

Rwanda Economic Update

May 2013 | Edition No. 4

Maintaining Momentum

With a special focus on Rwanda's pathway out of poverty



Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized



THE WORLD BANK
Working for a World Free of Poverty

Rwanda Economic Update

Maintaining Momentum

With a special focus on Rwanda's pathway out of poverty





TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS	i
PREAMBLE	ii
EXECUTIVE SUMMARY	iii
I. RECENT ECONOMIC DEVELOPMENTS	1
1.1. Rwanda’s Economy — Resilience in the face of uncertainty	2
1.2. Inflation — Declining, but risks remain as import prices rise	8
1.3. External Position — A growing export base, but highly dependent on aid	9
1.4. Monetary Policy, the Exchange Rate — Ongoing reforms, conflicting pressures	14
1.5. Fiscal Policy — Strong performance in spite of enormous challenges	17
1.6. Economic Outlook and Risks	22
1.6.1. The Global Outlook — Gathering momentum?	22
1.6.2. Rwanda’s Outlook — Positive but highly uncertain	23
1.6.3. Risk Scenario — How a large “aid shock” would affect the Rwandan economy	25
II. FOCUS SECTION: RWANDA’S PATHWAY OUT OF POVERTY	29
2.1. Introduction	30
2.2. A Decade of Growth and Poverty Reduction	31
2.2.1. Strong Household Consumption growth and Poverty Reduction	31
2.2.2. Absolute Gains for Everyone, but Largest for the Very poor and the Very Rich	33
2.2.3. A Small Decrease in Inequality and a Relative Loss for the Middle Class in Kigali	36
2.2.4. Poverty Still High, Though Depth and Severity are Decreasing	38
2.3. Different Patterns in Both Parts of the Decade	38
2.3.1. 2001-2006: Weak Poverty Reduction despite Growth	39
2.3.2. 2006-2011: Strong Growth, Decreasing Inequality and Impressive Poverty Reduction	40
2.4. The Drivers of Consumption Growth and Poverty Reduction	41
2.4.1. Key Evolutions during the Previous Decade	42
2.4.2. What Explains the Growth in Household Consumption in Rwanda?	46
2.5. Poverty Reduction in Rwanda: The Way Forward	50
ANNEXES	53
REFERENCES	70

LIST OF FIGURES

Figure 1: Agriculture Accounted for the Bulk of National Poverty Reduction	vi
Figure 2: Rwanda’s growth remained solid in 2012...	2
Figure 3: ...and continued to outpace EAC peers	2
Figure 4: Prices of Rwanda’s Major Export products were among the volatile prices	3
Figure 5: Rwanda’s recent growth has been resilient amidst a weaker global environment	3
Figure 6: The services sector has regained its role as the key driver of growth in 2012...	4
Figure 7: ...with private sector services, especially trade, transport and communications, driving services growth	4
Figure 8: Mobile Phone Penetration in Rwanda	5
Figure 9: The ICT sector was the main destination of FDI	5
Figure 10: After the very strong growth of 2011, construction activity slowed in 2012, reducing overall growth in the industrial sector	6



Figure 11: Rwanda's banking sector has recorded a strong performance	7
Figure 12: Financial inclusion in Rwanda has improved significantly in recent years	7
Figure 13: Agricultural growth continued its downward trend	8
Figure 14: Inflation eased off in the second half of 2012...	9
Figure 15: Rwanda's inflation is low compared to other EAC countries, but higher than the SSA average	9
Figure 16: Imports growth accelerated in 2012, driven by strong growth in capital and raw materials...	10
Figure 17: ...and this increase in imports is widening Rwanda's trade deficit	10
Figure 18: High growth in non-traditional sectors suggests a potential diversification of Rwanda's narrow export base	11
Figure 19: Rwanda's main exports did not have a good year in 2012	11
Figure 20: Foreign aid inflows fell dramatically and as a result the Balance of Payments turned negative in 2012	13
Figure 21: ...which have been the main source of foreign exchange reserves	13
Figure 22: Central Banks across the EAC moved into an expansionary phase in 2012, while the BNR held its policy rate unchanged	16
Figure 23: The Rwf depreciation gathered pace in H2 2012 as delays in aid disbursement lengthened	16
Figure 24: The real exchange rate depreciated, though slightly as Rwanda's inflation was lower than key trading partners	16
Figure 25: Rwanda's tax collection remains among the lowest in SSA...	18
Figure 26: ...with donor funding making up for the shortfall	18
Figure 27: Aid flows for Rwanda has increased substantially	19
Figure 28: The main disbursement channel of aid to Rwanda is now through the public budget	19
Figure 29: Social spending comprises the majority of ODA-financed activities	20
Figure 30: Aid flows constitute a major source of financing of public expenditures in Rwanda	20
Figure 31: Growth across Rwanda's Major Trading Partners is expected to rise modestly in 2013 and 2014	22
Figure 32: Global commodity prices are expected to track global growth, with prices relatively flat through 2013, before increasing modestly in 2014	22
Figure 33: However, Rwanda is still projected to outperform regional peers and the sub-Saharan average in 2013 and 2014	23
Figure 34: Transmission Mechanisms of a Reduction in Aid to the Rwandan Economy	25
Figure 35: The current account will remain at around historic highs under each scenario...	26
Figure 36: ...with GDP growth slowing to the lowest rate since 2007 under the worse-case scenario	26
Figure 37: An aid shortfall of 50 percent in budget support in FY2012/13 could hold back poverty reduction by 1.4 percentage points by 2013	28
Figure 38: This would imply that approximately 150,000 people in Rwanda will not be able to escape poverty by 2013 relative to a situation in which the aid shortfall would not have taken place	28
Figure 39: An Aid Shortfall Could Significantly Delay the Attainment of Universal Primary Education	28
Figure 40: The Percentage of people Below the Poverty Line Sharply Decreased	33
Figure 41: Though the Absolute Number of People in Poverty Declined only Marginally due to Population Growth	33
Figure 42: The Poor Grew Faster than the Non-Poor Between 2001 and 2011	33
Figure 43: Only Two Regions Experienced a Drop in the Number of Poor	34
Figure 44: High Growth for the Very Poor and Very Rich in Kigali	35
Figure 45: Strong Growth for the Extremely Poor in the Rest of the Country	35
Figure 46: The Consumption Share of the Poorest 10% and 20% Increased Between 2001 and 2011	36



Figure 47: Falling Consumption Shares of the Wealthiest Groups and of the Kigali Middle Class	37
Figure 48: Decrease in Inequality, Particularly Among the Poor	37
Figure 49: The Poor Have Moved Closer the Poverty Line between 2001 and 2011	38
Figure 50: The Non-Poor Grew Faster than the Poor between 2001 and 2006...	39
Figure 51: While the Poor Grew Faster than the Non-Poor between 2006 and 2011	39
Figure 52: The Consumption of the Poor Moved closer to the Poverty Line Between 2001 and 2006	40
Figure 53: Production of Cereals, Pulses and Roots and Tubers Increased Substantially over the Past Decade	42
Figure 54: Agricultural Yields Increased Sharply over the Past Five Years	43
Figure 55: Non-Farm Activities Gained Importance in the Activity Portfolio	44
Figure 56: Rwanda is Entering the Demographic Transition	45
Figure 57: Agriculture is the main driver of consumption growth in rural areas; in Kigali it is the move to wage employment	46
Figure 58: The Growth in the Agriculture Sector has Significantly Contributed to the Rise in Consumption in Both Poor and Richer Households	47
Figure 59: Diversification into Non-farm Self-Employment has Been More Important than Wage Employment, Especially for the Rural Poor	47
Figure 60: Decreased Dependency Ratios Spurred by Falling Fertility Rates also Contributed Significantly to Consumption growth	47
Figure 61: Increased Engagement in Wage Employment has been the Main Driver of Consumption Growth in Kigali...	48
Figure 62: ...While the Falling fertility Rates and Dependency Ratios Have Given an Extra Boost to Consumption	48
Figure 63: A Substantial Number of Wage Jobs Were Created between 2001 and 2011	49
Figure 64: Agriculture Accounted for the Bulk of National Poverty Reduction	50

LIST OF TABLES

Table 1: Foreign inflows to Rwanda are dominated by donor inflows, while exports and private sector financial flows remain relatively small	12
Table 2: Foreign assistance inflows have dramatically declined since mid-2012	17
Table 3: Government Operations, 2009/10 – 2012/13	21
Table 4: The reduction in aid flows is projected to slow down growth in 2013 before a partial recovery in 2014	24
Table 5: Solid Household Consumption Growth and Poverty Reduction Between 2001 and 2011	32
Table 6: Growth in Rwanda was Pro-Poor but Poverty was relatively Inelastic to Growth	32
Table 7: The Number of People in Poverty Decreased in the Regions With Below Average Population Growth	34
Table 8: The Boom in Agricultural Production Happened in the Last Five years	42
Table 9: Significant Changes in Household Consumption, Income Activities, and Human Capital during the Past Decade	43
Table 10: Changes in Women’s Education and Behaviors are Driving Down Fertility	45

LIST OF ANNEXES

Annex 1: Rwanda: Selected Economic Indicators	54
Annex 2: Rwanda Gross Domestic Product	55
Annex 3: Rwanda - Tourism sector Data	56
Annex 4: Rwanda - Inflation (percent)	58
Annex 5: Rwanda – Key Interest rates (percent)	59



Annex 6: Rwanda Exchange rate (Rwf/US\$)	60
Annex 7: Food crop production trends in Rwanda, 2007-2012	61
Annex 8: Rwanda – Gross Reserves	63
Annex 9: Different Patterns of Growth and Poverty Reduction in Both Halves of the Decade	64
Annex 10: Summary Tables of Descriptive Statistics by Welfare Groups	65
Annex 11: Statistical Decomposition Methods and Results	67

LIST OF BOXES

Box 1: Understanding Aid Dependency	iv
<i>How the shortfall in aid can affect the Rwandan economy</i>	
Box 2: Weakened, with a cloudy outlook	3
<i>Recent development in the Global Economy</i>	
Box 3: Getting Connected	5
Rwanda’s communications revolution	
Box 4: Making the Money Flow	7
<i>Recent financial sector developments in Rwanda</i>	
Box 5: With a Little Help From My Friends	12
<i>How foreign aid enters the Rwandan economy</i>	
Box 6: Planning for the Future	18
<i>Rwanda’s AGACIRO Development Fund</i>	
Box 7: What’s in Your Wallet?	19
<i>Using aid flows to create fiscal space for public investment</i>	
Box 8: Progress, Interrupted?	27
<i>Estimated social and poverty impacts of an aid shortfall to Rwanda</i>	
Box 9: The Cost of Basic Needs	32
<i>Rwanda’s Poverty Line</i>	
Box 10: Relatively Better than Absolute	34
<i>Absolute Number of Poor Fell Only Slightly Due to High Population Growth</i>	
Box 11: Sharing is Caring	36
<i>The Definition of Pro-Poor Growth</i>	
Box 12: Kigali’s Missing Middle	37
<i>A Falling Consumption Share for the Middle Class in Kigali</i>	
Box 13: Multiplying a Lot Less	45
<i>Determinants of Fertility are Moving in the Right Direction</i>	
Box 14: A Hard Day’s Work Multiplying a Lot Less	49
<i>Wage Employment Has Not paid Off for the Poor</i>	



ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AgDF	Agaciro Development Fund
ATMs	Automated Teller Machines
BNR	Banque Nationale du Rwanda
BoP	Balance of Payments
CAADP	Comprehensive African Agricultural Development Programs
CIP	Crop Intensification Program
DEC	Development Economics
DHS	Demographic and Health Surveys
DRC	Democratic Republic of Congo
EAC	East African Community
EC	European Commission
EDPRS	Economic Development and Poverty Reduction Strategy
EICV	Enquête Intégrale des Condition de Vie des ménages
FDI	Foreign Direct Investment
FSC	Financial Stability Committee
FY	Fiscal Year
GDP	Gross Domestic Product
GoR	Government of Rwanda
Ha	Hectare
HIPC	Highly Indebted Poor Countries
ICT	Information and Communication Technologies
KCC	Kigali Convention Center
Kg	Kilogram
L-T-D	Loan to Deposit
LWH	Land Husbandry, Water Harvesting and Hillside Irrigation
MBD	Major bilateral
MINECOFIN	Ministry of Finance and Economic Planning
MPC	Monetary Policy Committee
MTD	Major Trading Partners
NISR	National Institute of Statistics of Rwanda
NPL	Non-Performing Loans
ODA	Official Development Loans
OECD	Organization for Economic Cooperation and Development
PEFA	Public expenditure Framework Assessment
PPP	Purchasing Power Parity
PRSP	Poverty Reduction Strategy Paper
REU	Rwanda Economic Update
RSSB	Rwanda Social Security Board
Rwf	Rwandan Franc
SACCOs	Saving and Credit Cooperatives
SMS	Short Message Service
SSA	Sub-Saharan Africa
SSFR	Social Security Fund of Rwanda
UK	United Kingdom
UN	United Nations
US	United States

PREAMBLE

The Rwanda Economic Update reports and synthesizes recent economic developments and places them in a medium term and global context. It analyzes the implications of these developments and policies for the outlook of Rwanda's economy. In this way, these reports contribute to the implementation of the Bank's Africa Strategy. The Economic Update reports cover in each edition a special feature on a selected topic. It is intended for a wide audience, including policy makers, business leaders and other market participants, and the community of analysts, engaged in Rwanda's economy.

The fourth edition of Rwanda Economic Update was prepared by the Poverty Reduction and Economic Management team at the World Bank Country Office in Rwanda. The team was led by Marco Antonio Hernandez (Country Economist). Tom Bundervoet (Poverty Economist) led the Focus Section on Rwanda's Pathway out of Poverty. Peace Aimee Niyibizi (Economist) led the analysis of recent economic developments. The team was supported by David Stephan, Andrew Blackman, and Roger Sullivan. Wolfgang Fengler (Lead Economist) supervised the team. Johannes Zutt (Country Director), Carolyn Turk (Country Manager), Pablo Fajnzylber (Sector Manager), and Paolo B. Zacchia (Acting Sector Manager) provided overall guidance.

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 World Bank does not guarantee the accuracy of the data included in this report, nor does it endorse the boundaries, colors, denominations, and other information shown on any map in this report.

For more information about the World Bank and its activities in Rwanda, please visit: www.worldbank.org/rw. If you would like to be included in the email distribution list of this semi-annual series and related publications, please contact singabire@worldbank.org.

For questions and comments related to this publication, please contact Marco Antonio Hernandez at marcohernandez@worldbank.org.



EXECUTIVE SUMMARY

Rwanda's economy is estimated to have grown by a robust 8 percent in 2012, continuing a decade-long period of strong economic growth. The economic expansion was driven by buoyant private sector activity, particularly in the services sector—where growth exceeded expectations. This strong economic performance has allowed Rwanda to claim for the third year in a row, the title of the fastest growing economy in the East African Community.

The domestic economy remained strong despite an estimated 20 percent reduction in Official Donor Assistance (ODA) in 2012, following the intensifying of the conflict in Eastern Congo.¹ ODA represents a significant source of government financing and foreign exchange, equivalent to around 12 percent of GDP and over 40 percent of public expenditures. In the current fiscal year, the Government was expecting around US\$400 million of donor budget support, as noted in its original budget. The Government revised its budget in March 2013, which projects budget support at US\$311 million, about 80 percent of what had been expected in the original budget. This reduction in aid is creating challenges for the Government to maintain its economic growth and poverty reduction momentum.

The Government has so far been able to offset the aid reduction, through drawing down foreign reserves and increasing domestic borrowing. This enabled non-discretionary spending for wages, interest payments, social expenditures and transfers to continue. The government also reprioritized spending, and maintained prudent

monetary policy, aimed at curtailing inflationary pressures. The private sector, especially transport and telecommunications, performed strongly, taking up much of the slack created by reduced public expenditures. In spite of what could have been a significant blow, so far, the economic impacts of the aid shortfall have been relatively muted.

While Rwanda's macroeconomic response has been effective, so far, in stabilizing the economy, the Government cannot indefinitely drawdown foreign reserves and increase domestic borrowing. These policies have already driven up interest rates and led to a depreciation in the currency. Rwanda thus entered 2013 with a smaller buffer of foreign reserves (covering around 3.2 months of imports as of February 2013) in comparison to the situation a year ago (about 5 months of imports).

Because Rwanda remains highly reliant on official development aid, its projected growth is correlated with the level of external aid flows. Simulation analysis projects that in a scenario in which the level of budget support is 50 percent below the expected level in the original budget for the current fiscal year, GDP growth in 2013 would be over 1.5 percentage points, lower than in a scenario without a shortfall in aid. This slower growth rate would be a substantial setback in Rwanda's journey towards the ambitious poverty targets set in the Government's forthcoming Economic Development and Poverty Reduction Strategy, the EDPRS II, and its 'Vision 2020' policy framework.

¹ The United Nations issued a report in mid-2012 on activities in the neighboring Republic of the Congo by groups that were allegedly back by the Government of Rwanda. Although the Government of Rwanda strongly denied the report's findings, several donors suspended or reduced their ODA.

