implementing the agreement's components will be published, increasing accountability and making it easier to monitor progress. Technical assistance funds to help Zambia implement these commitments will likely be available.

The agreement contains commitments to align procedures and formalities (including joint controls) among border agencies, establish an improved risk management system, and introduce post-clearance audits. These will contribute to reducing border delays. Increasing public access to all trade-related information including relating to procedures and documentation through the Internet will further contribute to reducing opportunities for rent seeking and increase transparency. Establishing a trade portal, as agreed with partners under the Accelerated Program for Economic Integration, will achieve this objective.

Improving competitiveness of mining-related goods and services

A coherent strategic approach to developing the local supply cluster to the mining industry has two key requirements: it has to be comprehensive and long term; and it should be based on a tripartite partnership among buyers, suppliers, and the government. The comprehensive element derives from the complex nature of buyer-supplier relationships in the mining industry, which boils down to how value addition in locally provided goods and services can grow. The solution is essentially long term, which also derives from the need to ride over copper price fluctuations in the medium term, which affect existing buyer-supplier linkages.[28] And finally Zambia should think of opportunities in regional markets such as the Democratic Republic of Congo, hence the need for a more comprehensive and long-term approach.

The partnership element reflects the fact that benefits from developing a competitive local supply cluster accrue to suppliers and buyers. Benefits to suppliers and the Zambian economy are obvious, but a competitive local supply cluster can help reduce

procurement costs and lead times for buyers. It can also help produce the best solutions for their problems. Developing more specialized suppliers can enable mining companies to outsource more noncore activities, freeing working capital.

Since 2012, a public-private sector–driven initiative, the Zambia Mining Local Content Initiative, has been trying to develop a coherent approach to developing linkages to benefit local businesses (see annex E).

Current status of the local supply cluster

The supply chain of mining companies in Zambia is highly modernized, and one that local suppliers find difficult to enter. Multinationals have high standards and supply chain management techniques developed in their global mining operations. They aim to focus on core competence, reduce the size of supply networks to fewer, bigger suppliers, set highly detailed and demanding standards for core suppliers, and closely monitor supplier performance. They often rely on historical suppliers, making it hard for new entrants to participate in their supply chains. These mining companies demand value-added services: suppliers should be able to provide technical advice, engage in joint problem solving, and devise innovations to reduce the buyers' transaction and production costs. Moreover, suppliers are expected to have minimum levels of quality, environmental and occupational health, and safety-management systems in place.

International suppliers have a competitive advantage in knowledge-intensive services and equipment. Also, they have close relationships with mining companies from working in mining projects elsewhere—one reason why local suppliers find it difficult to break into the supply chain. Direct auditing and third-party certification are important for that. Successful local suppliers have better products, good after-sales services, larger firm size to meet demand, and (often) greater specialization.

In the short to medium term, the main opportunities for Zambian supply firms are for goods and services with intermediate skills, capital, and technology (box 2.7). From mining companies' perspectives, these are the goods and services that require closeness of suppliers and substantial local value addition. In the longer term, however, Zambia's linkage development strategy should also aim at broadening and deepening its manufacturing linkages upstream and downstream copper mining.

Zambia has a relatively big supply cluster compared with neighboring countries, but it is a "shallow" cluster

Zambia has a relatively big supply cluster compared with neighboring countries, but it is a "shallow" cluster. The cluster is a legacy of when copper mines were nationalized and development of linkages was a key component of Zambia's industrialization strategy. At that time, the local supply industry had high value-added content. However, following privatization of mines, and trade and investment liberalization, the supply chain experienced a decline in the value-added

Box 2.7 Where are the opportunities for local suppliers in the global copper value chain?

There are few opportunities, if any, for local suppliers at the exploration and mine construction stages, which are usually subcontracted to specialized project design consultancy firms and large mine-construction contractors from a handful of regions and countries: North America, Australia, and South Africa. (Annex D displays the global copper value chain, from exploration, to industrial use and recycling.) Construction contractors usually operate under lump-sum turn-key or engineering, procurement, construction, and management arrangements, which largely lock out local supply firms.

The operational stage of a mining project consists of core extraction, crushing, concentration, smelting, and refining. Upstream linkages to these operations vary hugely by value-added content, entry barriers, and market concentration and usually open more opportunities for local suppliers. For example, cleaning, catering, security services, and general transport are generally low value-added content services. In addition, supply chains for capital goods—such as drilling and haulage equipment, excavators, handling equipment (conveyors, locomotives, and scrapers), and crushing and grinding equipment—are controlled by original equipment manufacturers from North America, Europe and a few other regions that rely on networks of local agents, subsidiaries, and sole distributors for marketing, distribution, and after-sales services.

Finally, there is an intermediate category of supplies with skills, knowledge, and technological content. This includes services such as electrical and mechanical engineering, process control, civil engineering, transport, laboratory testing, and pneumatic and hydraulic equipment and services. Manufacturing products in this category include fabrication products, construction material, and rubber goods. In some African countries, such as Ghana and Nigeria, local manufacturers have entered these supply chains.

content of local activities and in its place a fast-growing number of importers emerged, including ad hoc traders known as "briefcase businessmen." Increasingly, suppliers have moved into distribution activities characterized by lower capital and skills requirements, lower risk profiles, and shorter project development periods. Also, the network of specialized second-tier suppliers is underdeveloped.

Local suppliers can be grouped into different categories according to their size, ownership, products, and business models:

- *Agents and distributors.* These are mostly small to medium Zambian-owned businesses that supply a wide range of products requiring low level of initial capital and good market knowledge.
- *Briefcase businessmen.* These are a large group of businesses who supply low value-added goods either imported or sourced locally (from original equipment manufacturers [OEMs] or local manufacturers). Their businesses are characterized by low barriers to entry, high profits, and low risk. Their total number is estimated between a few hundred to 5,000 individuals, and before 2008 they represented up to 80 percent of the vendors' list of a few mining companies. This group is well organized for lobbying the government and mining companies.
- *OEM subsidiaries.* These provide capital equipment and after-sales services to mining companies directly (instead of through distributors or agents). The largest miming OEMs are in Europe, the United States, and South Africa.
- *Specialized firms.* These are a relatively small number of skill-intensive firms. Local businesses are well represented in activities such as electrical and mechanical engineering services but struggle to enter supply links with high capital requirements and highly specialized services, such as pneumatic and hydraulic equipment installation.
- *General services suppliers and manufacturers.* These suppliers provide basic services such as cleaning, building maintenance, security, and so forth. Local manufacturers provide metallurgical, plastic and rubber products, engineering products, and paints.

Upgrading is important to the survival of local suppliers

Zambia's local supply chain is characterized by a high rate of entry and exit of service providers. What characterizes firms with positive sales growth? A 2009 survey of 27 service providers in the Copperbelt, North-Western, and Lusaka provinces sheds some light.[29]

Growing firms upgrade on several fronts. The most common form is process upgrading: of 14 firms, 10 focused on improving production processes by investing in capital equipment, 9 on upskilling their workforce, and 7 on introducing or improving their quality management systems. Investments in product quality, management, or lead times were less frequent. Four firms invested not only in process but also product upgrading (distributing new products) and functional upgrading (after-sales services). Some firms upgraded functionally and moved into more demanding value chains.

By contrast, firms with static or declining sales showed little upgrading. Many of these were micro-enterprises, owned and managed by a person with deep expertise. These micro and small-scale firms failed to grow into more complex managerial and organizational structures that could accommodate upgrading processes, while individual expertise was sufficient for them to remain in business. For this reason they did not take advantage of increasing market opportunities in the mining value chain and struggled to remain competitive. None of them is ISO certified. A few firms with distributorship agreements are one-man businesses that have failed to expand and upgrade.[30]

Forward linkages to buyers and backward linkages to international parent companies play a hefty role in supporting local upgrading. All the 14 growing firms benefited from one type of linkage or a combination of both. Where goods and services are critical to the production process and locational proximity is required, several mining houses in Zambia engage in various levels of buyer-supplier cooperation to upgrade local supplier capabilities. For example, they directly assist suppliers through information sharing, upfront payments, and transport arrangements. Moreover, they are willing to operate through forward purchase agreements, which provide some certainty to local

suppliers. There are also forms of indirect cooperation, through third parties, such as the International Finance Corporation (IFC) Suppliers Development Program, or a partnership with Northern Technical College and Solwezi Technical College, which offers technical and vocational training.