Box 1**Understanding Aid Dependency***How the shortfall in aid can affect the Rwandan economy***Lower aid inflows can reduce economic growth through a series of direct and indirect transmission channels.**

The main impact on activity would come from a reduction in public expenditure in response to lower budget revenues, with the government reducing investment spending and consumption of goods and services. As the biggest single employer, cuts to government operations could also reduce employment. These factors would have spillover effects to the private sector through lower incomes, slowing overall economic activity and employment. Lower aid inflows would decrease foreign currency liquidity, and would likely lead to a further depreciation of the exchange rate and increased borrowing costs. These factors could push up the cost of imported inputs, constrain the private sector's ability to invest, and reduce access to foreign-currency working capital for importers and exporters. Overall, these effects would likely lead to larger budget and current account deficits, put upward pressure on inflation, and eventually slow down investment and growth.

Lower aid inflows can also have significant consequences for the poor in Rwanda. In addition to its macroeconomic impact, a reduction in donor funding has the potential to significantly slow the progress Rwanda has made over the last decade in reducing poverty and improving the living conditions of its citizens. A close link between government spending funded by ODA and poverty reduction, highlights the vulnerability of Rwanda's development achievements to a sudden reduction in foreign aid.

Source: World Bank staff.

Strong Growth despite Weaknesses in some Critical Sectors, but Rising Risks

Growth in 2012 was fuelled by the services sector, which registered double digit growth, while the performance of the agriculture sector was modest. Trade, transport and telecommunications services were the main drivers of growth in the services sector, generating about 40 percent of the growth in real GDP in 2012. Continued execution of most planned government expenditures has helped to maintain momentum in service sectors, such as communications and finance. Growth in the industrial sector slowed due to a decline in tin production, and increased electricity prices. Meanwhile, agriculture, a central part of the Rwandan economy contributing about 13 percent to GDP growth in 2012, recorded modest growth of 3 percent. Adverse weather conditions were the primary cause of a lower producing-than-expected food harvest.

Inflation declined throughout the second half of 2012, reflecting lower growth in import prices and prudent monetary policies. Lower international energy prices and a moderation in food prices as well as the Central Bank's tighter monetary policies, have supported declining inflation; between October 2011 and May 2012, the BNR increased its policy rate from 6.0 percent to 7.5 percent. However, inflationary pressures

remain. While the headline rate remains low, at 3.9 percent in December 2012, the depreciation of the currency—which fell by 3 percent in the second half of 2012—is beginning to put upward pressure on import prices, which rose in October 2012, after falling for 14 consecutive months.

Rwanda's current account deficit is projected to have reached a record 11.4 percent of GDP in 2012, reflecting the significant impact of the shortfall of aid, and the imbalance of imports and exports. The reduction in aid flows, which account for most foreign inflows, has widened the current account deficit. Import levels have remained high, reflecting robust activity in the private sector. Exports have also grown recently, especially non-traditional export products, helping to diversify Rwanda's exports beyond its traditional products, namely minerals, coffee and tea. However, this has not been enough to offset the growth of imports, and the trade deficit has widened. The widening of the current account deficit pushed the Balance of Payments into deficit for the first time since 2003, reducing international reserves by almost 20 percent during 2012.

The execution of the budget has remained high despite the difficulties created by aid shortfalls. The government covered some of the aid shortfall through domestic borrowing, and most importantly, was able to execute 90.4

percent of its original budget for the first half of the fiscal year 2012/13 (July to December 2012). The Government prioritized spending on non-discretionary items such as wages and social spending; the pace of other expenditures resumed towards the end of 2012, after the government increased its borrowing. However, some externally-funded capital expenditures were delayed. Improvements in tax administration including higher non-tax revenue collection, receipts from the UN peacekeeping operations, and the strength of the private sector, helped to increase domestic tax collections, which in turn helped to ease the financing constraints created by the aid shortfall.

The outlook for Rwanda's economy remains broadly positive, with growth, projected at 7.0 percent in 2013² and 7.5 percent in 2014.

The positive economic outlook is contingent on continued strong economic management by the government, along with external borrowing to offset lower ODA inflows compared to previous fiscal years. If the aid shortfall were to reverse, increased government expenditure and increased foreign currency inflows could spur even faster economic growth.

Rwanda's medium-term social and economic outlook remains positive, but the economy will need to strengthen its resilience, given the uncertainty over future external financial flows. Rwanda's quick reaction to the 20 percent decline, year-on-year, in ODA in 2012 has maintained the economy on a steady keel. However, the short term measures that included a drawdown of foreign reserves and domestic borrowing, are not a long term solution to declining ODA levels. Rwanda has available a number of options that can bolster its resilience to diminishing aid flows and other external shocks. They include accelerating efforts to expand the domestic tax base and the export

base further, and strengthening the financial system's ability to mobilize savings and spur private sector investment. In addition to the growing service sector, agriculture is another area where Rwanda has substantial capacity to build on current success, and continue expanding productivity and job creation, including in off-farm activities.

Besides resilience, becoming more competitive will enable Rwanda to reduce its aid dependency over the medium-term.

One of the most effective strategies for improving competitiveness is to invest in upgrading the skills of the labor force. Given the expected growth in the telecommunications and services sector, specific training programs in these areas could have strong economic benefits. Improving the supply of skilled labor, along with regulatory reform in the financial sector, could help attract foreign direct investment (FDI); another sign of a more competitive economy building on recent progress made in terms of the simplification of business regulations.³ FDI flows represent a vote of confidence in the country's macroeconomic framework, and also helps to finance the current account deficit, without creating debt. Finally, as a small, high density, landlocked country, Rwanda has all the incentives to favor an aggressive regional integration process to exploit economies of scale and specialization.

Rwanda's Decade of Poverty Reduction

Standards of living for all Rwandans improved significantly over the past decade, resulting in rapid poverty reduction and decreased inequality. Household consumption per adult-equivalent grew at 2.5 percent per annum, and was stronger for the poor than for the non-poor, leading to decreased inequality and a 14 percentage point drop in the poverty headcount rate to 44.9 percent in 2011. In addition, the

²The Government projects a 7.5 percent growth in 2013.

³Rwanda has made progress in improving business regulation. The World Bank Group's 2013 Doing Business reports ranks Rwanda 52 out of the 185 economies. It also names Rwanda the number 2 improver globally and top improver in Sub-Saharan Africa since 2005 (see www.doingbusiness.org).

Government's focus on eradicating extreme poverty was associated with particularly strong growth in consumption for those Rwandan's living in extreme poverty (less than US\$0.81 a day), with the incidence of extreme poverty falling by sixteen percentage points over the decade.

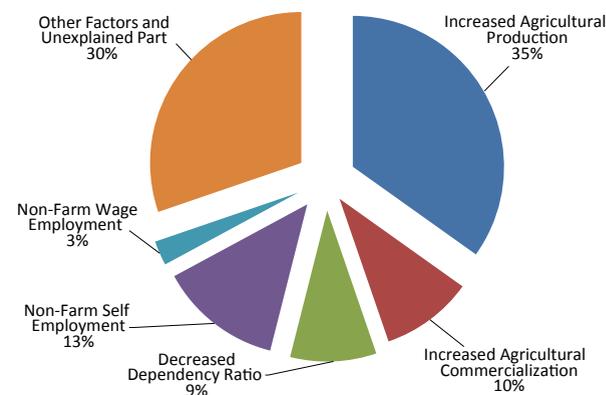
However, the patterns of growth and poverty reduction differed substantially between the first and second half of the decade. In the first half of the decade, consumption growth was concentrated in Kigali, where only a fraction of Rwanda's poor live. The growth in rural areas was weaker and disproportionately benefited wealthier households. The result was a reduction in poverty of only two percentage points, and a sharp increase in inequality. In comparison, the experience in the second half of the decade was remarkable. Growth was stronger in rural areas than in Kigali, and benefited the poor much more than the non-poor. The net result was a 12 percentage point fall in the poverty headcount rate, and a significant decrease in inequality.

Higher agriculture productivity has been the main driver of growth and poverty reduction. Although the share of agriculture in GDP decreased significantly over the past decade, agriculture remains the backbone of the Rwandan economy, in terms of employment and income-generation for the majority of households. Driven by increased investments in agricultural inputs, land consolidation and infrastructure, agricultural production at household level, more than doubled during the past decade. Together with increased commercialization, reflected in the rising share of harvests sold on local markets, the increase in production accounted for about 45 percent of the reduction in poverty, observed over the last decade.

The move towards income-generating activities in the non-farm sector emerged as an important secondary driver of poverty reduction. During

the past ten years, the fraction of Rwandan households engaged in non-farm activities, in addition to agriculture which more than doubled. This is true for both self-employment and wage employment. As a result, the average number

Figure 1: Agriculture Accounted for the Bulk of National Poverty Reduction
(Contribution of the Various Factors to Poverty Reduction between 2001 and 2011, percent)



Source: EICV1 and EICV3 and World Bank staff calculations.

of income sources of Rwandan households has increased sharply. The observed diversification had two positive effects. First, diversification has reduced income risk inherent to engaging in rain-fed agriculture, as households now have other income activities, to cushion a potential shock. Second, diversification also explains the rise in consumption among both the rural and urban poor. While taking up non-farm self-employment in small informal household businesses has been important for rural households, the move towards non-farm wage employment emerged as the single main driver of household consumption growth in Kigali. Taken together, the move to non-farm activities explains 16 percent of the overall reduction in poverty during the last ten years. At the national level, self-employment has been far more important for growth and poverty reduction, than wage employment.

Rwanda's rapid poverty reduction is associated with the beginning of a demographic transition.

Falling fertility rates have decreased the nation's average family size and child dependency ratio, which have been associated with increased disposable incomes. The proportion of working-age adults in total population will increase over the coming decade, opening the door for a potential demographic dividend.

Although Rwanda's performance in terms of shared growth and poverty reduction has been remarkable, several factors merit close attention. Despite the downward trend on a national level, inequality in Kigali increased over the past decade, due to sluggish growth of the 'middle class'—defined as the share of the population between the 40th and 80th percentile of the income distribution—which resulted in a falling share of total consumption. Another concern is the stagnation in the number of people below the poverty line. Despite the large decrease in poverty headcount, the absolute number of people in poverty declined by only 1 percent, due to high population growth.

The transition from independent farming to other forms of employment has been a mixed success. While the transition to self-employment in small informal, non-farm businesses has been associated with welfare gains across the board, the observed move to wage employment has not helped the rural poor. While the proportion of poor rural households engaged in non-farm wage employment tripled over the past decade, this has not been associated with consumption gains. Factoring in the move to wage employment in the farm sector, the increased engagement in wage employment has been largely negative for the rural poor. Given their small landholdings and large household sizes, independent farming cannot absorb all labor available in poor rural households. Because of their low levels of education and skills, in most cases, the only alternative is unattractive wage labor in the informal rural economy.

Maintaining Momentum for the Decade Ahead

Further increases in agricultural productivity will likely be the main driver of poverty reduction in the decade to come, especially if combined with increased business activity related to the boom in agriculture. Since virtually all of Rwanda's poor depend on agriculture to generate income, scaling up agricultural intensification and commercialization will be the quickest way to get significant numbers of people out of poverty. Currently, the Government's and development partners' main agricultural programs cover only a small part of available land, which means that there is the opportunity to expand them, and significantly reduce poverty further. The scaling up of agricultural programs should be linked to the promotion and facilitation of business activities that can thrive on increased agricultural production, especially related to trade, post-harvest storage and processing activities.

Providing jobs to the two million people who will enter the workforce in the decade to come will be crucial to sustaining Rwanda's achievements. The agriculture sector already suffers from high rates of underemployment, and will, given productivity increases, likely require less labor in the decade to come, meaning that agriculture will not be able to absorb the extra labor. Since less than 20 percent of working-age Rwandans will have completed secondary education by 2020, most of them will not qualify for modern wage jobs in the formal economy. This suggests that the bulk of job creation will have to come from informal businesses, in the non-farm (or agricultural processing) sector. Household businesses have been an important source of jobs in Rwanda over the past decade. Improving the business environment for these small firms, and establishing policies to facilitate their operation could potentially offer significant returns in terms of job creation, and future growth and poverty reduction.

PART ONE

Recent Economic Developments

Rwanda's economy grew by 8 percent in 2012, making it the strongest performer in the East African Community (EAC), and one of the fastest-growing economies in the world. Rwanda has followed a course of prudent macroeconomic management (including the effective use of aid), pursuing sound fiscal and monetary policies, which have underpinned its strong economic performance, and increased its resilience during a period when the global economy has been turbulent. Nonetheless, risks rose significantly due to a shortfall of aid in the second half of 2012. The impact of this shortfall on the real economy has so far been muted because of swift and positive actions taken by the Government. Increased domestic borrowing has enabled the government to execute most of its budget, including social expenditures and wages. This has supported activity in the private sector, especially in the services sectors like communications and finance, with overall growth exceeding expectations. However, this growth has not been without cost, with the increase in public domestic borrowing, leading to a sharp increase in interest rates. Rising demand for imports and a shortage of foreign currency, have also led to the depreciation of the exchange rate.



1.1. Rwanda’s Economy — Resilience in the face of uncertainty

The economic environment in Rwanda has changed significantly since mid-2012. In the July 2012’s *Rwanda Economic Update*, the outlook for the Rwandan economy was positive with growth in the first half of 2012 close to 8.5 percent, and a lower than predicted budget deficit. However, following the publication of a UN report alleging that the Government supported a rebel group in the Democratic Republic of Congo (DRC), various donors have delayed or cancelled their planned aid to Rwanda. As a result, only 40 percent of expected budgetary grants for the first half of the fiscal year 2012/13—July to December 2012—have been disbursed.

In response to the aid shortfall, the Government of Rwanda (GoR) moved quickly to implement policies that have maintained robust growth in the economy. The government has financed some of the aid shortfall, through increased domestic borrowing. This has meant that the execution of non-discretionary spending such as wages and social expenditures has remained high. The maintenance of public spending has had positive spillovers to the private sector, especially services. Indeed, the Rwandan economy grew by 8.0 percent

in 2012, higher than the 7.4 percent growth rate projected in the July 2012 *Rwanda Economic Update*, prepared prior to the shortfall of aid.⁴

The service sector was the key driver of growth in 2012. In 2012, the sector expanded by 12.2 percent, year-on-year, compared to a rate of 8.9 percent in 2011 (Figure 2). This expansion was driven mainly by trade services and transport and communication activities. Service sectors are heavily influenced by income growth. The government’s ability to continue executing most budgeted expenditures has helped to maintain growth in services such as public administration, health and education. After 3.9 percent in 2011, hotels and restaurants grew by 7.5 percent, as the number of tourists to Rwanda increased by 18.5 percent from 2011 to reach over one million arrivals. The number of park visitors grew by 6.2 percent during the year.

The fastest growing services sub sector in 2012 was transport and communications. The sub sector grew by 19.3 percent year-on-year, in 2012, up strongly from 5.3 percent in 2011 (Figure 7). This is the highest growth rate since

Figure 2: Rwanda’s growth remained solid in 2012...
(Real GDP growth, percent, year-on-year)

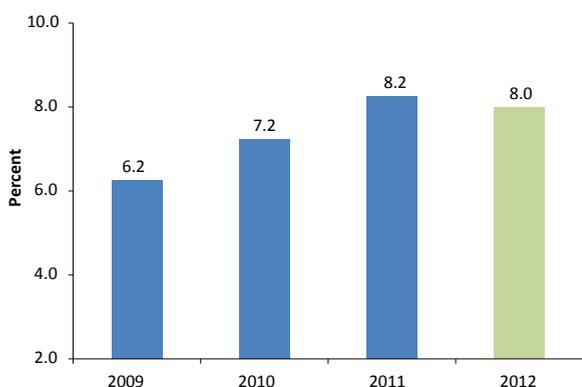
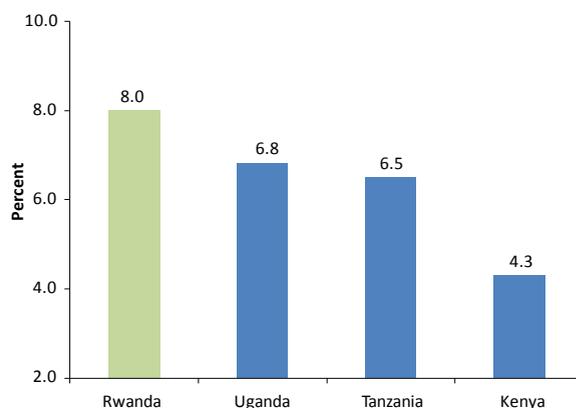


Figure 3: ...and continued to outpace EAC peers
(Real GDP growth, percent)



Source: National Statistics Office of Rwanda (NISR), and World Bank’s *Global Economic Prospects*.

⁴It is important to note that the Government’s projection was 7.7 percent growth for 2012.

Box 2

Weakened, with a cloudy outlook*Recent development in the Global Economy*

Rwanda, like other developing countries, continued to face an uninspiring external environment in 2012. The tentative recovery has suffered new setbacks and uncertainty weighs heavily on the outlook. Europe's recession put a brake on activities across all regions of the world in the second half of 2012. Indicators of activity and unemployment showed increased and broad-based economic sluggishness. The Euro area periphery has seen a marked decline in activity, driven by financial difficulties evident in a sharp increase in sovereign rate spreads. Activity has disappointed in other economies too, notably the United States and United Kingdom. Spillovers from advanced economies have held back activities in developing economies. These spillovers have lowered commodity prices, including prices of Rwanda's key export products—coffee and tin (Figure 4). In summary, the global economy has been softer in 2012 than a year earlier, weighted down by weak economic performance in high-income economies, where growth is estimated to register a lukewarm 1.3 percent.

Despite these dampening effects, growth in sub-Saharan Africa remained robust at 4.6 percent in 2012 (Figure 5). About a third of countries in the region grew by at least 6 percent. Robust domestic demand, steady remittance flows, and increased export volumes were supportive to the region's growth. Foreign direct investment flows remained resilient, with the majority of flows being directed to longer time horizon investment projects in the extractive industries sectors. According to the World Bank's global Economic Prospects report of January 2013, the region is projected to grow at its pre-crisis average rate of 5 percent over the 2013-15 period. Nevertheless, risks to the outlook remain tilted to the downside, as ongoing fiscal consolidation in the Euro Area and the United States, and weaker growth in China could potentially derail the growth prospects in the SSA region.

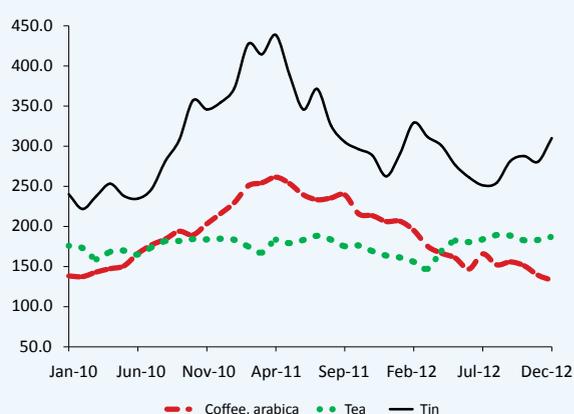
Fiscal and monetary policy also generally moved towards an accommodative stance in response to the deterioration in the global economy, and as moderating inflation pressures in the region allowed space for easing policy. These developments were consistent with dynamics in the EAC economies, where easing price pressures, and the weaker outlook for exports demand also motivated a loosening in monetary conditions. The Rwandan central bank, on the other hand, maintained its policy rate unchanged through the second half of 2012, as authorities navigated the strong countervailing forces of a rapidly growing private sector, and significant uncertainty regarding the outlook for foreign donor inflows, as outlined in the Monetary section of the report.

Recent economic activity has shown positive signs of a possible first sustained upswing since the outbreak of the global financial crisis. Signs such as the easing of financial market tensions since the third quarter of 2012, and the pick-up in the industrial production led by developing countries, point to an encouraging improvement in market risk perceptions. Nonetheless, the global economy still remains fragile with ongoing fiscal consolidation, high unemployment, and deleveraging in high-income countries, and slower growth in some large developing countries.

Source: World Bank staff.

Figure 4: Prices of Rwanda's Major Export products were among the volatile prices

(Price indexes, US\$ nominal 2005=100)

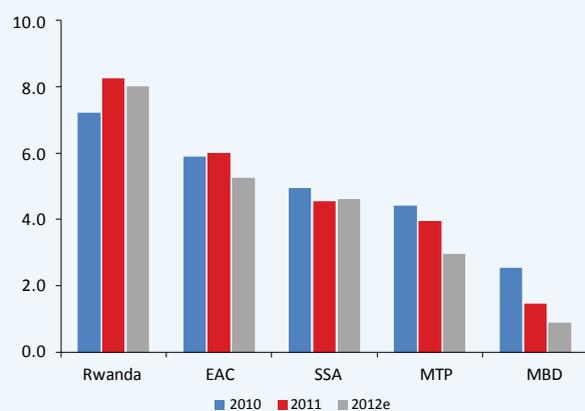


Note: Trading partner and bilateral growths are weighted by Rwanda's export values and donor inflows.

Source: World Bank staff estimates based on data from the World Bank's DEC Prospects Group and OECD.

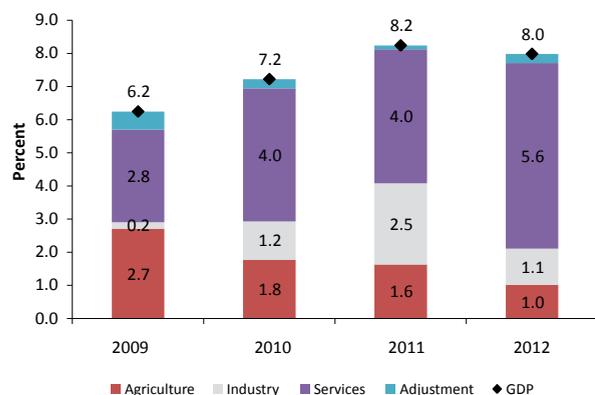
Figure 5: Rwanda's recent growth has been resilient amidst a weaker global environment

(Real GDP growth, percent)



Source: World Bank's DEC Prospects Group.

Figure 6: The services sector has regained its role as the key driver of growth in 2012...
(Contribution to real GDP growth, percentage points)

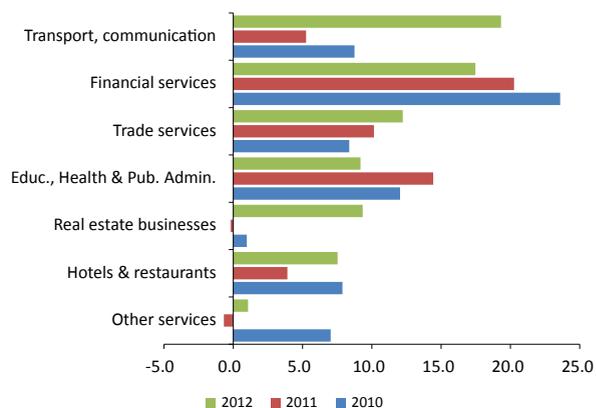


Source: NISR and World Bank staff estimates.

the start of the global financial turmoil in 2009, and well above the previous 5 years' annual average growth of 12.4 percent. The surge in mobile phone use has driven the growth in telecommunications, and also had spillover effects on the banking sector (Box 3). The telecommunication sub sector has seen the entry of a new operator, Airtel, after the revocation of Rwandatel mobile operator license a year ago. Employment in mobile operators has increased by 6.2 percent year-on-year in September 2012. Road transport companies and airlines have increased capacity with road capacity increasing by 32.3 percent. Meanwhile, in addition to the seven international airplane carriers operating in Rwanda, two new carriers (Turkish Airlines and South African Airlines) began operating flights to Kigali in 2012. Furthermore, the national carrier RwandAir, saw a 40 percent growth in average passengers per day in 2012.

Growth in financial services remains solid, but has recently slowed. The financial sector continues to contribute positively to economic growth, although the growth rate decelerated from over 20 percent during 2010-2011, to 17.5 percent in 2012 (Box 4). Indicators of financial soundness remain positive, with growth in total bank assets expanding by nearly 15 percent from

Figure 7: ...with private sector services, especially trade, transport and communications, driving services growth
(Annual growth, percent)



the end of 2011 to December 2012. The quality of banks' loan portfolios has also improved, as the ratio of non-performing loans (NPLs) continued to decrease, falling from 8.2 percent in December 2011, to 6.1 percent in December 2012 (Figure 11). The insurance industry continued to expand in 2012, with the expansion in premiums collected for both life and non-life products.

Growth in the industrial sector weakened as activity in the mining and manufacturing sectors contracted (Figure 10). Overall, industrial growth fell to 7.2 percent in 2012, from 17.6 percent in 2011. Mining, contracted by 9.8 percent growth in 2012, compared to a stellar growth of 49.7 percent in 2011. This contraction was as a result of low international prices and weak production of tin, Rwanda's primary mineral export (Figure 19). Manufacturing output fell by 2.9 percent in 2012 compared to 2011. The negative growth in the sector was partly due to higher costs of electricity, which have grown by 20 percent since July 2012.⁵ It is important to note that strong growth rates reported by the manufacturing sector in 2010 and 2011, respectively 9.3 and 8.1 percent, were associated with a Government's program for building new houses for low-income households. This program helped to boost

⁵The authorities increased electricity tariffs to ensure a positive rate of return for the Energy and Water Sanitation Authority.

Box 3 Getting Connected Rwanda's communications revolution

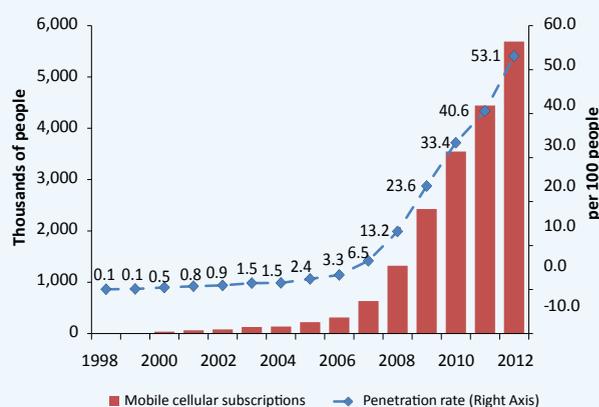
Mobile phone penetration started to accelerate in 2007. In 2006, only 6.2 percent of Rwandan households owned a telephone, and less than 4 in 100 Rwandan adults had mobile phone service, after 9 years after mobile phone services begun in Rwanda. By the end of 2012, there were 5,690,751 mobile subscribers, or 53 mobile phone subscriptions for every 100 people in Rwanda (Figure 8). According to Enquête Intégrale des Conditions de Vie des Ménages, EICV-3, the percentage of households with at least one mobile phone has increased to 45.2 percent, with the highest rate being in Kigali (80 percent) and in the Eastern Province (48 percent). Today 3 mobile phone operators are competing in Rwanda's Market: MTN Rwanda since 1998, TIGO established in late 2009 and Airtel launched in March 2012. It is important to note that in April 2011, a mobile operator license of Rwandatel was revoked because of the failure to implement its license obligations such as coverage and roll out obligation, quality services, among other requirements.

The increase in mobile phone services has been accompanied by decreased costs of connections and handsets. In 2007, the cost of a handset was around Rwf90,000 (US\$165) and in 2012 it was about Rwf12,000 (US\$20). The cost of using mobile phone services decreased: monthly connection fees fell from Rwf2,500 to Rwf1,250 in 2004, and were eliminated in 2005. Moreover, with the entries of other operators, the market has become more competitive, leading mobile phone operators to reduce their calling rates in order to attract more customers. In 2006, the calling rate was Rwf147 (nearly US\$0.30) per minute for prepaid services. As of September 2012, calling rates were ranging from Rwf20 to 30 (nearly US\$0.04) for call within the same operator, and from Rwf50 to 90 (about US\$0.08 to US\$0.14) for calls to different operators for local calls.

Information and Communication has been the main investment destination (Figure 9). According to Foreign private Investment Survey reports, almost half of Foreign Private investment to Rwanda between 2008 and 2011 was for the information and communication sector. This was mainly driven by the entries of new mobile operators, and new investment for the existing ones.

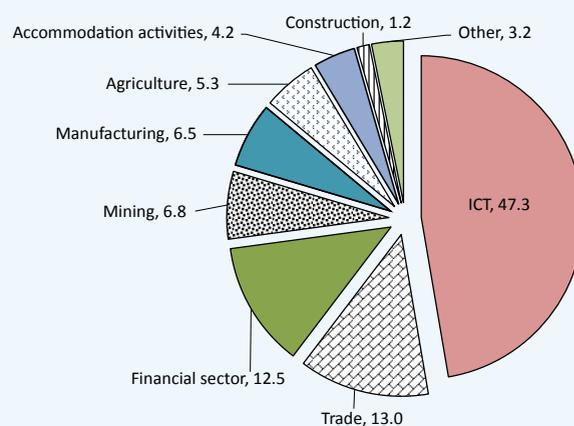
Increased ICT and mobile use have helped to modernize Rwanda's banking sector, and strengthen financial inclusion. Like in other EAC countries, one of the most popular fixtures is mobile money. Starting with MTN Mobile Money which was launched in February 2010, and later joined by TIGO Cash in May 2011. Mobile money has become a common feature in the lives of Rwandans, extending a refined system to provide financial services to the under-served populace. By the end of 2012, the mobile money system had increased to 1,440,541 subscribers (equivalent to nearly a quarter of total mobile phone subscribers) from slightly over 200,000 subscribers in 2010. Several banks offer mobile banking services to their clients (such as account balance, electricity and airtime purchase, salary SMS alerts, among others.) By December 2012, seven banks were offering mobile banking services. To ease retail payments, banks started promoting bank payment cards and providing electronic banking services to their clients. Debit cards increased from 41,377 in December 2010, to 389,289 cards in December 2012. In 2012, some

Figure 8: Mobile Phone Penetration in Rwanda
(Thousands of people; penetration rate per 100 people)



Source: World Bank's World Development Indicators.

Figure 9: The ICT sector was the main destination of FDI
(Destination of FDI during 2008-2011, percent)



Source: BNR, Foreign Private investment and investors reports.

Source: World Bank staff.

banks introduced penalties for any withdrawal not using debit cards and below the debit cards limit. The retail payment infrastructure has also improved. By the end of 2012, the number of Automated Teller Machines (ATMs) had more than tripled from 84 in December 2010 to 292 ATMs, and the number of Point of Sales increased from 99 to 666 over the same period. Efforts are being made to improve the inter-operation ability of ATMs, and increase the number of accepted (international) cards.

ICT has also led to the transformation of other sectors in Rwanda:

- In agriculture, there is “e-Soko”, a mobile market information solution which allows farmers and consumers to access market information for agricultural products. The project was supported by the World Bank.
- In the health sector, numerous ICT initiatives have been implemented such as: OpenMRS—an open-source medical records system that facilitates nationwide tracking of patient data; TRACnet—a system that allows central collection and storage of clinical health information; Mobile e- Health—a system used by community health workers to collect data for OpenMRS and TRACnet systems; Telemedicine—that is connecting King Faisal Hospital to Hospitals in Kabgayi and Musanze, to facilitate the sharing of clinical information between urban and rural hospitals, and most importantly allowing citizens to receive specialized treatment services remotely, without travelling to Kigali.
- ICT initiatives have fostered Rwanda’s private sector development, such as online trade information portals; business incubators; online tax calculators; credit reference bureau; a land administration and management information system; and electronic case management system. These initiatives have greatly improved Rwanda’s business environment.

Source: World Bank staff.

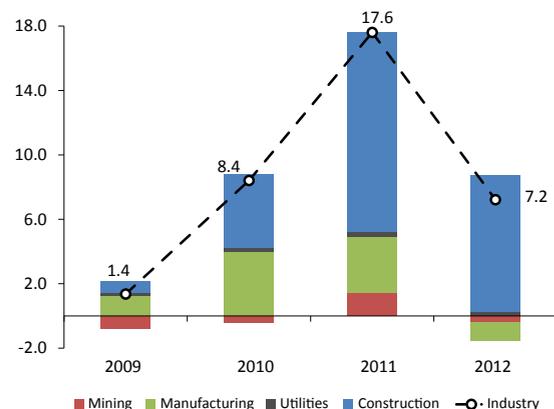
furniture production, which grew by 43.7 and 33.4 percent respectively in 2010 and 2011. As the program came to end in 2012, the furniture manufacturing contracted by 54.6 percent in 2012 returning to the pre-2010 levels.

Overall performance of the construction sector was solid in 2012. Starting from a low base in the first quarter of 2012, the construction sector rebounded strongly since the second quarter of 2012. Overall, the sector grew by 15.4 percent in 2012, although down from its very strong growth of 23.6 percent in 2011, which was driven by large public infrastructure projects. The sector is an important part of the Rwandan economy. It is the main contributor to growth in the industrial sector, and accounts for around 9 percent of GDP. Construction also has large spillover effects to other sectors, spurring activity in financial services and imports of materials. Moreover, the results of the third household living standards survey (EICV3) showed that the sector is the second largest in terms of non public and nonfarm employment.

Agricultural growth turned in a relatively modest performance in 2012 (Figure 13). Annex 7 summarizes the importance of the agriculture

sector in Rwanda’s economy, and its performance during the past decade. Agricultural land productivity (value added per hectare) increased faster than market productivity, from US\$386 in 2000 to US\$580 in 2011—though the highest growth in the agriculture sector was recorded in 2009 (7 percent) and has slowed since then. This increase in productivity was supported by favorable agro-climatic conditions and public programs and investments aimed at improving land productivity. However, in 2012, the performance of the sector was modest, largely

Figure 10: After the very strong growth of 2011, construction activity slowed in 2012, reducing overall growth in the industrial sector
(Contribution to industry growth, percentage points)



Source: NISR and World Bank staff estimates.

Box 4

Making the Money Flow

Recent financial sector developments in Rwanda

Rwanda's financial sector continued to expand in 2012. Growth in total financial sector assets expanded by nearly 25 percent over the past year, from Rwf1,511 billion to Rwf1,896 billion (US\$3.0 billion, estimated at 43 percent of GDP) in December 2012. Rwanda's financial sector remains dominated by the banking system, which held more than 65 percent of total assets in December 2012, followed by the pension sector with about 18 percent of total assets. The insurance sector and the microfinance sector represented 11 percent and 5 percent of total assets respectively. At the same time, the stock of credit increased by 33.8 percent and stood at Rwf682.2 billion (nearly US\$1.1 billion or 15.6 percent of GDP) at the end of 2012.