Suppliers such as mining OEM subsidiaries and sole distributors for foreign manufacturers can also draw on another source of competitiveness: backward linkages to parent companies abroad. The parent companies provide them with incentives and resources (capital, knowledge, know-how) to pursue product and process upgrading. In fact, all the firms with these types of backward linkages operate on global standards. OEM subsidiaries are supported by parent companies through investment in workers' upskilling (including two training centers), state-of-the-art capital equipment, and world-class quality control systems and internal management structures. Their contribution to job and skills creation has been significant, with local subsidiaries employing hundreds of skilled workers. Similarly, through sole distributorship agreements, parent companies grant local distributors access to external resources and expertise, credit facilities, and exclusive access to their products.

Suppliers such as briefcase businessmen operate at arms' length with overseas manufacturers. This implies they cannot tap into external knowledge and resources, particularly capital. They are neither required to undertake nor follow an upgrading process, and the ones who have done some upgrading did so at very shallow levels or in order to exit the mining value chain.

Constraints to competitiveness of local suppliers

Skills scarcity and gaps prevent firms from upgrading to high-tech repairing services and expanding business volumes. In particular, the competitive advantage of engineering firms is being eroded by an aging workforce. Data are unavailable, but service providers face skills shortages, for example in mechanical and electrical engineering, IT, and hydraulics. Existing mechanical and electrical engineering skills were built during the mining nationalization era, when public investment in technical and vocational training and engineering schools was steep. Service providers are reluctant to invest resources in house and external training because of high staff turnover. Indeed, firms poach skilled labor from each other and sometimes from training colleges' teaching staff.

Sustained and comprehensive policy measures are required to develop a skilled labor market and to support local technological upgrading. Cooperation among suppliers, their parent companies, and the mining houses has lifted skills. OEMs have supported skills development in the Copperbelt region, which has proved partly successful. They have trained staff in local and overseas training facilities. To address low-staff-retention problems, OEM subsidiaries have been considering closer partnerships with local training institutes. But there are limitations on the extent of local skills development. For higher skilled labor, OEM subsidiaries and sole distributors rely on South Africa–based subsidiaries for specialized expertise, by either flying in personnel or sending machines for repair to South Africa.

One important yet inadequately used avenue of technological acquisition is importing capital equipment. Indeed, capital investment by local service providers is low, and there is very little technological adaptation of imported technologies. Investment in technologically advanced equipment is curtailed by various factors: capital constraints, reluctance to invest due to stiff competition from low-cost imports, and flat or erratic demand from mines. Moreover, firms are unwilling to invest in computerized equipment because of scarce local skills for maintenance and repair.

Zambian service providers face a number of structural, cost-raising factors

Zambian service providers face a number of structural, cost-raising factors that are common to other sectors of the economy:

- Communication, transport, and utilities are problematic on reliability and access, raising the costs of doing business. Anecdotal evidence suggests that poor telecom and Internet network infrastructure has lost business opportunities for smaller firms, which have been unable to respond promptly to requests for quotation, or inquiries from potential buyers.
- Additionally, import procedures are expensive and time consuming, which

disfavor service providers in particular. Also, the cost of crossing Zambia's borders is very high, with at least two implications: established service providers that comply with import procedures are disadvantaged relative to briefcase businessmen; and because mining companies can organize bulk imports and transport at cheaper rates, local service providers need to provide a value-added service to remain competitive.

- A key challenge affecting service providers in mining is access to capital, affecting supplier performance on lead times. Lead times are a critical market requirement for all mining companies. Most service activities are import-intensive, because parts, components, equipment, and consumables are imported from South Africa or farther away. Because of long delays at the borders, suppliers' working capital is tied up in goods in transit. Firms need to maintain large in-house stocks if they want to reduce lead times, but this is difficult because of poor access to banking finance. Therefore, suppliers need to rely on importing on credit by the OEMs, which applies only to subsidiaries and sole distributors, or on the willingness of selected buyers to operate through forward purchase agreements or upfront payments. Firms excluded from these linkages have struggled to build competitive and sustainable businesses.

In the past, policymakers have not given enough attention to opportunities for private sector development inherent in upstream linkage development

Developing a competitive local supply cluster—a long-term project

There is a need for a comprehensive and long-term approach to developing an internationally competitive local supply cluster in Zambia. In the past, policymakers have not given enough attention to opportunities for private sector development inherent in upstream linkage development. The 2006 Fifth National Development Plan, which guided the policies of the government at the time, noted that the copper mining sector had not promoted broad-based economic growth. The underlying response of the Plan was the promotion of export-oriented, private sector growth. Industries upstream to copper mining, especially service providers, were not included in the policy initiatives for private sector growth. In 2007 the IFC undertook a Suppliers Development Program. This was a donor- and private sector–funded program, with little ownership from government. Staff from the relevant ministries attended only a few initial meetings. The project was implemented solely by the mines' supply managers, with guidance from their CEOs, and IFC staff. There are several lessons to be learned (box 2.8).

Briefcase businessmen have benefited from the lack of a coherent policy on upstream linkage development. Political connections, and the pressure put on the mining companies to show some level of local sourcing, enabled briefcase businessmen to gain access to mining procurement and capture rents. They had almost no overhead costs compared with established businesses (rent, labor, utilities) and did not spend resources to add value to their products. At the same time, they often charged high prices thanks to irregular procurement practices. Indeed, the primary interest of their business association has been to maintain market access to mining procurement rather than to promote local upgrading.

Box 2.8 Lessons from the IFC Suppliers Development Program

Linkage programs can deliver quick wins. The program has improved firm capabilities in, for example, business planning, cost management, marketing, product development, quality control, and in diversifying their markets (Newton Lungu and Associates 2010).

Other lessons stand out. First, targeting critical suppliers can result in additional interest by buyers to strengthen cooperation and continue cooperating in future. Second, future initiatives should have a cluster approach and find internal agents of change to drive the process with buyers. Suppliers should be able to act collectively to address structural or unforeseen problems, and to set up programs that span beyond the three years of the IFC program. Third, the program focused on manufacturers and included distributors only at the end. Service providers with high potential for upgrading skills and job creation should be included in future initiatives. Last, the program could not deliver on improving access to finance because local banking institutions did not cooperate (Newton Lungu and Associates 2010). Barriers to local financing remain a critical constraint to linkage development.

The 2008 Mines and Minerals Development Act set new provisions on local supply firms: to the extent possible, mining companies should extend preferences to "materials and products made in Zambia" and to "service agencies located in Zambia and owned by Zambia citizens or citizens owned companies."[31] This approach tries to build mutual trust between local suppliers and the mining industry rather than setting compulsory regulations on local sourcing (Kasanga 2012).

For service providers the Act focuses on firm ownership rather than value-added content. The risk, however, is that if this is not coupled with supplier development programs, preferential procurement will encourage rent seeking rather than genuine upgrading. The experience of briefcase businessmen has shown that large expenditures by mining companies on local procurement through small-scale Zambian-owned importers do not necessarily result in skills and technological development, or firm upgrading into more productive value chains. On the contrary, this process can be counterproductive because it has pushed established suppliers out of the mining value chain.

The long-term approach would have the following goals. First, to increase local value-added content, by increasing the technological, skills and capital intensity of local activities, and by facilitating their upgrading processes. It is very important that this goal is not confused with the goal of simply increasing turnover for Zambian-owned businesses. Increasing the degree of local value addition can kick-start knowledge intensification, industrialization, and employment generation.