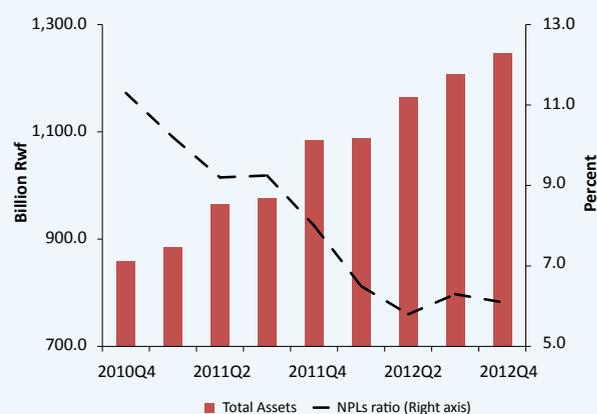
The banking sector remains sound. In 2012, the capitalization level as measured by total capital to risk weighted assets, stood at 23.9 percent, well above the Rwanda's regulatory minimum capital of 15 percent, and above 10 percent Basel Committee new Benchmark. The quality of banks' loan portfolios continued to improve, as the ratio of non-performing loans in gross loans continued to show a downward trend. The non-performing loans ratio has steadily declined from 11.3 percent in December 2010, to 8.2 percent in December 2011, and further to 6.1 percent in December 2012 (Figure 11). Growth in total banking assets expanded by 15.1 percent to Rwf1,247 billion (about US\$2.0 billion) in December 2012. Furthermore, the profitability of banking businesses, after taxes, was strong at Rwf27.3 billion (about US\$43 million) in December 2012. Measured by the return on bank's assets and the return on equity, the banking industry profitability stood at 2.2 percent and 10.4 percent respectively, as of December 2012.

Non-banking financial institutions also continued to expand. Rwanda's insurance industry continued to grow in 2012, with the expansion in premiums collected for both life and non-life products. Gross premiums earned in 2012 grew by 67 percent year-on-year, with 106 percent growth in life insurance business, and 41 percent growth in general insurance business. As of December total gross premiums amount to Rwf67 billion representing around 1.5 percent of GDP. The pension sector saw its assets jumping by 74 percent from Rwf192 billion (nearly US\$317 million) in December 2011, to Rwf334 billion (about US\$528 million) following the merger of the Social Security fund of Rwanda (SSFR) and Rwanda Medical Insurance Company (RAMA) into the Rwanda Social Security Board (RSSB). The size of the microfinance segment in terms of assets increased by 28.8 percent, boosted by the performance of Umurenge SACCOs. Umurenge SACCOs' assets expanded by 40.5 percent and accounted for 41 percent of total microfinance assets in December 2012.

Financial inclusion has dramatically improved due to Umurenge SACCOs. In 2009, the government embarked on a strategy to establish savings and credit cooperatives in each of the 416 geographically defined sectors of Rwanda (Umurenge SACCOs). The concept of Umurenge SACCOs is to allow the unbanked but bankable people access to financial services at low transaction costs. In 2012, findings of the second FINSCOPE survey showed that the percentage of adult population that is "financially excluded" (that is, those who do not have access to formal financial services), decreased significantly from 52.8 percent in 2008 to 28.1 percent in 2012 (Figure 12). The percentage of adult population with access to formal financial services doubled, from 21.1 percent in 2008 to 42 percent in 2012; currently 22.8 percent of the population has a bank account, while an additional 19.2 percent is served by Non-Bank Financial Institutions, with another 29.8 percent of the population having access to informal financial services. This places Rwanda in second place in the EAC region, after Kenya (57 percent), in terms of access to financial services.

Figure 11: Rwanda's banking sector has recorded a strong performance

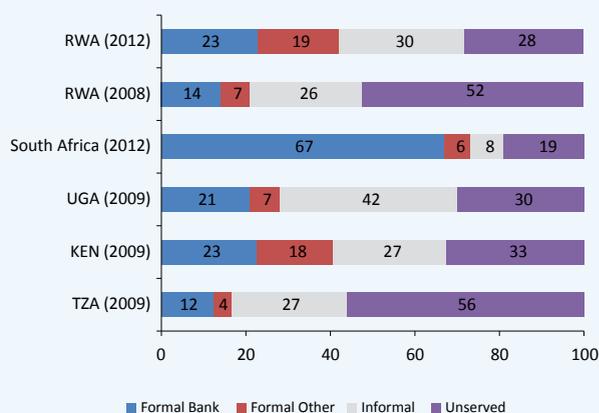
(Banking assets, billion Rwf; percentage of non-performing loans, NPLs)



Source: BNR.

Figure 12: Financial inclusion in Rwanda has improved significantly in recent years

(Financial inclusion in Rwanda and other African countries)

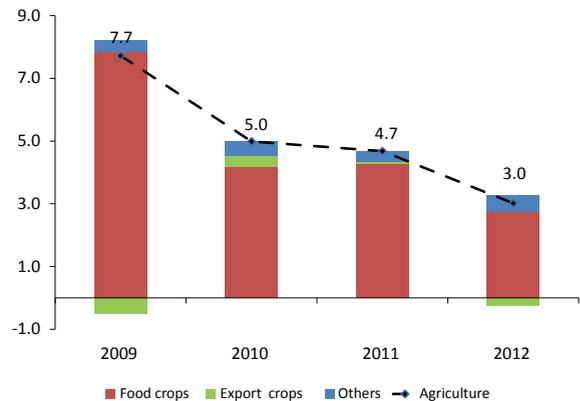


Source: Finscope and NISR.

Source: World Bank staff.

due to unfavorable weather conditions affecting the food crop harvest. The volume of food crops rose by only 1.9 percent, compared to 9.2 percent in 2011. The production of export crops contracted by 9.3 percent in 2012, compared to 2011. This was as a result of a weak harvest and declining international prices, especially for coffee. In 2012, growth of agricultural output was 3 percent, which was weaker than 4.7 percent in 2011 (Figure 13). As further elaborated in the focus section on poverty dynamics, agriculture is vital to Rwanda's economy, with improvements in food production as a key driver of both economic growth and poverty reduction.

Figure 13: Agricultural growth continued its downward trend
(Contribution to agricultural growth, percentage points)



Source: World Bank staff estimates.

1.2. Inflation — Declining, but risks remain as import prices rise

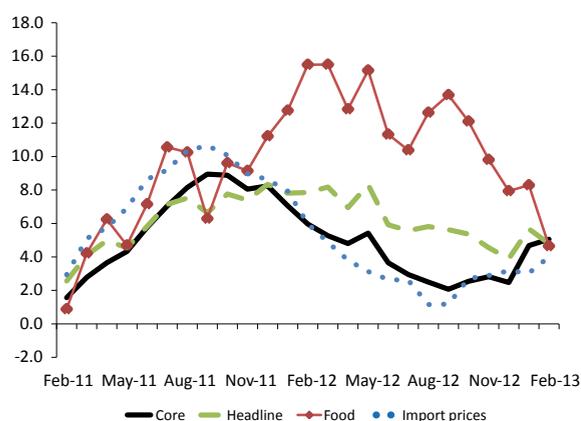
Rwanda's inflation rate has declined throughout the second half of 2012, as food and energy prices, large components of the consumption basket, have fallen. Monetary authorities have also maintained a prudent policy stance, since the reduction of aid, which combined with declining import prices and a deceleration in inflation in the EAC region, contributed to the reduction in inflation. However, since October 2012, import prices have started to rise, reversing a 14-month downward trend. While the headline rate remains low, if the exchange rate continues to fall, inflationary pressures will generally start to build up throughout the economy.

Headline inflation declined over 2012, as food and energy prices fell. As of February 2013, the headline inflation rate was 4.9 percent with core inflation at 5.1 percent (year-on-year, Figure 14). Food prices, which account for 35 percent of the consumption basket, declined through the year, but remained elevated at about 8 percent at the end of 2012. At the disaggregated level, the easing in prices of bread and cereals, in mid-to-late 2012 was largely offset by an increase in the price of vegetables. The decline in energy prices has followed the decline in international prices, with oil prices falling from early year high levels. In January, there was an uptick in headline inflation as local and imported food prices rose. Core inflation, which excludes food and energy, continued to fall throughout 2012, ending the year at 2.6 percent, down from 8.3 percent at the end of 2011. Inflationary pressures have been moderated by cautious monetary policy. After raising rates up to May 2012, authorities

have balanced the risks of slowing domestic prices and rising import prices, to maintain price stability.

The depreciation of the Rwandan franc is beginning to put upward pressure on inflation. As the Rwandan Franc began to depreciate since late 2012, import prices (which account for 20 percent of the basket) have begun to rise. From October 2012, import prices have reversed their 14 month downward trend, increasing from 1.2 percent in September, to 3.2 percent at the end of 2012. Transport prices, which were trending down through 2011 until October 2012, have been increasing, because the imported component of transport (for example airplane tickets) is paid in US dollars. As the exchange rate continues to depreciate, higher imported prices will begin to feed into prices more generally, resulting in higher core and headline inflation.

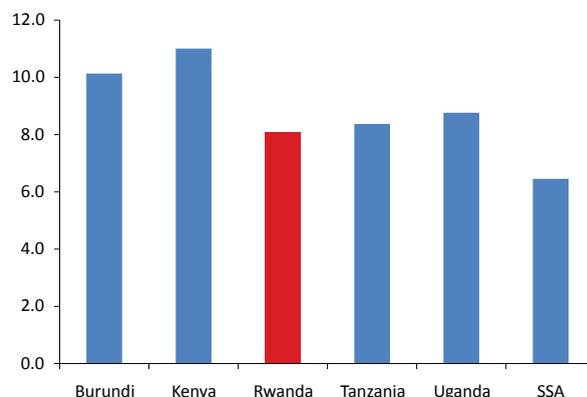
Figure 14: Inflation eased off in the second half of 2012...
(Inflation indicators, year-on-year percent change)



Source: BNR and World Bank staff estimates.

The average rate of inflation in Rwanda over the last decade is lower than those in other EAC countries, but higher than the sub-Saharan Africa average. In the last decade (until 2011), Rwandan consumer price inflation averaged

Figure 15: Rwanda's inflation is low compared to other EAC countries, but higher than the SSA average
(Average consumer price inflation, average percentage change, 2002-2011)



Source: World Bank staff estimates and World Development Indicators.

8.1 percent, higher than the SSA average of 6.5 percent (Figure 15). With food being such a large component of inflation, the performance of agricultural output is key to lowering inflation in Rwanda.

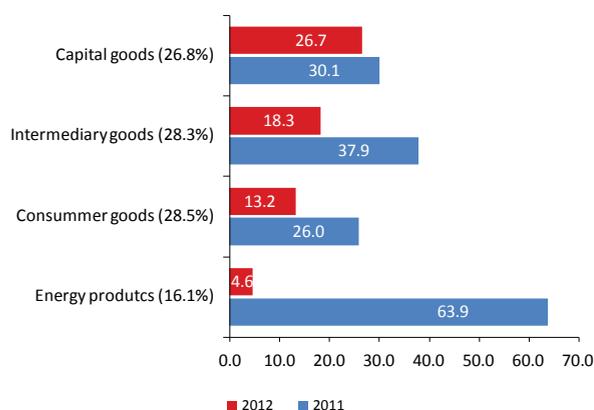
1.3. External Position — A growing export base, but highly dependent on aid

Rwanda's current account is highly dependent on aid. The rapid increase over the past five years, saw aid flows become the single biggest item for foreign inflows to the Rwandan economy, supporting surpluses on the Balance of Payments (BoP), and the accrual of foreign reserves. Yet, recent developments have highlighted the vulnerability of Rwanda's external accounts, as the reduction in aid and continued strong growth in capital and intermediate imports resulted in a widening of the current account deficit to an estimated 11.4 percent of GDP—its highest level in more than 20 years. However, there was one bright spot, with Rwanda's non-traditional export sectors expanding rapidly in 2012, raising the potential of a diversification in Rwanda's export base outside of the traditional raw minerals, coffee and tea sectors.

The shortfall in aid is estimated to have widened the current account deficit from 7.3 percent of GDP in 2011, to an estimated 11.4 percent of GDP in 2012, its highest level in more than 20 years. In mid-2012, World Bank staff estimates for aid in the second half of 2012 was US\$390 million (5.3 percent of GDP-Table 2). As of December 2012, more than two-thirds of these funds were yet to be disbursed

(almost US\$230 million, 3.1 percent of GDP). While swift government actions helped to shield the domestic economy from the full effects of the aid shortfall, lower aid inflows have put pressure on Rwanda's current account, with the deficit expected to expand by more than three percentage points of GDP, compared to the 2011 deficit—a level not seen since the later 1990s.

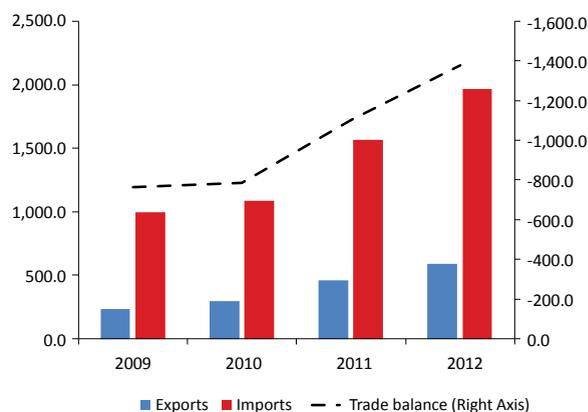
Figure 16: Imports growth accelerated in 2012, driven by strong growth in capital and raw materials...
(Growth in import values in 2012)



Source: BNR and World Bank staff estimates.

While aid inflows have dried up since mid-2012, imports have continued to rise, consistent with the strong uptick in private sector activities. In 2012, goods imports continued to expand rapidly, growing by an estimated 25.6 percent to reach almost US\$2 billion. This was primarily driven by rapid growth in capital and intermediary goods imports, which increased by 26.7 percent and 18.3 percent, respectively, during 2012 (Figure 16), consistent with the rebound in private sector activities. This strong momentum was maintained over the second half of 2012, with imports growing by over 10 percent, compared to the first half of 2012, primarily due to increasing consumption goods and industrial products. Sustained strong growth in capital goods and intermediate goods imports, have seen these two components rapidly increase as a share of total goods imports; with these two together with consumption goods now each representing over a quarter of the total imports bill. Consumer goods remain the largest component of the import bill, accounting for 28.5 percent of total goods imports. Given Rwanda's nascent domestic manufacturing sector, these consumer goods mainly comprise of non-food items. Food products accounted for only 10.4 percent of the import bill in 2012, down from over 11 percent in the past two years. The expansion in energy-

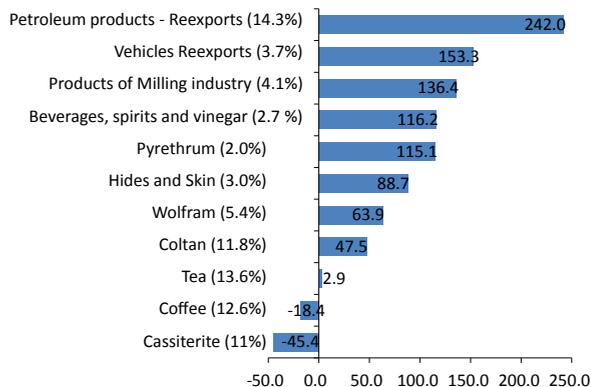
Figure 17: ...and this increase in imports is widening Rwanda's trade deficit
(Formal trade, million US\$)



related imports eased to 4.6 percent in 2012, down from the breakneck pace of 63.9 percent in 2011, as oil prices followed the volatility in global markets, while demand remained firm.

Exports also expanded rapidly, but this was not enough to offset the rise in imports, and so the trade deficit widened (Figure 17). Export earnings are estimated to have expanded to US\$590.8 million in 2012, with annual growth of 27.3 percent outpacing growth in imports. Almost 60 percent of export sales came in the second half of 2012, as international prices of Rwanda's main export products rebounded during the second half of the year. By destination, the EAC continued to account for around three-quarters of Rwandan exports in 2012, while the DRC accounted for 15 percent of exports. Thus, Rwanda's export performance remains heavily reliant on economic conditions within its closest neighbors, and makes export earnings vulnerable to regional shocks. Despite the strong growth in exports in 2012, the much lower base of exports meant that the slightly stronger growth than imports could not prevent a widening in the trade deficit, which is estimated to have expanded to US\$1,376 million in 2012 (about 20 percent of GDP), up from US\$1,102 million in 2011 (17.3 percent of GDP).

Figure 18: High growth in non-traditional sectors suggests a potential diversification of Rwanda's narrow export base
(Annual change of total values in 2012)

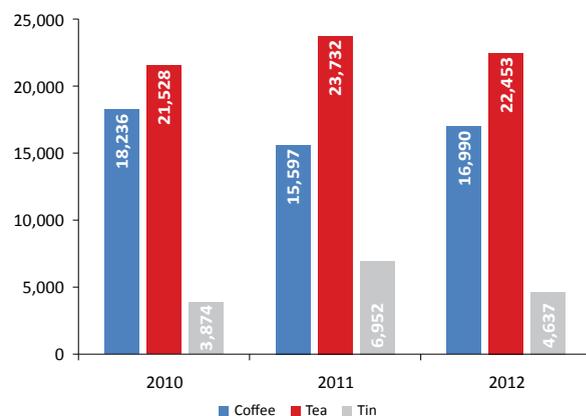


Source: BNR and World Bank staff estimates.
Note: (%) = Share of formal export values in 2012.