Second, to expand the number of new entrants in the mining supply chain, which will increase the range of services provided locally and promote competition. Such an objective should be coupled with efforts to facilitate the specialization of suppliers. There is a misalignment between the mining companies' demand for specialized local suppliers, and the suppliers' offer of a broad range of services with little value addition. A better understanding of market requirements by suppliers is critical.

Third, to expand market opportunities for existing service providers. These market opportunities consist of expanding sales to current customers, selling to other mining and non-mining companies, and expanding into regional markets. The expansion of the Democratic Republic of Congo's mining sector opens significant opportunities for Zambian suppliers to reach the economies of scale they have lacked so far. Indeed, Zambian-based OEM subsidiaries and some sole distributors already supply Democratic Republic of Congo mining buyers, either directly or through Democratic Republic of Congo–based firms.

To pursue these goals, an institutional partnership among the government, mining companies, and local suppliers is needed. The strategy of developing a local supply cluster cannot be unilaterally pushed by local suppliers or the government. For the strategy to be successful and its outcomes sustainable, it has to be well informed and designed to make local sourcing economically and financially attractive to buyers. Annex E details aspects of such an institutional partnership.

To help build confidence among participants and develop the agenda for the initiative, it will be important to develop transparency about procurement by mining companies. This includes providing information on the importance of price, quality, and local value-added content in procurement decisions. Mining companies should be invited to share procurement data in a format that facilitates the monitoring and evaluation process (for example, data should be provided on fuel, electricity, and contractors' expenses and disaggregated by services/goods and other useful categories). An electronic procurement system could be a step in this direction. Past efforts to set up such a system failed because of misunderstandings and poor consultations between stakeholders, underscoring the importance of consultations before and after procurement reforms.

The expansion of the Democratic Republic of Congo's mining sector opens opportunities for Zambian suppliers to reach the economies of scale they have lacked so far

Summary of findings and policy implications

How can Zambia use its resource endowments of copper, good arable land, and water to grow faster and create more jobs? The analysis in this section focused on improving competitiveness of private sector and growing trade as an approach to answering this question. The experience all over the world

has been that trade is associated with higher growth, largely due to productivity improvements accompanying higher trade. This Brief notes that there is considerable potential to grow non-copper trade within the region. Besides, improving competitiveness by reducing costs of production and technological upgrading could result in more productive jobs through domestic production of goods and services that are otherwise imported. For Zambia the need to improve competitiveness is particularly relevant in producing mining-related goods and services.

The potential to expand the non-copper trade and get more out of copper

A review of Zambia's performance in the past decade brings up the following six salient outcomes:

- Non-copper merchandise exports have grown briskly alongside copper exports.
- The number of exporting firms and exported products has grown, but exports have low survival rates.
- Zambia is trading more with its regional partners, including through informal channels.
- Zambian enterprises face high trade costs.
- Zambia has scope to expand export of services.
- Zambia has scope to improve competitiveness of mining-related goods and services.

These outcomes point to the opportunities available to further diversify production and exports. Data from export transactions over more than a decade show a large increase in the number of exporting firms, which is encouraging. These firms are exporting mainly to regional markets that can provide a springboard to success in the global market. But—a big but—these export transactions are generally small in value-added terms, and are conducted largely with neighboring countries, several of them landlocked, which do not face the full force of global competition. Also, these transactions are unstable over time. They come and go, as do the firms involved in export transactions, raising questions about their inherent competitiveness. From a trade perspective, these export transactions are frequent and small. Therefore, the costs involved in crossing Zambia's borders are a big share of the value exported, probably hindering competitiveness of these relatively smaller firms. Reducing the costs of crossing the borders should thus be a policy priority. Reducing border costs will also help a large number of small traders, including women, who carry out informal trade with neighboring countries and for whom trade is an important source of livelihood.

Growth of agriculture trade in the past decade is also a part of the story of growth in non-copper exports. Zambia's recorded agriculture exports have grown at an average of 27 percent a year since 2000. Compared with many African countries, Zambia already has relatively well-developed agribusiness with more than 400,000 smallholder households linked to private firms. With the right policies in place, Zambia can emerge as the grain basket of Southern Africa.

Zambia also has considerable potential to grow its production of mining-related goods and services. Zambian suppliers account for a very small share of value-added to mining industry's local purchases. Apart from directly creating jobs, increasing the degree of local value addition can kick-start knowledge intensification and industrialization.

Constraints to growing agriculture trade and policy direction

Although Zambia has generally done very well in agriculture trade when measured by total value and the trade balance, this Brief has identified policy constraints, including problems with high costs of regulatory compliance, unpredictable export policy and FRA interventions in the maize market, and reliance on high input subsidies that undermine Zambia's agriculture competitiveness by diverting resources from long-term improvements.

High regulatory costs arise from the wide variety of requirements. Phytosanitary and other certificates, quality analysis, and product registration and testing all serve legitimate purposes, yet in practice there are frequent institutional overlaps that increase regulatory compliance costs. These costs are particularly onerous for small traders. To improve this situation, dialogue at the national and regional levels on opportunities to streamline and eliminate unnecessary trade procedures and requirements would be a good practical approach.

A second set of trade constraints relate to unpredictable agriculture trade policy and

FRA interventions that act as a major deterrent to farmers in producing for exports and making on-farm investments and to private sector investments in input supply, crop storage, and marketing. Policy unpredictability also leads to farmers and private operators making inefficient choices about what crops to grow. The consolidation of maize trade in the hands of the FRA, with the risk of future price interventions and restrictions on maize exports, has made it impossible for Zambia to develop reliable trading relations with deficit markets in the region.

The high level of input subsidies contribute to higher maize output in a given crop year, yet they do not have any lasting impact on agricultural output. Instead, they divert resources away from other investments that could develop long-term competitiveness in agriculture. Analysis conducted for this Brief shows that even without input and output subsidies, commercial farmers would be efficient producers of additional irrigated and rainfed maize for exports to neighboring countries, which would also help in stabilizing domestic prices. This is particularly true for preseason irrigated maize. Market sources estimate that these farms could produce a stable 300,000 tons of new maize including up to 100,000 tons of irrigated maize for early harvest given predictable policies. Toward growing agriculture exports and improving competitiveness, the Brief therefore recommends:

- Reducing the cost of regulatory compliance by streamlining trade procedures and eliminating unnecessary ones.
- Putting in place a mechanism that precommits the government to allowing agreed amounts of private maize exports and moving to a policy of open borders over time.
- Ploughing back savings from farm input subsidies into measures aimed at improving long-term competitiveness.

Reducing costs at the borders

Reducing costs of crossing the borders is a high priority for Zambia if it is to play a central role in regional markets and value chains and, possibly, emerge as logistics hub for intraregional trade. Delays at its borders are lengthy and do not appear to be going down despite efforts to improve customs and border management, including pre-arrival declarations, an improved customs data management system, and OSBPs.

As a policy direction, this Brief suggests adopting a comprehensive but prioritized approach covering infrastructure, IT, and procedural reforms. Within this comprehensive approach, procedural reforms should be given priority over physical development of new OSBPs.

This brief also recommends using the World Trade Organization's Agreement on Trade Facilitation to advance the reforms. The agreement, binding not only on customs but on all border agencies, presents a framework within which discussions among all involved stakeholders can be organized.

Improving competitiveness of mining-related services

Zambian suppliers have not been able to benefit much from the strong expansion of copper mining industry in the past decade. While the local supply cluster is relatively big in terms of number of suppliers, it is very small in terms of value-added content. A large number of suppliers are into distribution activities characterized by lower capital and skills requirement. There are several constraints to competitiveness of local suppliers. These include, among others, skills scarcity and gaps that prevent firms from technological upgrading and business expansion; and structural, cost-raising factors such as high cost of finance, high border costs, and the like.

The long-term approach to improving competitiveness of local supply cluster would have the following goals. First, to increase local value-added content, by increasing the technological, skills, and capital intensity of local activities, and by facilitating their upgrading processes. It is very important that this goal is not confused with the goal of simply increasing turnover for Zambian-owned businesses. There is a misalignment between the mining companies' demand for specialized local suppliers, and the suppliers' offer of a broad range of services with little value addition. A better understanding of market requirements by suppliers is critical. Second, to expand the number of new entrants in the mining supply chain, which will increase the range of services provided locally, and promote competition. Third, to expand market opportunities

for existing service providers. These market opportunities consist of expanding sales to current customers, selling to other mining and non-mining companies, and expanding into regional markets. The expansion of the Democratic Republic of Congo's mining sector opens significant opportunities for Zambian suppliers to reach the economies of scale they have lacked so far.

To pursue these goals, an institutional partnership among the government, mining companies, and local suppliers is needed. An existing public-private sector–driven initiative, the Zambia Mining Local Content Initiative, could be used to energize the process. The strategy of developing a local supply cluster cannot be unilaterally pushed by local suppliers or the government. For the strategy to be successful and its outcomes sustainable, it has to be well informed and designed to make local sourcing economically and financially attractive to buyers.

ANNEX A

Economic data

Table A1 GDP growth by main sectors, 2005–13 (percent, unless otherwise stated)

Constant price = 1994

Indicator	2005–09	2010	2011	2012	2013 preliminary
Primary sector	4.6	10.2	2.2	2.9	–2.3
Agriculture, forestry, and fishing	2.4	6.6	8.0	6.8	–7.4
Mining and quarrying	8.3	15.2	–5.2	–2.7	5.9
Secondary sector	8.1	6.5	8.5	10.1	8.3
Manufacturing	3.1	4.2	8.0	7.2	4.5
Electricity, gas, and water	4.5	7.4	8.2	4.1	5.9
Construction	14.8	8.1	8.9	13.6	11.4
Tertiary sector[a]	6.1	6.6	7.8	7.4	8.6
Wholesale and retail	2.4	4.2	7.5	4.0	5.2
Restaurants, bars, and hotels	5.8	10.2	7.9	–2.6	2.2
Transport, storage, and communications	15.1	14.9	13.7	12.8	12.4
Financial institutions and insurance	5.0	6.0	4.9	12.0	12.2
Real estate and business services	3.1	3.0	2.9	3.7	3.1
GDP[b]	6.0	7.6	6.8	7.3	6.4
GDP less mining	5.8	6.8	8.2	8.2	6.4
Gross national income (GNI)	6.7	1.9	9.6	12.3	4.5
Memorandum items (ZMW millions):					
GDP at current market prices	47,250.4	77,666.6	93,332.5	106,015.2	120,780.2
GNI at market prices	43,133.0	71,128.3	87,716.6	104,298.7	116,704.8

a. Includes community, social, and personal services and others.
b. Includes taxes (less financial intermediary services indirectly measured).
Source: Authorities, IMF, and World Bank staff estimates.

Table A2 **Central government finances, 2010–14 (percent of GDP, unless otherwise stated)**

	2010	2011	2012	2013 budget	2013 preliminary	2014 budget
Revenue	19.6	21.7	22.7	21.8	20.9	22.8
Tax	16.4	19.3	18.2	19.5	17.7	17.6
Income taxes	8.9	11.4	9.7	10.6	8.1	7.7
Value-added tax	4.1	4.3	4.5	5.0	6.1	5.8
Excise taxes	1.8	1.8	2.1	2.1	1.9	2.3
Customs duties	1.6	1.8	1.9	1.8	1.5	1.7
Nontax[a]	1.4	1.6	2.9	1.3	2.9	3.7
Grants	1.8	0.8	1.7	1.0	0.4	1.5
Expenditure	22.6	23.9	26.1	26.2	27.7	29.4
Current expenditure	19.4	19.7	19.6	19.0	21.2	22.2
Out of which wages and salaries	8.1	7.9	8.9	9.1	9.9	11.1
Out of which interest payments	1.8	1.2	1.6	1.7	1.8	2.6
Out of which Fertilizer Support Program	0.8	1.0	0.8	0.4	0.9	0.4
Out of which Strategic Food Reserve	1.6	1.8	1.1	0.2	0.9	0.7
Out of which fuel subsidy	0.1	0.3	0.7	0.0	1.3	0.0
Capital expenditure	3.2	4.2	6.5	7.2	6.6	7.2
Overall balance (including grants)[b]	–3.0	–2.2	–3.3	–4.5	–6.8	–6.6
Financing	3.0	2.2	3.3	4.5	6.8	6.6
External (net)	0.3	1.2	2.2	2.9	2.2	5.0
Domestic (net)	2.7	1.0	1.1	1.5	4.7	1.6

a. Includes mineral royalties.
b. On cash basis, excluding arrears.
Source: Ministry of Finance, IMF, and World Bank.

Table A3 Financial soundness indicators, 2008–13 (percent)

	2008	2009	2010	2011	2012	2013
Capital adequacy						
Regulatory capital to risk-weighted assets	18.6	22.3	22.1	19.2	21.3	26.8
Tier 1 regulatory capital to risk-weighted assets	15.7	18.9	19.1	16.8	19.4	24.5
Capital to total assets	9.9	11.2	10.4	10.2	12	14.1
Asset quality						
Past due advances (NPL) to total advances	7.2	12.6	14.8	10.4	8.1	7.0
Loan loss provisions to nonperforming loans	104.6	86.6	80.3	76.7	73.5	83.2
Bad debt provisions to advances	6.1	10.9	11.9	8	6	5.8
Loan concentration						
Households	30.1	30.9	32.2	30.8	34.3	34.5
Government and parastatals	1.9	3.1	4.6	4.7	3.9	2.1
Agriculture	16	19	17.6	17.7	22.6	20.2
Mining	5	4	3.2	4.2	5.7	6.6
Manufacturing	11	12	12.7	12.2	11.3	9.5
Construction	4	3	5.8	4.2	3.7	3.5
Services	9	8	7	7.1	3.9	4.1
Others	23	20	16.9	19.1	14.6	56.1
Earnings and profitability						
Return on average assets (cumulative)	3.6	2.1	2.9	3.7	3.9	3.4
Return on equity (cumulative)	20.8	9.4	12.1	25.5	20.8	18.2
Gross interest income to total gross income	66.6	65.1	58.6	59.3	61.3	64.5
Gross noninterest income to total gross income	33.4	34.9	41.4	40.7	38.7	35.5
Net interest margin	10.4	10.7	9	8.1	8.4	8.3
Liquidity						
Liquid assets to total assets	35.5	38	43.8	40.3	36	38.9
Liquid assets to total deposits	49.9	52.6	58.5	53.3	49	52.6
Advances to deposits ratio	66.3	60.1	53.1	57.1	66	61.4
Exposure to foreign currency						
Foreign currency loans to total gross loans	42.1	36.4	32.8	39.1	28.7	25.6
Foreign currency liabilities to total liabilities	35.8	38	39.6	39	22.9	30.4
Net open position in foreign exchange to capital	6.9	2.5	4.1	5.5	2.8	3.6

Source: Bank of Zambia.