The expansion in exports was primarily due to strong performances in the non-traditional sectors, potentially foreshadowing a diversification in Rwanda's export basket (Figure 18). Exports of non-traditional products⁶ and re-exports boomed in 2012. The value of non-traditional exports nearly doubled, while re-exports increased by nearly three-fold, with the increases in both sectors—due almost entirely to increases in volumes. The strong growth in the non-traditional sectors was primarily due to increases in exports of agricultural products and products from the milling industry, while re-exports of petroleum products and vehicles also expanded rapidly. Strong growth in these sectors saw their shares of total exports rise to 23.2 percent for non-traditional products, and 22.4 percent for re-exports, from 15.6 percent and 9.6 percent, respectively, in 2011.

However, the rapid rise of re-export volumes should be taken with caution, as these exports are basically offset by imports. In particular, re-exports of oil, engines and vehicles have increased rapidly through 2012, with the majority of these goods destined for DRC. While oil re-exports have benefited from rising global prices, the increases in export earnings in all of these components has been primarily

Figure 19: Rwanda's main exports did not have a good year in 2012
(Annual production, tons)



driven by increasing volumes pointing to a potential broadening in Rwanda's narrow export base. Greater diversification of exports has the potential to reduce the vulnerability of the economy's export earnings to fluctuations in global prices of key commodities, and to provide additional sources of income for residents.

Meanwhile, traditional export products were hit hard by volatile international prices, and low domestic production. The value of Rwanda's traditional export sectors fell by 5.1 percent in 2012, led down primarily by a 45.4 percent fall in tin exports, due to both lower prices and volumes. Partially offsetting this downward trend was an expansion in the value of exports of Coltan and Wolfram, which increased by 47.5 percent and 63.9 percent, respectively, in 2012, mainly on account of high domestic production. Rwanda's coffee exports declined by 18.4 percent, due to the significant drop in international prices and lower than expected production for 2012 due to irregular domestic rain patterns. Tea export values increased by 2.9 percent in 2012, benefiting mainly from the price increase at the Mombasa Auctions (Figure 18).

The widening of the current account deficit pushed the BoP into deficit for the first time since 2003, reducing international reserves by

⁶According to Rwandan Authorities, traditional exports are coffee, tea, and minerals, especially tin.

Box 5

With a Little Help From My Friends

How foreign aid enters the Rwandan economy

Aid flows are transmitted to the Rwandan economy through the Balance of Payments (BoP). The BoP encompasses the external accounts that record all of a country's cross-border transactions in a given period. They comprise of: (i) the current account, and (ii) the financial and capital accounts. These accounts are important for understanding an economy's linkages with the rest of the world, and for assessing the opportunities and risks of an economy integrating with global product and capital markets. For an economy at the early stages of integrating with the global economy, such as Rwanda, these flows are often relatively limited, and are likely to be dominated by government-to-government official transfers, and imports and exports of basic goods. Indeed, this is the case for Rwanda, where aid inflows have grown exponentially over the past five years, and now account for over 40 percent of annual financial flows, between Rwanda and the rest of the world. Combined with payments for imported goods, these two types of transactions accounted for over half of Rwanda's cross-border financial flows in the same period.

Official transfers represent around 15 percent of GDP, and over 40 percent of gross inflows to Rwanda, with the majority recorded in the current account. In 2008, the Rwandan Government introduced the Economic Development and Poverty Strategy (EDPRS), which outlined direct budget support (including both general and sector budget support) as the Government's preferred modality for aid. The EDPRS was supported by development partners, and resulted in the share of aid delivered through the public sector, increasing to almost 60 percent over the previous three budgets, at a value of around US\$450 million annually. This aid was channeled exclusively through the current account, making direct budget support one of the key determinants of Rwanda's current account balance. These flows are recorded in the current transfers balance of the current account—the sub-account which incorporates all net flows between Rwanda and the rest of the world, that do not correspond to purchases of any goods, services, or asset.

Aside from official transfers, the trade balance is the other major component in the current account. Rwanda's goods exports have grown sharply in recent years, with sales estimated to be more than two times higher in 2012 compared to 2008. However, they continue to account for only a small share of GDP (averaging 5.9 percent of GDP between 2008 and 2011, but estimated to have risen to 8.3 percent in 2012) and cover only a fraction of the import bill, which averaged 20.4 percent of GDP in 2008-2011 (but has risen to an estimated 27.7 percent of GDP in 2012). This has left Rwanda highly dependent on official transfers to finance its substantial current account deficit. It is important to note that the increased bill of imports was mainly driven by the significant increase in imports of capital goods, and intermediary inputs occurred in line with increased development outlays.

Rwanda is a net importer of services, mainly due to high freight and transport costs; however, tourism receipts are a key source of foreign exchange, with the sector growing strongly in recent years. Earnings from foreign tourism rose by 35 percent between 2008-2011, with improvements in tourism infrastructure attracting increased numbers of tourists from across the African continent and overseas. Tourism exports have, in fact, been Rwanda's single largest export sector by earnings since 1999, regularly attracting more foreign inflows to the economy than coffee, tea and raw mineral combined. Thus, the outlook for the sector has important implications for domestic industries, and as a source of foreign currency inflows.

The final component of Rwanda's current account, the income balance, remains negative. Aside from current transfers and the trade balance, a country's current account balance also records net interest, and dividend payments

Table 1: Foreign inflows to Rwanda are dominated by donor inflows, while exports and private sector financial flows remain relatively small
(Balance of payments, US\$ million)

	2009	2010	2011	2012(e)
Balance of Payments	145	72	235	-212
Current Account	-383	-418	-460	-813
Current Account (excl. Pub. Transfers)	-903	-985	-1,207	-1,352
Goods Trade	-764	-787	-1,102	-1,376
Exports	235	297	464	591
Imports	999	1,084	1,566	1,967
Services	-182	-246	-187	-85
o/w Tourist receipts	174	202	252	282
Income	-37	-43	-52	-74
Current Transfers	600	657	881	722
o/w Public transfers	520	567	747	540
Capital Account	200	286	197	171
Financial Account	328	214	486	411
Direct Investments	119	42	106	160
Public sector borrowing	182	52	207	93
Other Private	27	119	172	158
Errors & Omissions	0	-9	12	18
Foreign Reserves	744	813	1,050	843

Note: (e) = estimate

Source: BNR and World Bank staff estimates.

and earnings of domestically owned firms operating abroad (the income balance). Given relatively low levels of foreign direct investment in Rwanda and small Rwandan direct investments abroad, these flows are relatively small, averaging a deficit of 1.0 to 1.5 percent of GDP over the past five years.

$$\text{Current Account} = \text{Trade Balance} + \text{Income Balance} + \text{Current Transfers Balance}$$

The other major accounts in the BoP are the capital and financial accounts. On one hand, the capital account is generally composed of in-kind capital grants to finance public projects and debt forgiveness. The financial account, on the other hand, records public and private sector lending activities with the rest of the world as well as FDI. For countries that are financially integrated with the global economy, the financial account is a relatively more important transmission channel, connecting domestic investors and savers with foreign financing and investment opportunities, as well as for channeling foreign direct investment (FDI) in long-term productive assets, such as land, capital, and new businesses. This is less true for Rwanda, where the capital account has averaged 3.5 percent of GDP during 2000-2011, while the financial account has averaged only 1.8 percent of GDP with 1.0 percent in FDI. Combined with high levels of foreign aid inflows, these net inflows on the capital and financial accounts have in the past mitigated the need for large external borrowing, to finance the deficit on goods, services, and income—which has averaged 15.8 percent of GDP over the decade.

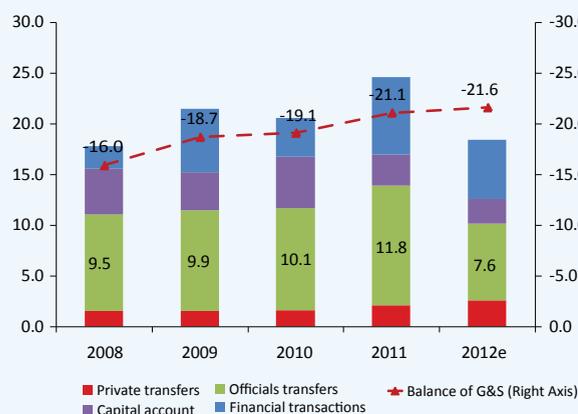
Understanding these various elements can provide a holistic perspective on the various factors affecting net capital flows between Rwanda and the rest of the world. In addition, by disaggregating the BoP, key elements can be accurately identified, which drive Rwanda's external accounts and therefore have a better understanding of how various shocks—such as the present sudden-stop in aid disbursement—might be transmitted to the domestic economy, and the potential implications of the stock on foreign reserves.

Rwanda has maintained a positive BoP in recent years, as official transfers have remained high (Figure 21). Over the period 2000-2011, the BoP surplus averaged 2 percent of GDP, as net capital grants, private transfers and net investments were more than sufficient to offset the trade deficit. Over the period 2000-2011, overall official transfers averaged 10.8 percent of GDP. Budgetary grants varied between 4.1 and 10.2 percent of GDP and averaged 6.9 percent of GDP. The contribution of private transfers, such as remittances, has been significantly low, averaging 1.7 percent of GDP in 2000-2011. As mentioned above, the capital account has averaged 3.5 percent of GDP over the same period. Combined, these high level of foreign aid inflows mitigated the need for large externally borrowing in order to finance an average deficit—on goods, services, and income—of 15.8 percent of GDP. As previously mentioned, the financial account has averaged 1.8 percent of GDP with 1.0 percent in foreign investments.

These BoP surpluses, financed by high official aid flows, have also led to an increase in foreign reserves. With the BoP registering an annual surplus in 10 of the 11 years in 2001-2011, net capital inflows have allowed the BNR to accrue foreign reserves, with the level of reserves rising almost six-fold. Over this period, the level of reserves has averaged 5.4 months of imports of goods and services, and in 9 out of 12 years, the level has been above the estimated optimal level of reserves, as calculated by the IMF (5.1 months of imports as per the IMF's 4th review report of June 2012).

Figure 20: Foreign aid inflows have fallen dramatically and as a result the Balance of Payments is projected to turn negative in 2012

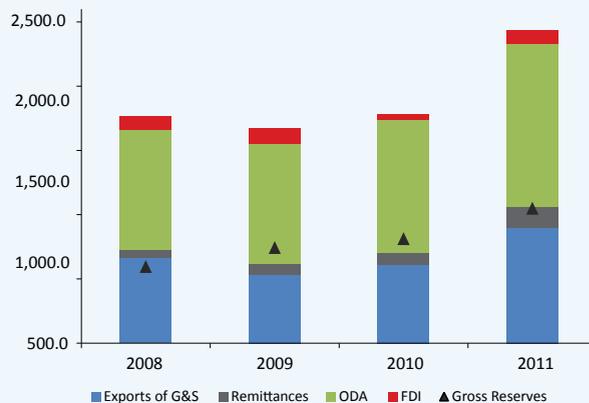
(Current account balance, percent of GDP)



Source: BNR, OECD and World Bank staff estimates.

Figure 21: ...which have been the main source of foreign exchange reserves

(Current account balance, US\$ million)



Source: World Bank staff.

almost 20 percent, to around US\$845 million by the end of 2012. The sudden-stop in official inflows, combined with an expansion in the trade deficit, due to a record-high imports bill is estimated to have pushed the BoP from a surplus of US\$235 million (3.7 percent of GDP) in 2011, to a deficit of around US\$212 million (about 3.0 percent of GDP) in 2012 (Table 1 and Figure 20). Aside from official inflows, other public sector net inflows have also narrowed in 2012, as the spike in global financial market volatility in early 2012 resulted in a reduction of foreign demand for Rwandan Government sovereign debt, compared to 2011. Fluctuations in global financial markets and weakening foreign investor confidence, also pushed some African countries, including Rwanda, to delay their planned foreign-currency denominated bond issuances (Eurobonds) until market conditions improve. Rwandan authorities are yet to announce further plans for the issuance of a potential Eurobond of US\$350 million. Finally, foreign direct investment (FDI) has continued to rise steadily—predominantly in the mineral, and hotel and leisure sectors—although at US\$160 million (around 2.0 percent of GDP) in December 2012, these net inflows remain small relative to aid and trade flows. To offset net capital outflows

during 2012, the BNR has ran down international reserves by about US\$200 million, to around US\$845 billion in December 2012 (less than 4 months of imports).

Recent developments highlight the vulnerability of Rwanda’s external accounts to a sudden-stop of aid inflows. The significant scaling up of aid inflows over recent years has enabled the National Bank of Rwanda to accrue foreign reserves. While the level of reserves have risen five-fold since 2000, booming imports have resulted in a slight downward trend in the number of months of imports that could be covered by reserves if Rwanda were to completely lose access to foreign financing. This suggests that Rwanda’s external accounts remain vulnerable to fluctuations in the supply of foreign financing, particularly aid inflows, which remain the largest single source of foreign exchange. While the BNR has been able to offset the small net outflows on the BoP in recent months, this has come at a great cost to budget expenditures. With US\$220 million of reserves exhausted through the second half of 2012, authorities have only a limited scope to intervene, should net capital outflows continue—highlighting the ongoing vulnerability of Rwanda’s external accounts.

1.4. Monetary Policy, the Exchange Rate — Ongoing reforms, conflicting pressures

Challenged by strong countervailing forces over the second half of 2012, authorities sought to maintain prudent monetary policy settings to support domestic economic stability, while managing inflationary pressures. Over the second half of 2012, Rwandan authorities maintained the policy rate at 7.5 percent, balancing these countervailing forces, and helping to mute the impact of the aid shortfall on the domestic economy. Yet, interest rates in the economy were pushed up by the rapid pace of domestic credit growth, and the government’s increased domestic borrowing to finance the budget shortfall. In parallel, the National Bank of Rwanda (BNR), Rwanda’s Central Bank, continued its reform agenda, pushing ahead with critical reforms to improve monetary policy operations, and establish a Financial Stability Committee to oversee financial sector stability to mitigate systemic risk.

Authorities have continued to move ahead with reforms to monetary policy, with the BNR adopting measures to strengthen liquidity management and improve monitoring and regulation of the financial sector. The BNR implemented a series of reforms during the second half of 2012, particularly focused on enhancing the effectiveness of monetary policy operations, and transmission mechanisms, and improving crisis preparedness. Beginning June 2012, the BNR adopted a seven-day-maturity repurchase agreement (repo) as its key debt instrument to manage system liquidity, in place of existing repo instruments of various maturities, in an effort to streamline its liquidity operations. In order to enhance operations of the interbank money market and improve overnight liquidity management, the BNR has introduced standing and lending facilities, and improved the reserve requirement system, by extending the reserve maintenance period from one week to two weeks. In line with other EAC countries, Rwandan authorities have also taken measures to reduce the economy's reliance on foreign currencies, with the BNR mandating that all reserves requirements—for both local and foreign currency deposits—must be held in local currency, and introducing a new rule which limits banks' overall foreign exchange exposures to about 10 percent of their core capital, in line with the practice of other EAC countries.

In light of growing concerns over financial sector stability, in July 2012, the BNR created the Financial Stability Committee (FSC) to monitor financial market conditions and risks. The FSC is an advisory body to the BNR Board of Directors, with responsibility to support financial sector stability, through the development of guidelines and strategies for mitigating systemic risk, in particular by carrying out periodic assessments of the pension and insurance sectors—neither of which were regulated until 2008. By establishing the committee, Rwanda joins a range of other developing nations that have established an authority to advise on issues related to financial

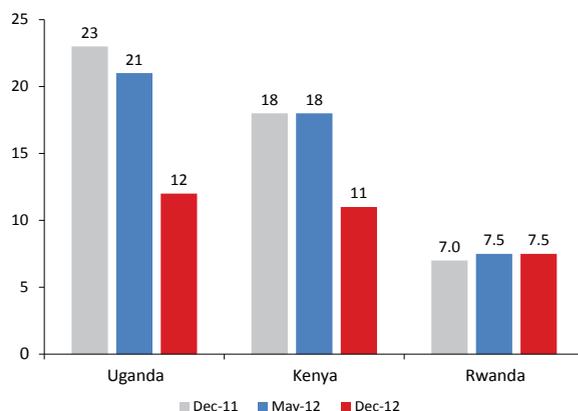
stability and systemic risk. As this new body matures, authorities could further strengthen financial system monitoring, by tasking the FSC to develop a national crisis management framework, which could be used in response to a systemic shock, including liquidity or solvency problems in the domestic banking sector. The group could also be a suitable body to develop comprehensive lender-of-last resort policies and procedures, and to enhance cooperation with overseas supervisors—especially as Rwanda's linkages to overseas banks and financial markets grows over the coming years.