Table A4 Selected balance of payments indicators, 2009–13 ($ millions, unless otherwise stated)

	2009	2010	2011	2012	2013 preliminary
Current account	583.3	1,205.5	704.7	802.6	216.5
Trade balance	905.7	2,703.7	2,205.6	1,450.5	1,402.3
Exports	4,242.8	7,261.7	8,512.3	9,204.6	10,398.5
Out of which copper	3,179.3	5,767.9	6,659.7	6,294.5	6,941.3
Out of which nontraditional exports	899.7	1,190.0	1,596.6	2,693.5	3,312.0
Imports	–3,413.4	–4,709.9	–6,454.2	–7,925.5	–9,234.8
Out of which petroleum	–535.8	–618.1	–530.5	–930.6	–1,200.5
Services (net)	–419.7	–567.0	–723.6	–768.3	–821.4
Income (net)	–418.7	–1,363.0	–1,155.3	–333.5	–753.3
Current transfers (net)	64.8	–1,075.8	–368.5	–7.1	–512.3
Capital and financial account	64.8	–1,075.8	–368.5	–7.1	–512.3
Capital account	237.3	149.7	151.0	223.0	101.0
Financial account	–172.5	–1,225.5	–519.5	–230.1	–613.3
Out of which FDI and portfolio investments	350.4	707.5	1,180.6	3,351.1	1,742.4
Overall balance	540.1	83.3	243.8	726.7	–344.9
Financing: change in NIR (minus indicates an increase)	–540.1	–83.3	–243.8	–726.7	344.9
Memorandum items					
Current account (percent of GDP)	4.6	7.4	3.7	3.9	1.0
Gross international reserves	1,758.4	1,896.5	2,166.9	2,456.7	2,395.6
in months of imports cover	5.2	4.1	3.4	3.2	2.7

Source: Zambian authorities, IMF, and World Bank staff estimates.

ANNEX B

Analysis of firm-level trade transactions

The survival of export flows by product and destinations and their determinants is modeled using a Cox proportional hazard model. The dependent variable is a hazard function of a trade relationship, which is a multiplicative function of an unspecified time-dependent baseline hazard function and an exponential function of gravity variables, various spell characteristics such as initial value and size of transaction, a dummy for multiple spells, and various product and firm characteristics: where $h_0(t)$ characterizes how the baseline hazard changes as a function of time, the covariates X affect the hazard rate independently of time, and β is a vector of parameters.

These parameters are estimated by maximizing the partial likelihood as opposed to the likelihood of an entirely specified parametric hazard model. Resulting estimates are not as efficient as maximum-likelihood estimates; however, no arbitrary, and possibly incorrect, assumptions about the form of the baseline hazard need to be made. Estimation results are reported in terms of coefficients (in contrast to hazard ratios) with clustered standard statistics in parentheses. In these models a positive coefficient implies that the relevant variable is associated with higher hazard rates—that is, that the variable contributes to making exports more unstable.

The control variables in the model largely behave as expected: exports are more stable if they imply larger volumes and economically larger destination markets. Interestingly, though, exports to more distant markets seem to be more stable than exports to nearby countries and this even if only nontraditional export products are considered. The exchange-rate variable is a measure of month-on-month variability of the kwacha exchange rate with respect to the currency of the relevant destination country. The estimated coefficients on this variable are statistically significant and positive, suggesting that exchange-rate volatility is indeed a driver of firm-level export instability.

In the second exercise, the impact of relying on imported inputs is explored. All six regression models include the same control variables as those shown in table B1, but are not shown below to save space (table B2). The results suggest that importing does not make exporters more vulnerable—quite the contrary. The variable "Import exposure" yields negative and statistically significant coefficient estimates throughout. This suggests that exporting firms that are also importers have more stable export patterns. However, "Import exposure" captures all sorts of imports, and not only imported inputs. We therefore augment the model with two measures of the intensity to which exporting firms import upstream products that are likely to enter as inputs into their production destined for export. We use two measures: a narrow one ("Intermediate imports (1)") and a broad one ("Intermediate imports (2)"). The narrow measure is likely more precise, whereas the broad one is available for a larger number of observations.

As seen in table B2, it makes no qualitative difference which measure of imported

Table B1 Regression model

Variables	(1) All products	(2) Nontraditional products
Log of export value at the initiation of spell	−0.0254***	−0.0173***
	(0.007)	(0.006)
Number of suppliers serving the same product to a destination market	−0.0105**	−0.0101*
	(0.005)	(0.005)
Number of destinations served by a firm at the beginning of a spell	0.0071***	0.0093***
	(0.002)	(0.001)
Number of products served by a firm to the same destination market	−0.0004	−0.0006*
	(0.000)	(0.000)
Multiple spell dummy	−0.0469***	−0.0572***
	(0.015)	(0.013)
Log of destination market population	0.0671***	0.0531**
	(0.023)	(0.025)
Log of destination market GDP	−0.1338***	−0.1245***
	(0.020)	(0.023)
Dummy for common official of primary language	0.2103***	0.2082***
	(0.056)	(0.058)
Dummy for common colonizer after 1945	−0.1668**	−0.2752***
	(0.074)	(0.048)
Log distance between Zambia and destination country	−0.4281**	−0.6026**
	(0.183)	(0.259)
Normalized annual exchange rate volatility (sd/mean, cross rate)	0.7590***	1.0070***
	(0.156)	(0.155)
Observations	*19,121*	*18,567*

Note: Clustered standard error in parentheses (clustering is done by broad product category).

Table B2 Regression model: Imported inputs

Variables	(1) All products	(2) Nontraditional products	(3) All products	(4) Nontraditional products	(5) All products	(6) Nontraditional products
Import exposure	−0.0750**	−0.0783**	−0.0973**	−0.0995**	−0.1884***	−0.1946***
	(0.033)	(0.035)	(0.046)	(0.048)	(0.038)	(0.041)
Intermediate imports (1)			0.0509**	0.0515**		
			(0.020)	(0.021)		
Intermediate imports (2)					0.0771***	0.0796***
					(0.017)	(0.018)
Observations	*45,224*	*44,398*	*17,611*	*17,535*	*34,986*	*34,311*

Note: Clustered standard error in parentheses (clustering is done by broad product category).

inputs one uses, nor whether one looks at all exports or only at nontraditional exports: in all cases, imported input intensity is found to increase export hazard rates statistically significantly. This means that, other things equal, the more a firm relies on imported inputs, the more unstable its export spells become.

ANNEX C

Zambia's competitiveness in maize production

Methodology and key assumptions

The analysis was prepared using a spreadsheet template custom-built for this Brief to look at the costs and profitability of maize in financial and economic terms.

On the financial side, the analysis measures per hectare profitability in net terms after depreciation for growers who sell 100 percent of their output for cash. The analysis thus does not aim to show whole farm profits since this depends on the total area cultivated and on the imputed value of home retentions. Similarly, whereas the FISP is currently designed to provide participating households inputs for 0.5 ha of maize at recommended levels of use, the results are expressed per hectare so they do not show the profits for individual families but for each hectare of subsidized maize. Additionally, the value of family labor is not counted at the financial level since this does not require cash expenditure and the net profits are therefore best thought of as returns to labor.

For both FAM and LCF farmers, financial profits from private sales are based on a selling price of $10 per ton less than export parity for each location to cover the trader's margin. For FRA sales, a fixed price of K65 per 50-kg bag ($236.36 per ton) is used for all locations and regardless of when the maize is sold or exported.[32]

At the economic level, all costs and revenues are revalued in social terms to reflect their true scarcity value to Zambia. The opportunity cost of family labor is thus counted at this level, as are the costs of FISP and FRA subsidies paid for by Zambia as a whole. On the other hand, all taxes including any import duties and value-added tax are excluded from the economic analysis since they are not costs to Zambia but instead represent transfers from one part of the economy to another. Economic revenue, in turn, is measured by parity prices worked back to the market depot in each farm area net of any taxes or subsidies. The parity price assumptions used for the analysis are summarized in table C2 based on different storage periods for each crop and market scenario described above. As shown, FRA maize is assumed to have a much lower value at the market depot than private sector maize. This is because of the additional costs of FRA marketing and very high storage losses conservatively estimated at 10–20 percent. Beyond the matter of physical losses due to poor infrastructure, FRA marketing is affected by other managerial problems including grain going out the back gate only to be resold and paid for again at the front. Moreover, the FRA is not well geared to reject grain on reception, and exporters say they often have to visit several depots at a reported cost $2.50 per ton per place inspected to find maize that meets the buyer's quality specifications.