With strong countervailing forces affecting the domestic economy, the BNR kept the benchmark policy rate unchanged through the second half of 2012. Authorities faced two conflicting pressures affecting the Rwandan economy, through the second half of 2012. On the one hand, domestic economic conditions indicated that tighter monetary policy may be necessary, as the strong expansion in private domestic demand fueled rapid credit growth, and high demand for imports. In addition, the aid shortfall was accompanied by a depreciation of the Rwf against the US dollar, raising pressure on the BNR to raise the policy rate to stymie further capital outflows. On the other hand, domestic price pressures eased significantly, with low growth in broad money, and core inflation dropping from 9.0 percent in September 2011 to below 3.0 percent through the second half of 2012. In addition, the uncertainties surrounding aid flows, heightened external and fiscal risks, and monetary policy easing in some EAC countries (Figure 22), all suggested more accommodative monetary policy may be prudent. The Monetary Policy Committee (MPC) of the BNR responded prudently, by maintaining its benchmark interest rate at 7.5 percent throughout the second half of 2012, while working closely with the government to increase preparedness in the event that domestic economic conditions could begin to deteriorate. In its recent quarterly meeting held in March 2013, the MPC kept the benchmark interest rate unchanged.

Despite an unchanged policy rate, interest rates rose significantly in the second half of 2012. Although the BNR kept the policy interest rate unchanged, other market interest rates continued to rise over the period. Treasury bill rates rose by 310 basis points from 9.3 percent in June 2012 to 12.4 percent at the end of 2012, as the government turned to domestic borrowing, to fill the budget financing gap caused by the aid shortfall. Rwf262.5 billion (US\$420 million) of T-bills were sold in the second half of 2012; almost twice as much as the same period in 2011. Deposit rates also increased by 324 basis points, as bank deposit growth eased relative to very strong credit growth.

The trend depreciation in the Rwandan franc continued in the second half of 2012, as net foreign capital inflows reversed. After easing by 1.6 percent in 2011 and a further 1.4 percent in the first half of 2012, the franc depreciation gathered speed in the six months to December 2012, moving down by 3.1 percent against the US dollar, despite Central Bank’s interventions on the domestic foreign exchange market. Rwanda’s real effective exchange rate has depreciated by

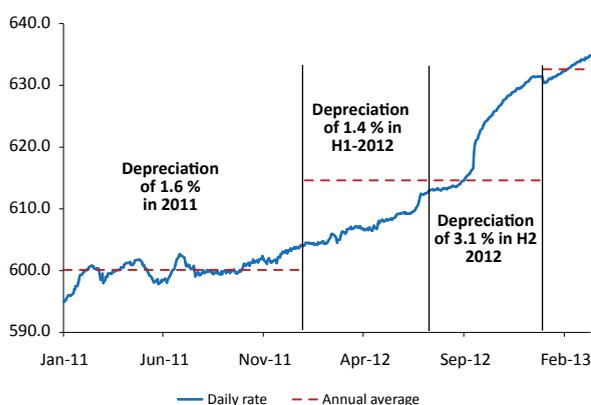
Figure 22: Central Banks across the EAC moved into an expansionary phase in 2012, while the BNR held its policy rate unchanged
(Bank policy rate, percent)



Source: World Bank staff estimates based on data from Central Banks of Rwanda, Kenya and Uganda.

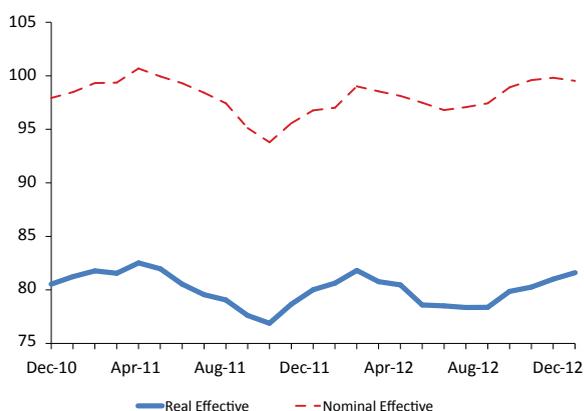
2.0 percent as of December 2012, compared to an appreciation of 0.7 percent in 2011. The depreciation was mainly due to lower inflation in Rwanda, compared to the nation’s major trading partners, as well as a nominal depreciation of the Rwf against the US dollar—with the dollar remaining the primary currency used in external trade (Figure 23 and Figure 24).

Figure 23: The Rwf depreciation gathered pace in H2 2012 as delays in aid disbursement lengthened
(Rwf against the US dollar)



Source: World Bank staff estimates based on data from the BNR.

Figure 24: The real exchange rate depreciated, though slightly as Rwanda’s inflation was lower than key trading partners
(Rwanda’s real effective exchange rate, Jan 2005=100)



1.5. Fiscal Policy — Strong performance in spite of enormous challenges

The reduction in aid posed significant challenges to fiscal policy in 2012. Authorities were able to cover some of the shortfall through increased domestic borrowing, and greater than expected tax collections. The resulting shortfall in funding meant that the government had to cut spending in some categories and accumulate arrears. Despite these challenges, the government was still able to execute 90.4 percent of the revised budget levels. This enabled it to maintain spending in priority categories such as wages, interest payments, transfers and social spending.

The reduction in aid inflows highlighted their importance to Rwanda's fiscal position. Compared to committed aid for the first half of FY2012/13, less than 40 percent was disbursed (Table 2). Since July 2012, development partners have suspended or delayed their planned budget support to Rwanda. As a result, the gap between expected and actual budget support reached US\$232 million or 10 percent of the budget by the end of December 2012.

Despite the challenges, the GoR has managed the fiscal situation well.

Improved tax administration and robust private sector activity increased domestic tax collections. Domestic revenue achieved 100.1 percent of its targets in the first half of FY2012/13, with 99 percent in tax revenues and 109 percent in non-tax revenues. To further offset the funding shortfall, the GoR has increased domestic borrowing (i.e., issuance of T-bills). This has enabled the government to continue spending on non-discretionary items such as salaries and wages, interest payment, transfers and expenditures. The overall budget execution rate was about 90.4 percent, with 107 percent in recurrent expenditure and 94.9 percent in capital expenditure (Table 3). Furthermore, the GoR launched a foreign fund, Agaciro Development Fund (AgDF), a homegrown solution aimed at improving the level of financial autonomy of Rwanda, as a nation (Box 6).

Table 2: Foreign assistance inflows have dramatically declined since mid-2012

(Donor budget support in 2012/13, US\$ million)

	Original budget	July-December 2012		Revised budget
		Excepted	Disbursed	
General budget support	274.1	274.1	70.8	229.5
Agriculture	37.9	37.9	25.9	25.9
Education	34.0	34.0	34.0	34.0
Social Protection	21.6	11.6	11.6	11.6
Health	8.1	6.1	-	-
Justice	14.9	14.9	4.1	10.9
Total	390.7	378.7	146.4	311.9
Percent of GDP	5.3	5.1	2.0	4.2
Percent of budget	18.3	17.7	6.9	13.1

Source: World Bank staff estimates based on information from MINECOFIN and the media.

However, sustaining priority spending has not been without cost. Increased domestic borrowing was accompanied by a rapid increase in the weighted average rate of Treasury Bills. As outlined in the monetary section, Treasury bill rates rose by 310 basis points from 9.3 percent in June 2012, to 12.4 percent at the end of 2012. Because the rate of borrowing was not sufficient to cover all aid reductions, the government incurred arrears. As of December 2012, arrears amounted to Rwf34.4 billion, equivalent to 1.2 percent of GDP. The accumulation of arrears could have an impact on the confidence of private enterprises and households in the soundness of government financial operations.

Box 6

Planning for the Future
Rwanda's AGACIRO Development Fund

Rwanda set up a sovereign fund, the Agaciro Development Fund, in August 2012, following a proposal floated among senior government leaders and citizens during the last National Dialogue held in December 2011. The Agaciro Development Fund is Rwanda's first solidarity fund, based on voluntary donations. Agaciro is a Kinyarwanda word which can be loosely translated as "dignity". The process is supported by Rwandans in the Diaspora, with support from their compatriots in Rwanda. The timing of the Fund is significant, coming at a time when several development partners have announced delays in budget support to Rwanda. There has been considerable promotional activity around the fund in the private and public sectors, with public servants being encouraged to contribute through monthly payroll deductions. As of February 2013, an amount of about Rwf29billion (nearly US\$46 million) has been pledged.

Source: World Bank staff.

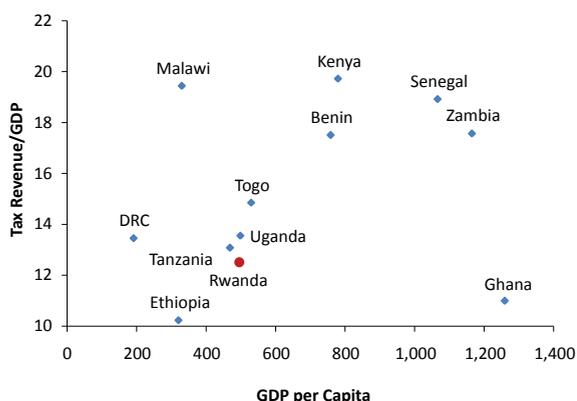
In March 2013, Parliament approved a revised 2012/13 budget, which reflects the uncertainty about future aid inflows. To respond to the fiscal pressures arising from the delays in budget support, the Government identified expenditure cuts of about 1 percent of GDP. The revised budget also includes contingent expenditures of Rwf107.6 billion (2.2 percent of GDP). It is important to note that the share of capital expenditure accounts for 30 percent of proposed budget cuts, and 67 percent of contingent items.

Tapping into the international bond market will be necessary in order to finance the completion

of some key strategic projects. The revision of the 2012/13 budget also includes proceeds from Euro Sovereign bonds worth Rwf227 billion (approximately US\$350 million) to support the Kigali Convention Center (KCC) and RwandAir to offset expensive loans (US\$200 million) and to finance the completion of the KCC project (US\$150 million) before the end of 2013.⁷ This will be the first time that Rwanda issues an international bond. According to the World Bank's Global Economic Prospects report of January 2013, low-risk investment-grade deals outnumbered riskier issues by a ratio of 3 to 1, during 2012.

Figure 25: Rwanda's tax collection remains among the lowest in SSA...

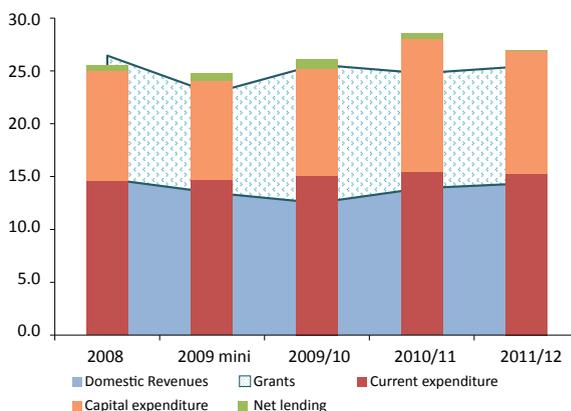
(Tax Revenue/GDP, percent; GDP per capita, US\$)



Source: World Bank's World Development Indicators, MINECOFIN, and BNR.

Figure 26: ...with donor funding making up for the shortfall

(Government Operations as a share of GDP, percent)



⁷The amount of the Eurobond has been revised upward to US\$400 million to accommodate an additional US\$50 million to finance hydro-power projects meant to generate 28 megawatts.

Box 7

What's in Your Wallet?

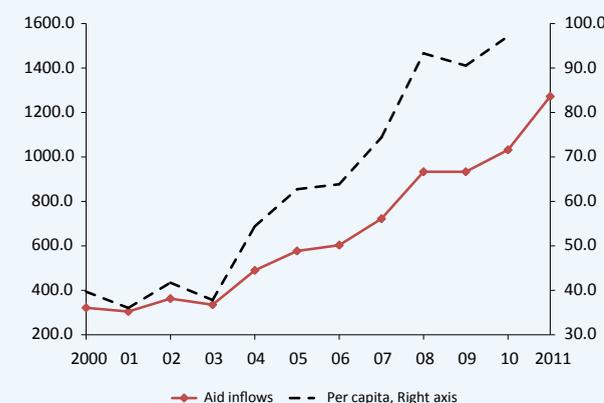
Using aid flows to create fiscal space for public investment

Rwanda has long received substantial sums of foreign aid, relative to the size of its population and economy. Over the decade—to 2011, aid inflows to Rwanda have increased by about 300 percent, from US\$321.5 million in 2002 to US\$1,272.6 million in 2011. They have persistently exceeded 17 percent of GDP. As annual averages, aid inflows revenues have been at US\$657 million between 2000-2011, and increasing from US\$400 million in 2000-2005, to US\$910 million in 2006-2011. Per capita ODA has more than doubled from US\$39.7 in 2000, to US\$97.2 in 2010, nearly two times the average of all low income countries. The surge in aid to Rwanda coincided with a sharp increase in overall aid to sub-Saharan Africa over the same period. This increase reflected renewed donor enthusiasm for aid in the context of the UN Millennium Development Goals campaign, the end of the post-cold-war decline in aid, and the implementation of the highly-indebted poor countries (HIPC) debt relief initiative.

Most of Rwanda's aid is now delivered through the public sector. According to data from the OECD, only 10.6 percent of aid received was channeled through the public sector in 2002-2006. In 2007-2011, the share delivered through this channel increased dramatically and averaged 55.3 percent. This corresponds largely to the period for the implementation of the Economic Development and Poverty Strategy (EDPRS), the national poverty reduction paper, which was also supported by development partners. This reflected also the increasing confidence of donors in the country's systems. In particular, Rwanda made significant progress in strengthening public financial management as documented by the most recent Public Expenditure Framework Assessment (PEFA) in 2010. Rwanda's preferred aid modality remains budget support. In the previous three budgets, almost 60 percent was disbursed in form of budget support (this includes general and sector budget support).

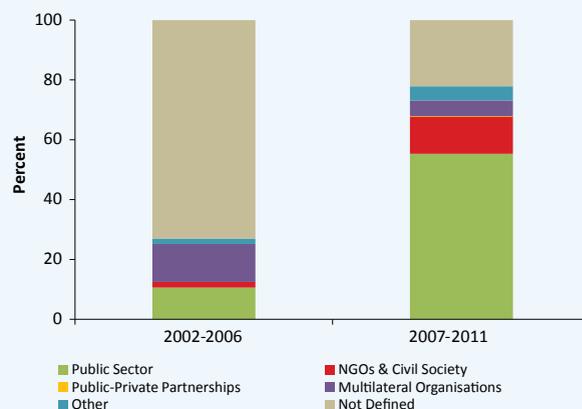
Increased aid contributed to the rapid expansion of government development spending. High assistance to social sectors has created fiscal space which enabled the government to re-orient the share of its domestic collections to development expenditures. The component of development spending domestically funded increased by over 5.4 percentage points of GDP from less than 1 percent in 2000, to 5.6 percent of GDP in 2011/12. In terms of domestic collections, the share of domestic capital outlays increased from less than 2.1 percent in 2000, to almost 40 percent of domestic collections in 2011/12. Overall public expenditures increased by 4.5 percentage points of GDP, of which 3.0 percentage points were allocated to capital spending, the latter increasing from 8.7 percent of GDP in 2000 to 11.7 percent in 2011/12. Gross capital formation as percentage of GDP (21.4 percent in 2011) was the same as the average level in SSA.

Figure 27: Aid flows for Rwanda has increased substantially
(Aid in million US\$ and per capita rate)



Source: WDI and OECD.

Figure 28: The main disbursement channel of aid to Rwanda is now through the public budget
(Disbursement channels of assistance, 2002-2011)

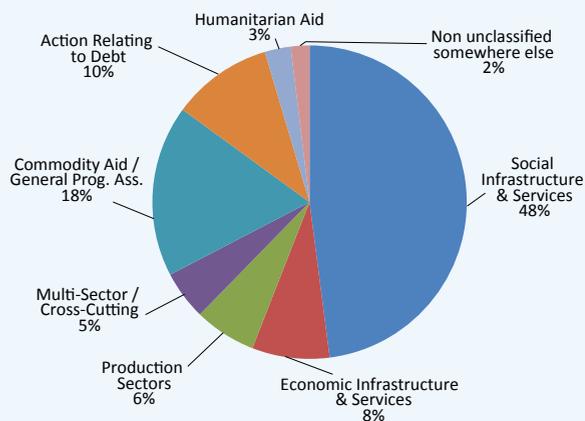


Source: OECD.

Foreign aid has been an important financing source of public expenditure, thus easing the overall fiscal deficit. Total government spending as a share of GDP has steadily increased over 2000-2012. The high cost of reconstruction and poverty reduction programs, combined with growth acceleration programs, have increased spending to its highest level of about 28.6 percent of GDP in 2010/11. Rwanda's domestic revenues, though increasing, cannot support this level of public spending. In 2000-2011, averaging 12.6 percent of GDP, the level of domestic collections ranged between 10 percent in 2000 and 14.8 percent in 2008. Increased public spending together with a relatively low level of domestic collections, resulted in large fiscal deficits, financed mostly by foreign grants. When not sufficient, the government resorts to borrowing. However, it is worth noting that after the HIPC, Rwanda's debt remained below 20 percent of GDP.