The price assumptions, farmer yields, and other production coefficients including storage costs and losses are based on conservative estimates drawn from various sources including indicative crop budgets data provided by the Zambia National Farmers Union, smallholder farm surveys by the Indaba Agricultural Policy Research Institute with the Central Statistical Office, and recent discussions with crop production and trade experts.

Table C1 Costs of formal sector border crossing at Kasumbalesa

	30-ton truck		7-ton truck		
	$/truck	$/ton	$/truck	$/ton	Notes
Cost to exit Zambia					
Exports permit for maize or mealie meal	8.76	0.29	5.32	0.76	$150 for 510 tons (valid 30 days)
Phytosanitary certificate	3.13	0.10	3.13	0.45	$62.50 for book of 20 (1 per truck)
Non-GMO certificate	30.00	1.00	30.00	4.29	Needed for Zambia permits, not required by the Democratic Republic of Congo
ASYCUDA fee	10.00	0.33	10.00	1.43	Fixed cost per customs entry
Clearing agent	75.00	2.50	75.00	10.71	Typically $50 to $100 depending on agent
Crossing fee-out (to government)	133.00	4.43	48.00	6.86	Varies by truck size
Total cost to exit Zambia	259.89	8.65	171.45	24.50	
Cost to enter/exit the Democratic Republic of Congo					
Quality testing (fee)	30.00	1.00	30.00	4.29	Quote price
Quality testing (loss of 1 bag as sample)	28.00	0.95	28.50	4.07	Value of 1 bag per truck at Lubumbashi wholesale
Import duty	45.00	1.50	10.50	1.50	COMESA Certificates of Origin not accepted
Entry card	80.00	2.67	80.00	11.43	Quoted price
Tourism card	25.00	0.83	25.00	3.57	Quoted price
Insurance card	100.00	3.33	100.00	14.29	Fixed price per truck
Visas (for driver and mechanic)	90.00	3.00	90.00	12.86	Quoted price
Health cards (for driver and mechanic)	20.00	0.67	20.00	2.86	Quoted price
Clearing agent (customs entry)	125.00	4.17	95.00	13.57	Estimate based on higher rate than in Zambia
R/T crossing fee (to concessionaire)	200.00	6.67	80.00	11.43	Slightly cheaper than toll on Zambia side
Total cost to enter/exit the Democratic Republic of Congo	743.00	24.79	559.00	79.87	
Costs to return to Zambia (empty)					
Crossing fee (to government)	133.00	4.43	48.00	6.86	Varies by truck size
Total costs of formal crossing	1,135.89	37.87	778.45	111.23	
As percent of Zambia farmgate price		15		43	
As percent of Lubumbashi wholesale		7		20	

Source: Authors' calculations from visit to Kasumbalesa in November 2011.

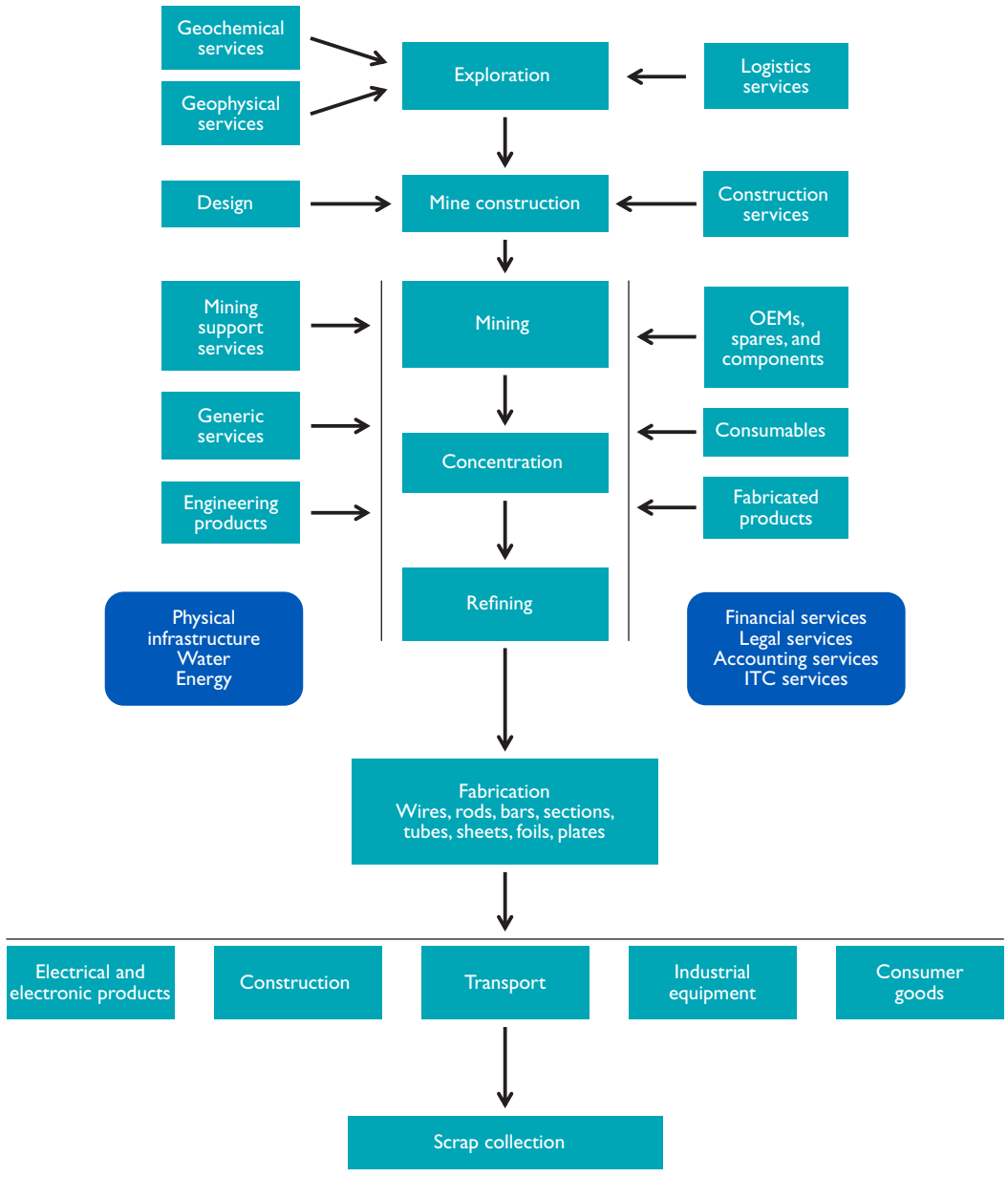
Table C2 Parity price assumptions ($/ton, non-GMO white maize)

	Preseason	Early	Peak	Long
CIF Harare	390.00	360.00	320.00	380.00
Approximate delivery date	April/May	June/July	Sept./Oct.	Jan./Feb.
FOB Central Province (Mkushi)				
LCF—irrigated	280.00	239.56	82.54	221.80
LCF— rainfed	n/a	250.00	191.54	230.80
FAM—private sales	n/a	248.50	193.30	232.26
FAM—sales to FRA	n/a	218.20	160.80	178.40
FOB Eastern Province (Chipata)				
FAM—private sales	n/a	216.10	160.90	199.86
FAM—sales to FRA	n/a	185.80	128.40	146.00
FOB Northern Province (Kasama)				
FAM—private sales	n/a	181.30	126.10	165.06
FAM—sales to FRA	n/a	151.00	93.60	111.20

Note: n/a is not available.

ANNEX D

Copper mining global value chain



Source: Authors' compilation from various sources.