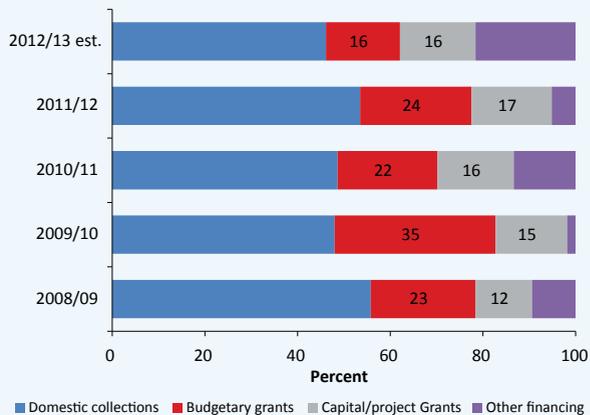
Rwanda has used aid effectively to reduce poverty in recent years (See Focus Section for further details). In the 2011 OECD Paris Declaration survey on aid effectiveness, Rwanda was one of the only countries to receive an “A” rating on the operationality of its national development strategy. Of the 13 indicators with applicable targets in the survey, Rwanda has met 8, with the remaining five being close to the targets.

Figure 29: Social spending comprises the majority of ODA financed activities
(Sector breakdown of aid, 2002-11)



Source: OECD.

Figure 30: Aid flows constitute a major source of financing of public expenditures in Rwanda
(Sources of fiscal revenues, 2008-2013)



Source: MINECOFIN.

Source: World Bank staff.



Table 3: Government Operations, 2009/10 – 2012/13*(Billion of Rwf, unless otherwise indicated)*

	2010/11		2011/12		2012/13			
	Budget	Actual	Budget	Actual	Original Budget	Budget	Actual	Revised Budget
Revenue and grants			1,029.8	1,049.1	1,220.5	589.4	545.3	1,149.5
Domestic revenue	471.7	484.3	566.3	591.7	724.4	345.9	346.2	707.7
Tax revenue	449.1	463.7	531.3	557.0	641.2	307.8	304.6	641.2
Direct taxes	176.0	180.9	212.6	228.5	253.1	121.5	121.9	253.1
Taxes on goods and services	235.1	245.1	277.7	282.6	347.0	166.5	160.0	347.0
Taxes on international trade	38.0	37.8	41.0	45.9	41.1	19.8	22.7	41.1
Non-tax revenue	22.6	20.6	35.0	34.7	83.2	38.1	41.6	66.5
Grants	372.5	379.0	463.5	457.3	496.0	243.5	199.1	441.8
Budgetary grants	208.5	215.0	279.1	265.7	252.1	121.6	96.3	197.9
Capital grants	164.0	164.0	184.4	191.6	243.9	122.0	102.8	243.9
Total expenditure and net lending	987.6	984.3	1,112.3	1,098.0	1,337.9	660.4	596.8	1,425.0
Current expenditure	514.4	527.0	613.9	614.1	680.8	310.2	332.7	624.3
Wages and salaries	120.6	122.0	143.7	144.8	183.1	87.2	82.8	170.4
Goods and services	119.1	124.1	148.8	149.5	127.6	67.2	66.0	116.6
Interest payments	15.2	15.6	16.0	18.4	18.2	9.0	10.5	28.4
Transfers	192.6	197.2	243.8	225.6	266.2	104.7	136.0	237.6
Exceptional social expenditure	66.9	68.1	61.6	75.8	85.7	42.1	37.4	71.3
Capital expenditure	452.9	438.6	497.7	482.9	647.3	268.5	254.7	635.3
Domestic	219.4	218.9	237.8	231.6	277.0	90.2	95.6	265.1
Foreign	233.5	219.7	259.9	251.3	370.3	178.2	159.1	370.2
Net lending	20.3	18.7	0.7	1.1	9.8	81.7	9.4	165.4
Change in arrears (- reduction)	-8.4	-8.4	-8.4	-8.4	-8.0	-4.0	34.4	-8.0
Overall deficit								
Excluding grants	-524.3	-508.3	-554.4	-514.7	-621.4	-318.5	-216.2	-725.3
Including grants	-151.8	-129.3	-90.9	-57.3	-125.4	-75.0	-17.1	-283.5
Financing	151.8	129.3	90.9	57.3	125.4	75.0	17.1	283.5
Foreign financing (net)	81.8	68.5	116.7	95.1	128.4	280.3	57.0	355.5
Drawing	89.9	76.4	127.6	104.8	143.7	287.9	64.6	370.7
Amortization	-8.1	-7.9	-10.9	-9.7	-15.3	-7.6	-7.6	-15.3
Domestic financing	70.0	60.8	-25.8	-37.7	9.1	-205.3	-39.9	-72.0
Banking sector	59.3	77.8	-21.3	-5.9	8.7	-205.3	-84.9	-84.4
Non-banking sector	10.3	-13.6	0.0	-26.5	0.0	0.0	36.9	12.5
Errors & omissions	0.4	-3.5	-4.5	-5.3	0.4	0.0	8.1	0.0
Overall deficit (percent of GDP)								
Excluding grants		-14.6		-12.6	-13.0			-15.4
Including grants		-3.7		-1.4	-2.6			-6.0

Source: MINECOFIN.

1.6. Economic Outlook and Risks

1.6.1. The Global Outlook—Gathering momentum?

The global economy remains fragile, but there are some signs of improvement. The World Bank forecasts global activity to gradually improve during 2013 and 2014, leading to higher global commodity prices. These trends are expected to support a gradual strengthening in growth across sub-Saharan Africa, including EAC economies—where GDP growth is expected to rise to 4.6 percent in 2013, and 4.9 percent in 2014—supporting the outlook for Rwandan exports. However, a general climate of uncertainty continues to cloud the global economy, with ongoing concerns regarding the ability of European policymakers to address fiscal and debt issues in the Euro Zone, and for US officials to resolve the debt-ceiling debate. Hence, the possibility of another episode of financial market dislocations and deterioration in global economic momentum, cannot be ruled out.

The 2013-2014 forecasts generally present positive but highly uncertain external conditions for Rwanda. Weak economic growth will continue to be the norm in developed countries, with low or negative rates of growth, including in Rwanda’s major bilateral donors (MBD). However, economic activity in EAC countries—which account for 75 percent of Rwanda’s 2012 exports—is expected to remain strong, as modest increases in global commodity prices, and recent easing in monetary policy across the region, support strong domestic demand. Overall, growth in Rwanda’s major trading partners is expected to rise to 5.9 percent in 2013, and 5.8 percent in 2014 (Figure 31). Commodity prices are expected to remain broadly stable in 2013, before a gradual rise in 2014. This would have mixed results for Rwanda; it will curb the growth of the energy import bill but increase the price of food. Coffee prices are expected to continue trending down, while tea prices would remain flat. On the positive side, prices for tin are expected to increase towards their January 2012 levels.

Although major risks to the global economy have receded somewhat in recent months, they remain firmly tilted to the downside. Financial market uncertainty and fiscal consolidation in advanced economies are likely to be recurring sources of volatility for the foreseeable future. While Rwanda’s direct trade and financial linkage to Europe, the US, China and India are small, it

Figure 31: Growth across Rwanda’s Major Trading Partners is expected to rise modestly in 2013 and 2014
(Real GDP growth, percent)

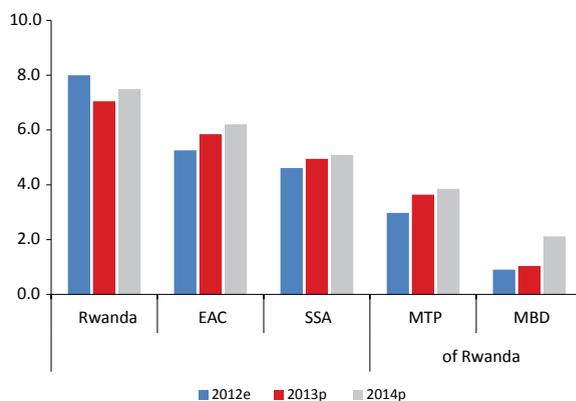
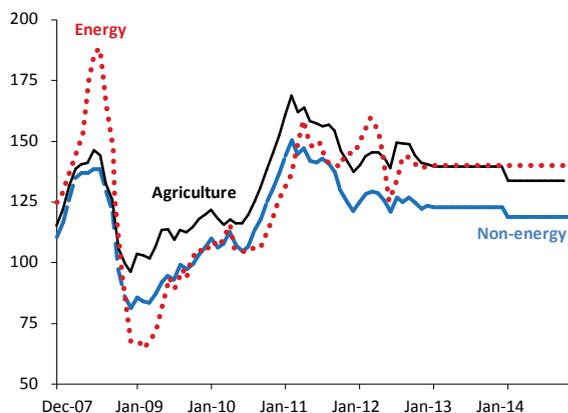


Figure 32: Global commodity prices are expected to track global growth, with prices relatively flat through 2013, before increasing modestly in 2014
(Commodity price index, 2007=100)



Note: Trading partner and bilateral growths are weighted by Rwanda’s export values and donor inflows.
Source: World Bank staff estimates based on data from the World Bank’s DEC Prospects Group.

is likely that any moderate-to-large shock to the global economy would have indirect effects on Rwanda through both trade and aid channels, as a shock to global financial markets and/or global

demand would likely impact economic activities in the other EAC economies, and could add further pressure to already tight fiscal conditions, in some of Rwanda's key donor partners.

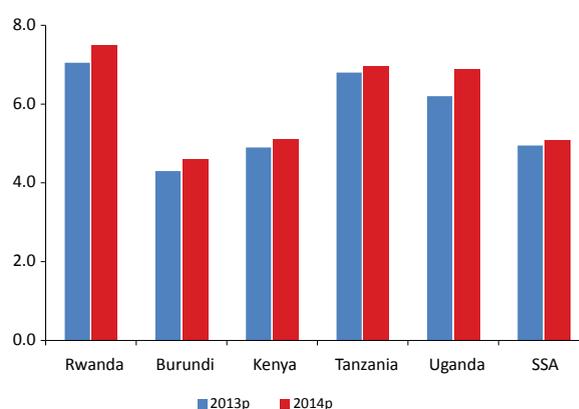
1.6.2. Rwanda's Outlook—Positive but highly uncertain

World Bank staff forecast that Rwanda's economy will grow by 7.0 percent in 2013 before recovering to 7.5 percent in 2014. The slowdown in 2013 growth is driven by lower public expenditures associated with the aid reduction during the current fiscal year. While government actions have so far limited the impact on the economy, the reduction in public expenditure will begin to have a noticeable spillover effect into related private activities, leading to a slowdown in the services sectors, especially those with strong links to public expenditures. As aid money begins to be disbursed throughout 2013, the current account deficit will decline, however, it will still remain at a very high rate. The inflation rate is forecast to remain moderate. However, global food prices and a depreciating exchange rate will put upward pressure on prices. While Rwanda's economic outlook remains positive, it is clouded by the risk of larger than projected falls in aid and associated negative spillover effects to economic growth, inflation, and poverty reduction. Over the recent years, high aid inflows have supported solid growth of the public sector and other related services. Further aid reductions could have serious costs for Rwanda's development prospects.

Rwanda's GDP growth is forecast to slow in 2013 as the effects of aid reductions begins to be felt throughout the economy.

In the revised 2012/13 budget, donor grant disbursements are projected to be US\$311 in the fiscal year 2012/13 (nearly 80 percent of originally budgeted levels or 4.2 percent of GDP). This shortfall in budget revenue will require cuts in public spending, slowing public-expenditure led services, and spilling over into other private services such as trade and retail. However, government actions to protect priority development spending will help to offset some of these negative impacts. Agriculture will continue to receive public investment to boost productivity, while continued investments in public infrastructure projects will support growth in construction. The growth outlook for the industrial sector is subject to downside risks relating to the prices for mineral exports, but expected to strengthen in 2013 and 2014, supported by higher tin production (Table 4). While Rwanda's growth outlook has weakened, its performance in 2013 and 2014 will continue to outperform its neighbors and the sub-Saharan African average (Figure 33).

Figure 33: However, Rwanda is still projected to outperform regional peers and the Sub-Saharan average in 2013 and 2014 (Annual GDP growth, percent)



Source: World Bank staff estimates, and World Bank's DEC Prospects Group.

The decline in services sector growth will weaken economic growth in 2013 but agriculture and industry sectors will provide some offsetting activity. Services growth is expected to slow as public expenditure-led services such as public administration, education and health, which have positively impacted economic growth in previous years, grow at a slower pace,

Table 4: The reduction in aid flows is projected to slow down growth in 2013 before a partial recovery in 2014
(Contribution to GDP growth, percentage points)

	2010	2011	2012e	2013p	2014p
GDP	7.2	8.2	8.0	7.0	7.5
Agriculture	5.0	4.7	3.0	3.3	3.8
Food crops	4.9	5.0	5.0	3.1	3.1
Export crops	14.1	2.9	-9.3	12.2	28.9
Industry	8.4	17.6	7.2	12.2	10.1
Manufacturing	9.3	8.1	-2.9	5.2	7.2
Construction	8.8	23.6	15.4	16.7	11.8
Services	9.0	8.9	12.2	8.0	9.5
Public expenditure led services	12.0	14.4	9.2	7.2	6.5
Other services	7.9	7.0	13.3	8.4	10.6

Source: World Bank staff estimates, and World Bank's DEC Prospects Group.

given cuts in public spending. Other services such as transport are likely to be adversely impacted as the GoR significantly reduces its purchasing of goods and services. Agricultural activity will continue to benefit from substantial public investments in the sector, including in irrigation improvements and productivity increases. Preliminary data of the agricultural season suggests that if rain conditions do not change dramatically, crop output will improve in 2013 and 2014. Industrial growth is forecast to strengthen in 2013 and 2014 due to a projected increase in tin production, given recent private investment in the sector. Construction activities for 2013 will remain substantial, due to large ongoing public infrastructure investments.

After a significant widening of Rwanda's current account deficit in 2012 due to the sudden-stop in official transfers, the current account deficit is expected to narrow in 2013, owing to a resumption of aid flows. After deteriorating sharply to a record-high of 10.6 percent of GDP in 2012, the current account deficit is expected to narrow to 8.5 percent in 2013, given the expectation that both the aid shortfall recorded in 2012, and the projected aid inflows in 2013, are disbursed during the 2013 calendar year.

Inflation prospects for 2013 are expected to be moderate, but a further depreciation of the Rwandan franc, coupled with rising public domestic borrowing present upside risks.⁸

Starting October 2012, import prices, especially international transportation prices, started to trend upwards and reached 3.2 percent in December 2012. This reflects the effect of a weakening currency that has started to affect prices which are denominated in US dollars, such as air tickets. Furthermore, the inflation rate is expected to rise, due to higher domestic borrowing to finance the FY2012/13 budget as well as higher international food and fuel prices. Unlike the situation in 2012, when fiscal policy responded by reducing fuel taxes, there is limited space for a policy response in the current environment, to limit the pass-through of international prices to consumers. Food inflation will need to be carefully monitored given that it has been in double digits during 2012, and is expected to continue its upward trend.

The continued uncertainty of donor disbursements clouds the economic outlook for Rwanda. The baseline projections are based on a shortfall of donor funds in 2012/13, of 25 percent, relative to the originally budgeted

⁸The Rwandan Authorities project inflation of 7.5 percent by the end of 2013.



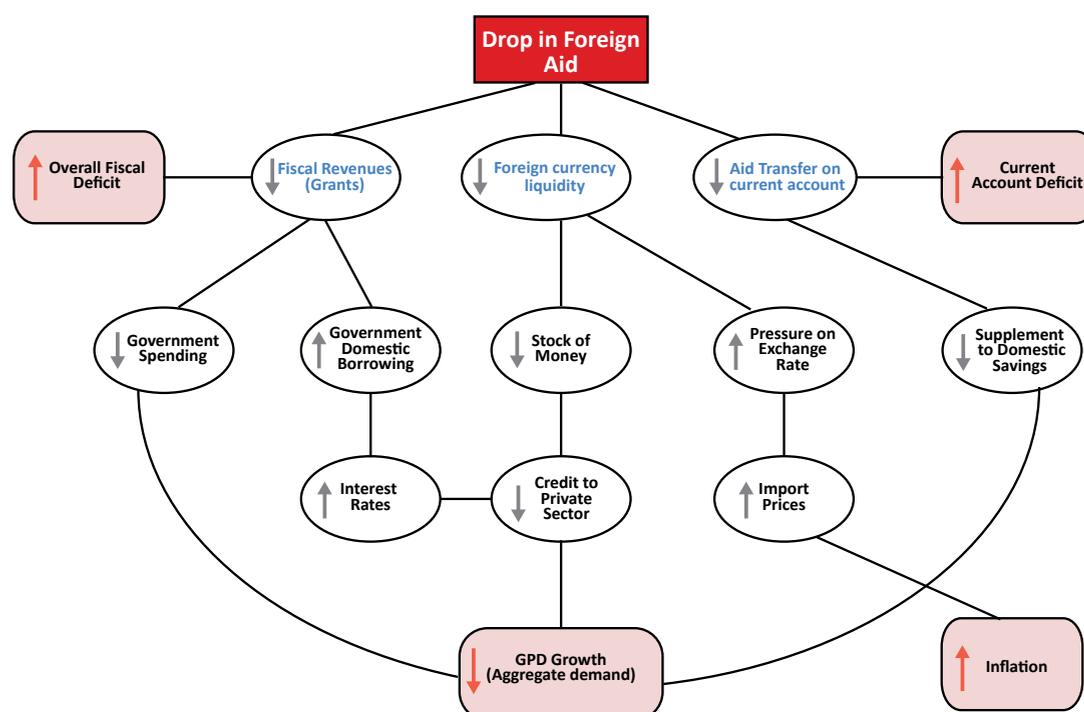
amounts at the start of the fiscal year (that is, a shortfall of US\$104.4 million, equivalent to 1.4 percent of GDP). However, there is a risk that a larger shortfall will eventuate in the current fiscal year. In such a scenario, public spending would need to be cut even further than projected, with related spillovers to the private sector. The current account would increase substantially,

with foreign exchange levels falling further, placing additional pressure on the exchange rate and inflation. The fall in growth would have serious implications for Rwanda's development prospects. A more detailed analysis of how a potential aid reduction would be transmitted to the economy is presented in the following section.