ANNEX E

Some design issues about the institutional partnership to develop the local mining services supply cluster

In 2013 the Chamber of Mines of Zambia and the Zambia Association of Manufacturers, working closely with government, mining companies, and other key stakeholders, launched the Zambian Mining Local Content Initiative (ZMLCI). The World Bank and International Finance Corporation (IFC) are providing facilitation support to the ZMLCI. The ZMLCI aims to identify actions to enhance local content. It can provide the basis for partnership, especially given that it has received support at the highest political level. Participation, however, would need to be broadened to a wider group of stakeholders and its objectives would need to be broadened to tackle structural factors affecting supplier development. Also currently, the ZMLCI appears to be focused on local manufacturers only; it would need to include service providers and second-tier suppliers as well.

For the partnership to be effective, the government would need to commit to this process at the high-government or senior official level, allocate sufficient resources to every stage of this initiative, and provide public goods required to improve the mining cluster competitiveness. The Ministry of Commerce, Trade and Industry could lead the process and facilitate interministerial coordination. Among other government institutions that should be part of the stakeholders' alliance are: the ministries responsible for finance, mines and mineral development, education, technology, and infrastructure; Zambia Development Agency; National Technology Business Centre; and TEVETA.

Mining companies' CEOs would need to be actively involved in the design and implementation of any local content strategy. Their involvement in a stakeholders' alliance would signal a commitment to improve local supplier capabilities and increase local content through a longer term and comprehensive strategy. Currently, the commitment of CEOs varies across mining companies. Some mining companies have shown willingness to be involved in such initiatives, but others have been slow to participate.

Local suppliers would need to cooperate and participate in a cohesive manner. Supply firms in the Copperbelt province are geographically agglomerated, but horizontal cooperation between them has so far been weak: knowledge sharing and joint actions (such as joint bids or joint bulk purchases) are scarce, and the cluster is largely populated by nonspecialized suppliers with few linkages to second-tier suppliers. Cooperation through the Kitwe Chamber of Commerce and Industry has not dealt with structural issues affecting suppliers' competitiveness.

A number of institutions would be involved in the design and implementation stages of specific activities. These include the Zambia Bureau of Standards, the Engineering Institution of Zambia, universities and technical institutes, business development service providers, and international institutions such as the IFC.

This Brief does not recommend areas or subjects of focus by the stakeholders' alliance. In the past the following areas have shown up as relevant and should be considered:

Skills development for labor and management would be critical to all the objectives of the strategy to develop a local supply cluster. Access to a more skilled labor force would enable both upgrading into new functions and expanding their operations. For example, distributors would be able to move into after-sales services, customized assembly, and stock management; engineering firms could expand their capacity and invest in computerized equipment. Availability of skills will also create incentives for foreign firms to set up local firms.

The stakeholders' alliance could review current legislation and regulations hampering local supplier competitiveness, and formulate proposals to the government to improve their design or implementation. This constitutes a "low hanging fruit" in terms of resource requirements. One of the priorities could be reviewing the tax exemption regime for the mining sector.[33] Stakeholders should formulate proposals that, while ensuring that the mining companies are not negatively affected, would remove the cost disadvantage faced by suppliers.

One particular aspect of operation management of small and medium enterprises is becoming increasingly important: quality management. Some mining companies require their suppliers to have internal quality management systems in place. In the future they will require such systems to be internationally certified. The stakeholders' alliance should devise a program to help selected local suppliers comply with these requirements. ISO certification is costly and requires sophisticated internal firms capabilities. Some dynamic firms are willing to work toward ISO certification because they expect this to be a future market requirement. Their certification process should be financially supported, because costs are high due to lack of accredited certification bodies. Other firms should be supported in establishing internal quality control systems, which could be a stepping stone for future international certification. Such programs should be inclusive of second-tier suppliers.

Given Zambia's early stage of development, technological innovation should be pursued by supporting technology adoption and adaptation rather than high-value research and development. The Ministry of Science, Technology and Vocational Training could work with the ministries responsible for finance and industrial development to design firm-level incentives to invest in new equipment and training (for example through matching grant programs), and by encouraging technology transfer agreements.

To facilitate new entrants, specialization, and linkages between parent companies and local suppliers, government should continue promoting foreign direct investment and encourage technology transfer and joint ventures. The investment regime is relatively open, but transnational corporations prefer to operate at arms' length rather than partner with local firms because of low knowledge and trust of local businesses and weak local capabilities (skills, finance, and so on). The Ministry of Commerce, Trade and Industry could take several mitigating actions in this regard. For the short term, possible actions include promoting business-to-business events to facilitate linkages, and, for the long term, collaborating with the Ministry of Justice to improve contract enforcement mechanisms.

Besides actions specific to mining industry, there are a number of relevant areas for private sector development as a whole. These have been identified as priorities elsewhere and are well known.

For example, access to capital is critical for supplier upgrading and to expanding operations to the new mining areas in Zambia and the region, particularly the Democratic Republic of Congo. The IFC Suppliers Development Program did not manage to tackle this factor. The ministries responsible for industrial development and finance, in partnership with all stakeholders, should establish a small and medium enterprise financing scheme.

Another area is fostering regional integration, which can open market opportunities for Zambia's local supply cluster. Regional integration efforts should prioritize infrastructure development and trade facilitation—both are indeed important to cut operational costs across the board for local firms, as well as to facilitate their insertion in regional value chains. The SADC, COMESA, and the Tripartite (COMESA-EAC-SADC) frameworks offer

ideal platforms to raise investment in infrastructural projects and to harmonize export and import procedures, custom transit, and transport regulations. Trade in goods negotiations with the Democratic Republic of Congo, which is not implementing the SADC free trade agreement, should aim at improving market access for local suppliers to the Democratic Republic of Congo mining value chain. These negotiations should be accompanied by negotiations on trade facilitation and nontariff barriers.

Notes

1. In particular, company tax from the mining sector underperformed by more than 50 percent as mining companies anticipated a change in regulation that would lead them to be able to claim less of their capital allowances in 2013 and therefore claimed them before the end of 2012, thus leading to higher refunds in 2013.
2. The outstanding debt stock resulting from these bridge loans was K1,397.5 million as at end-December 2013, and it is not included in the central government domestic debt stock. The interest rate on BoZ bridge loans is the inflation rate plus 2 percent.
3. In 2013 the government announced that it would eliminate the difference between the FRA's buying and selling price for maize. Moreover, the price of fertilizer under the FISP was doubled. Bringing FRA activities on to the central government budget means that all proceeds from maize sales will be coming to the Treasury through a designated account at the central bank and that the FRA's operations will be adequately budgeted for in the budget.
4. In May 2013 retail fuel prices were raised by an average of almost 22 percent.
5. See World Bank (2013) for more details.
6. If one includes the outstanding debt stock resulting from the BoZ bridge loan and the FRA debt, this ratio increases slightly to 32.5 percent. This figure also fails to include parastatal debt and debt guaranteed by the government (in particular Zambia Electricity Supply Corporation's debt), for which we do not have a consistent estimate.
7. The share of non-copper exports computed from official trade statistics is likely to be underestimated, as these figures do not account for unreported flows. Informal cross-border exports of some primary and manufactured products may be high; for example, as much as 80 percent of gemstones exports are thought to go through unofficial channels and are not recorded (AfDB and others 2013).
8. As recently as mid-2012, Zambia was regarded as having the largest stockpile of non-GMO white maize in the world and was attracting considerable interest from the World Food Programme and private buyers in Kenya and beyond.
9. The large increase in the number of exporting firms is encouraging. Recent evidence suggests that regional trade can provide a springboard to success in the global market: for example, Brenton and others (2012) find that African firms that initially start by exporting to the regional market have a higher rate of success (survival) when they export to the global market compared with firms that go straight to exporting to the global market.
10. Arvis and others (2013) estimate trade costs as the price equivalent to the reduction in trade compared with the potential implied by domestic production and consumption in the origin and

domestic markets. This broad concept of trade costs has several elements amenable to policy, such as logistics costs and underlying policies, and costs of crossing borders. The Diagnostic Trade Integration Study update in 2014 covers most of them. This section of the Brief focuses mainly on customs and border management and discusses how to reduce costs associated with regulatory, documentary, and procedural requirements related to international trade at borders.

11. The increase results from a roughly even increase in total time on the Zimbabwean and Zambian sides. On average for 2013, total clearance times for goods entering Zambia were twice as long as clearance times for goods entering Zimbabwe at Chirundu, where total clearance time covers export and import procedures in both countries. This difference may partly be explained by the fact that goods entering Zambia are often consolidated final imports (trucks carry multiple shipments) compared with goods entering Zimbabwe, where shipments are more likely to be full loads and transit trade—and procedures are generally lighter.
12. A recent report notes that "a tripling of the proportion of inputs manufactured locally to about 15 percent of total goods procurement (probably what could be achieved realistically in the medium term) would add some $160 million to local suppliers' turnover, of which between a third and half would be value added in Zambia. While this would certainly be significant at the local level and would results in more than 10,000 new direct jobs, it is an order of magnitude less than the amounts paid by the mining companies in taxes" (ICMM 2014, 69).
13. The discussion focuses on maize exports and competitiveness. Many other agriculture products offer good export potential for smallholder participation, but they tend to be more complicated to produce and market on a wide scale. Compared with these other crops, maize is generally lower value (so is unlikely to provide high cash income except on an extensive scale), but is easier to grow and trade. From a farmer's perspective, maize may also involve less risk compared with nonfood cash crops as it can always be retained and used for home consumption.
14. Responding to rising food prices and uncertainty for the 2012/13 harvest, the government introduced export restrictions on maize in December 2012 that ended plans negotiated with the FRA and other stakeholders to begin trading Zambian maize on the SAFEX Futures Exchange in Johannesburg. In light of further concerns for domestic supply, a formal ban on all private exports on maize grain, maize bran, and "number 3" maize meal was introduced in September 2013 (Statutory Instrument Number 85 of 2013). Government-to-government exports and exports by the World Food Programme were exempted from the trade ban, but only "number 1" breakfast meal, "number 2" roller meal, and stock feeds containing maize bran could be exported by private agents. The ban on maize exports was lifted in early May 2014 through Statutory Instrument (SI) No. 35. The MAL anticipates exports of about 300,000 tons of maize to neighboring countries in 2014.
15. For a period in 2012, for example, the FRA was buying at depots all around the country at K1,300 per ton (about $250) and selling to a list of approved mills for only K1,400 per ton ($270) including delivery to the miller's gate, effectively precluding all types of private trade and competition. As of March 2014, the FRA was still buying from farmers at the same pan-territorial price but had raised its selling price to K1,700 per ton (about $310) with the buyer providing transport.
16. At one point, the subsidy reached 75 percent of the commercial price of fertilizer but was scaled back in 2013 to 50 percent alongside a reduction in the quantity of inputs each participating household is meant to receive from 400 kg of fertilizer to 200 kg and from 25 kg of hybrid seed to 12.5 kg.
17. The Indaba Agricultural Policy Research Institute's analysis of Central Statistical Office data shows that the FISP has had only a modest impact on output prices of

maize. Using price data and FISP allocations for 50 districts over the 2000/01 through 2011/12 marketing years, Ricker-Gilbert, Jayne, and Shively (2013) find that doubling the mean volume of FISP fertilizer allocated to each district reduces retail maize prices by just 1.8 percent to 2.4 percent, all else equal. Therefore, FISP subsidies are essentially transfers to farmers and the risk of them being exported in an open border policy regime is low.

18. Zimbabwe is currently Zambia's largest market for formal sector maize exports but is far from the only foreign buyer. Further analysis could use the methodology developed here to analyze Zambia's competitiveness in other markets and for other commodities.
19. The low DRC and high economic viability of all LCF production models is driven by economies of scale and the high yields due to use of advanced seeds and fertilizers adapted to each farm's location and soil types. The results for irrigated maize further benefit from use of irrigation equipment that is otherwise left idle during the summer months and on land that is usually left fallow. Moreover, for commercial farms that grow tobacco, curing barns can be used to dry early-season maize.
20. Under the Lima program, small farmers can receive seasonal credit for maize through their local ZNFU branch, known as a District Farmers Association. Loans are given out on a group basis in which members are jointly and severally liable for repayment. Borrowers are required to put forward 50 percent cash collateral and are charged 14 percent interest including 9 percent base rate plus 5 percent for insurance. Loan funds are disbursed in kind through the input suppliers who deliver the inputs to the District Farmers Association for onward distribution to the farmer group.
21. High regional transport costs are, in part, due to long delays at borders. To give an example, transport costs from Ndola to Durban or Dar by road are approximately $0.18 per ton/km (assuming 15 tons per twenty-foot equivalent unit), while they are about $2.30 per ton/km from Lilongwe to Lusaka (Malawi DTIS).
22. Similarly, a train from Ndola to Durban, before exiting the port, spends 67 percent of total time at the Victoria Falls and Beitbridge borders (430 hours travel time, 120 hours at Victoria Falls, 168 hours at Beitbridge), before arriving at Durban, where it also spends a long time before final delivery.
23. The government enacted the Zambia One-Stop Border Control Act (No. 8) in 2009. The act enables the negotiation and signature of bilateral agreements with each country with which Zambia wants to establish an OSBP. This is already the case with Zimbabwe and Tanzania—agreements were signed in 2007 and 2010.
24. Experience from other countries suggests that systems for efficient customs and transit data exchange, management, and reporting can have a huge impact. Recent procedural changes at the Malaba border crossing between Uganda and Kenya targeted border management agencies, clearing agents, and truck drivers (by enforcing lodging of pre-arrival declarations and revising traffic and parking rules), thus reducing border crossing times from more than 12 hours in late 2011 to 3 hours in early 2012, even without investment in infrastructure.
25. In Chirundu, parking lots have sprung up in areas close to the border where truckers now wait for their preclearance documents to be processed, reducing official border crossing time but not necessarily total crossing time.
26. A truly functional regional bond scheme, which is unlikely to be established in the short run, would also contribute to reducing delays and costs across the board—but this would also demand improved capacity among CFAs, which would have to be linked to the system.
27. Raballand, Kunaka, and Giersing (2008) estimated that operating costs were in the area of 4.0 cts per ton/km for cross-border vehicle operations, and 4.7 cts per ton/km for domestic operations.
28. The impact of the 2008 decline in copper prices on Zambia's supply industry was significant. The mining houses had

to cut costs and look for value-added services. Many traders were pushed out of the supply chain. Established suppliers had to diversify and to reduce risk.

29. Based on directories of private sector organizations and data shared by the mining companies, the total number of first-tier suppliers in 2009 was 150–200 firms, mostly in the Copperbelt. The estimate explicitly excluded briefcase businessmen, occasional suppliers, and firms exiting the supply chain. Utilities and financial companies and labor contractors were also excluded (Fessehaie 2012).
30. The non-OEM subsidiary in this group was supplying goods that became technologically obsolete.
31. See Section XIII of the 2008 Mines and Mineral Development Act.
32. The analysis was prepared in early March 2014 using an exchange rate of $1.00 = K5.50. Zambia imposes no major restrictions on access to foreign exchange and it is further assumed the financial and economic exchange rates are equivalent.
33. Under the 1995 Mines and Minerals Development Act, and later the 2008 Act, mining companies benefit from value-added tax exemption and the elimination of custom and excise duties on capital equipment. The tax regime only applies to the firms holding mining rights, which includes most the mines but not their suppliers. Therefore, local service providers have to pay customs duties ranging from 15 to 25 percent for some goods—unless these goods qualify for Southern African Development Community free trade agreement preferences—plus value-added tax on all imports. The fiscal regime confers a cost penalty on local suppliers which should be urgently redressed.

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PROMOTING TRADE & COMPETITIVENESS:
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