1.6.3. Risk Scenario — How a large “aid shock” would affect the Rwandan economy

Rwanda's dependence on aid makes it vulnerable to volatility in disbursements. As outlined in the previous sections, the recent cut in donor support is projected to have a sizeable impact on the Rwandan economy. When considering the risks from an aid shortfall, it is important to not only understand the transmission channels, but also to quantify potential impacts. As shown in Figure 34, the transmission of an aid shortfall to the Rwandan economy will flow through several channels. The main impact on activity will come from a reduction in public spending, both directly and indirectly, through private sector spillovers. An aid shortfall will have several indirect impacts on economic growth, by reducing foreign reserves, depreciating the exchange rate and raising borrowing rates. The current account deficit will remain significantly in deficit and inflation will rise. An aid shortfall will also have dire consequences on the poor in Rwanda. Specifically, it is estimated that the recent achievements that Rwanda has made in terms of poverty reduction and social development indicators, will be severely impacted by an aid shortfall. In this section, World Bank staff present different scenarios of aid reductions and their potential impacts on both economic and social indicators.

Figure 34: Transmission Mechanisms of a Reduction in Aid to the Rwandan Economy



Source: World Bank staff.

To illustrate the potential impact of a shortfall in aid (i.e., a reduction in budget support grants), a ‘worse-case’ scenario was simulated and compared to the baseline scenario.

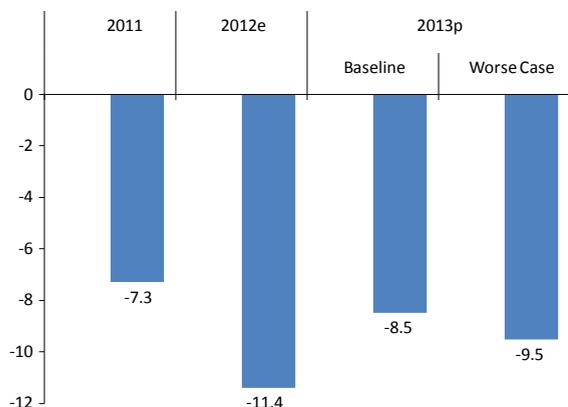
- **Baseline scenario:** This scenario is the central forecast presented in the outlook section. It simulates the impact of a 25 percent drop in the originally planned general or sector budget support during the FY2012/13 (that is, a shortfall equivalent to US\$104.4 million or 1.4 percent of GDP). In addition to budget cuts in the revised budget, it is assumed that the government would further adjust its spending proportionally to this shortfall in aid, by cutting contingent items.
- **Worse-case scenario:** This scenario simulates the impact of an additional 25 percent shortfall relative to the baseline scenario. That is, under this scenario, the shortfall of aid in FY2012/13 would be equivalent to US\$194 million or 2.6 percent of GDP. In response to this shortfall in aid, the government is assumed to cut contingency items proportionally to this shortfall in aid.

World Bank staff estimate a reduction in budget support equivalent to 1 percent of GDP would lead to a reduction in GDP growth

of about 0.7 percentage points. Under the baseline scenario, which already considers a 25 percent reduction in budget support in comparison to the budgeted amount, GDP growth is estimated at 7.0 percent in 2013, and the current account deficit is projected at 8.5 percent of GDP. However, under the worse-case scenario, an additional 25 percent reduction in budget support, in comparison to the baseline, will reduce GDP growth further by 0.8 percentage points, that is, from a GDP growth rate of 7.0 percent to 6.2 percent. Meanwhile, the current account deficit under the worse-case scenario is projected to widen to 9.5 percent of GDP, which is 1 percentage point higher than the baseline scenario (though a mild improvement relative to the record-high current account deficit recorded in 2012). As noted earlier, the current account deficit is expected to improve in 2013, because part of the aid that was expected to be disbursed 2012 is projected to be disbursed in 2013.

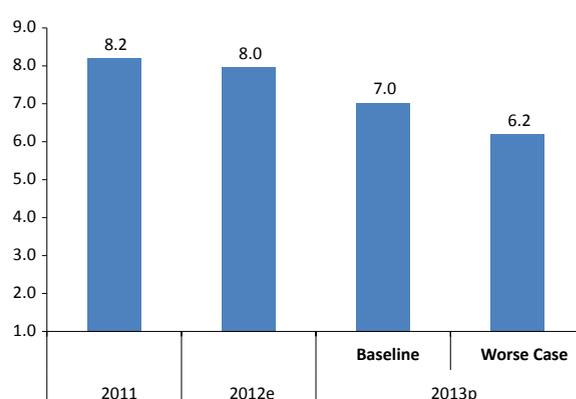
When undertaking any scenario analysis, a number of simplifying assumptions must be made. In particular, they do not project an impact on the fiscal deficit, given that it is expected that the Government of Rwanda will cut spending in proportion to any shortfall in aid, in order to maintain its target for the fiscal

Figure 35: The current account will remain at around historic highs under each scenario...
(Current account deficit, percent of GDP)



Source: World Bank staff estimates.

Figure 36: ...with GDP growth slowing to the lowest rate since 2007 under the worse-case scenario
(Annual real GDP growth, percent)



balance. In other words, the government is expected to preserve macroeconomic stability. Similarly, the scenarios presented here assume only first-order effects. That is, second-round impacts on the exchange rate or inflation, which would in turn affect economic activities further, are not considered. To account for changes in the trade balance, it is assumed that cuts in capital expenditures would have an import content of investment of 50 percent. Given the importance of aid inflows in the process of money creation in Rwanda—e.g., aid inflows contributed to more than 80 percent of money creation over the last decade—the scenarios assume that a shortfall in aid will negatively affect private investment, through credit squeezing. Based on key findings from a recent Enterprise Survey conducted in Rwanda in 2011—the survey shows that only 24 percent of firms in Rwanda use banks to finance their investments, while 76.3 percent of firms finance their investment using internal resources—it is assumed that the elasticity between a shortfall in aid to a reduction in private investment, is equivalent to about 5.7 percent.

In addition to its macroeconomic impact, a shortfall in aid has the potential to significantly slow down the progress Rwanda has made over the past decade, in reducing poverty and improving the living conditions of its citizens. A major reason for the social gains has been government development spending. A range of social indicators, such as school completion rates, are highly correlated to real government expenditure. This close link highlights the vulnerability of Rwanda's poverty goals to government spending. By using this relationship, it is estimated that aid shortfall will have an impact on social indicators. The analysis predicts that the poverty level by the end of 2013 would be 1.4 percentage points higher (relative to the baseline) in the event of an aid shortfall equivalent to a 50 percent reduction in budget support (2.6 percent of GDP). While this estimate may seem small in scale, it is estimated that approximately 150,000 people would be unable to escape poverty in 2013, a figure equivalent to more than the combined population of Rwanda's secondary cities Musanze and Rubavu together (Box 8).

Box 8**Progress, Interrupted?**

Estimated social and poverty impacts of an aid shortfall to Rwanda

Over the last decade, there has been a strong correlation between government expenditures and the evolution of social indicators. Between 2001 and 2011, government expenditures tripled in real terms. This was associated with:

- A three-fold increase in primary school completion rates from 24 percent in 2001 to 78.6 percent in 2011.
- A reduction in the fraction of people living in poverty from 59 percent in 2001 to 45 percent in 2011.

The close correlation between Government expenditures and social outcomes is both good and bad news. It is good as it would suggest that Government spending has been effective in improving the living standards at the household level. It is bad, since it would suggest progress in social indicators is vulnerable to shocks in the Government budget.

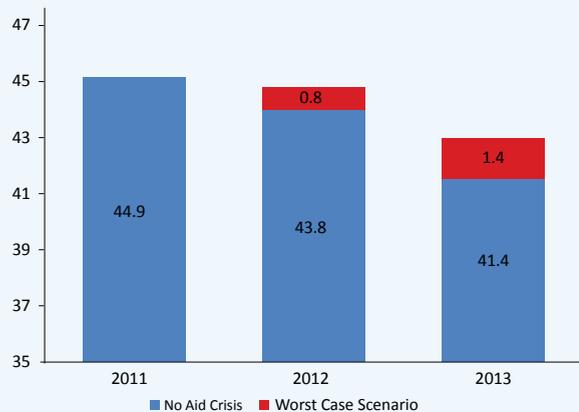
Based on the trends spanning the last decade, it is estimated that social indicators will evolve under two alternative scenarios:

1. **The aid shortfall never happened (counterfactual scenario):** Here it is assumed that the level of aid would have remained at the levels projected before the suspension of aid to Rwanda in mid-2012 (in other words, donor disbursements would be the same as those projected in the original FY2012/13 budget), and as a result, government expenditures would not be affected;
2. **Worst-case scenario:** Here the impact of a 50 percent shortfall in budget support in the 2012/13 fiscal year is stimulated, equivalent to US\$194 million; as a result of this aid shortfall, the government is assumed to reduce spending proportionally by cutting contingency items.

The poverty impact from a shortfall in aid would be significant. If the level of aid would have been the same as what was projected in the original FY2012/13 budget, it is estimated that the poverty rate would have declined from 44.9 percent in 2011 to 41.4 percent in 2013. However, under an alternative scenario, where budget support

drops by 50 percent, it is estimated that the poverty rate would be 42.8 percent in 2013, that is, 1.4 percentage points higher than a situation without an aid shortfall (Figure 37).

Figure 37: An aid shortfall of 50 percent in budget support in FY2012/13 could hold back poverty reduction by 1.4 percentage points by 2013
(Estimated headcount poverty rates in Rwanda, 2011-2013)



Source: World Bank staff estimates based on the EICV3.

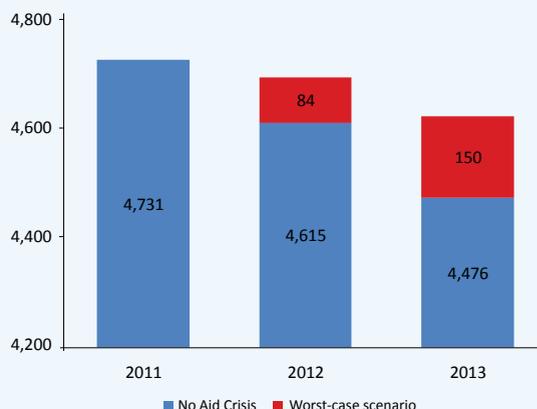
Although this may seem like a small impact in relative terms, it would mean that almost 150,000 people who would have otherwise escaped poverty by the end of 2013, would remain trapped under the poverty line. To illustrate, this is more than the combined population of Rwanda’s secondary cities Musanze and Rubavu combined; it is also more than the total population of some small countries across the world.

An aid shortfall is also projected to have impact on primary school completion rates as shown in Figure 39. While in the absence of an aid shortfall completion rates were projected to attain almost 100 percent by 2013, under a worse-case scenario the aid shortfall could hold back the increase by over 5 percentage points.

It should be noted that the simulations assume that the correlations between social indicators and government expenditure represent causal relationships. In reality, the improvements in social indicators have resulted from a complex set of interactions between government programs, GDP growth, and other factors, and there is a considerable level of uncertainty, as to the nature of that relationship. The analysis presented here should only be viewed as broad indicatives of the potential order of magnitude, of the effect of a drop in external assistance. Nevertheless, it is clear that a shortfall of budget support can substantially slow down Rwanda’s recent progress in social indicators.

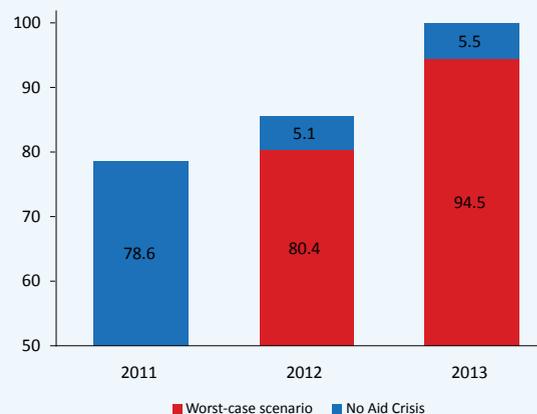
Source: World Bank staff.

Figure 38: This would imply that more than 150,000 people in Rwanda will not be able to escape poverty by 2013 relative to a situation in which the aid shortfall would not have taken place
(Estimated number of people living below the poverty line, thousands)



Source: World Bank staff estimates based on the EICV3.

Figure 39: An Aid Shortfall Could Significantly Delay the Attainment of Universal Primary Education
(Estimated primary education attainment, percent)



Source: World Bank staff estimates based on the EICV3.

PART TWO

Focus Section: Rwanda's Pathway Out of Poverty



2.1. Introduction

This Fourth Edition of the Rwanda Economic Update focuses on the improvements in household living standards and the reduction in poverty, associated with Rwanda's recent strong growth performance. Between 2001 and 2011, Rwanda averaged an annual growth rate of above 8 percent, and GDP grew by 60 percent in real terms. The strong macroeconomic growth performance was accompanied by substantial improvements in living standards, as witnessed by the two-thirds drop in child mortality, and the attainment of near-universal primary school enrolment. Household consumption grew rapidly, resulting in the poverty headcount falling from 59 percent in 2001 to 45 percent in 2011. Growth in Rwanda over the past decade has been pro-poor, with relatively larger consumption gains for the poor than for the non-poor. Inequality dropped as a result, albeit slightly. However, in the capital of Kigali, inequality increased during the 2000s, due to slow growth of the Kigali middle class. Overall, despite the high rate of poverty reduction and pro-poor growth, high population growth meant that the absolute number of poor in Rwanda only decreased by 1 percent.

Agriculture has been the main driver of growth and poverty reduction in Rwanda, significantly lifting rural households out of poverty. Although the share of agriculture in GDP decreased significantly over the past decade, agriculture remains the backbone of the Rwandan economy, in terms of employment and income-generation for the majority of households. Driven by increased investments in agricultural inputs, land consolidation and infrastructure, agricultural production at household level more than doubled between 2001 and 2011. Together with increased commercialization, reflected in the rising share of harvests being sold in local markets, the increase in production accounted for up to one-third of the growth of rural consumption over the past decade.

Rwandan households have diversified their income portfolios by taking up non-farm activities, in addition to their agriculture

activities. The percentage of households with at least one non-farm activity more than doubled from 30 percent in 2001 to 70 percent in 2011. This is true for both self-employment and wage employment. As a result, the average number of income sources of Rwandan households has increased sharply. The observed diversification had two positive effects. First, diversification has reduced income risk inherent to engaging in rain-fed agriculture as households now have other income activities to cushion a potential shock. Second, diversification also explains the rise in consumption, among both the rural and urban poor. Taking up non-farm self-employment in small informal households businesses have been particularly important for rural households, and the move has emerged as the single main driver of household consumption growth in Kigali.

The rapid fall in fertility rates in Rwanda over the past decade has reduced the nation's average family size. This has significantly brought down the child dependency ratio—the number of economically dependent children for each working-age adult in the household—which has been associated with increased disposable income, both in Kigali and in the rural areas. Decreased dependency ratios have especially benefited the households in the middle of the income distribution, who experienced the largest relative fertility declines. Population projections show that Rwanda has entered the third phase of the demographic transition, which could spur future growth if the economy is able to absorb the bulge in working-age adults.

The results of the analysis suggest that if Rwanda can sustain increases in agricultural productivity over the medium term, poverty will continue to fall, especially if business activities increase along with the boom in agriculture. Since virtually all of Rwanda's poor depend on agriculture to generate income, scaling up agricultural intensification and commercialization will be the quickest way to get significant numbers of people out of poverty. Currently, the Government's and development

partners' main agricultural programs cover only a small part of available land, which means that there is an opportunity to expand them, and significantly reduce poverty. The Government should link the scaling up of agricultural programs with the promotion and facilitation of business activities, that can thrive on increased agricultural production, especially those related to trade, post-harvest storage and processing.

This special focus proceeds as follows. Section 2 uses data from three integrated household living standards surveys (implemented in 2000/1, 2005/6 and 2010/11) to paint a detailed picture of the evolution of poverty and inequality in Rwanda between 2001 and

2011. This section also elaborates on the different performance in terms of growth and poverty reduction in the first half of the previous decade (2001 to 2006), compared to the second half (2006 to 2011). In section 3, attempts will be made to explain the observed consumption growth and poverty reduction, by focusing on three key evolutions during the past decade: the boom in agriculture, increased diversification into non-farm activities and the changing demographic composition of Rwandan households. The first subsection of Section 3 sketches these evolutions, while the second subsection examines if, and to what extent, they have been associated with the improvements in living standards, followed by the conclusion in the final section.

2.2. A Decade of Growth and Poverty Reduction⁹

Household consumption in Rwanda increased by 28 percent in real terms over the past decade, resulting in a drop of 14 percentage points in the poverty headcount, from 59 percent in 2001 to 45 percent in 2011. In 2011, the average adult in Rwanda lived on US\$2.5 a day, with a significant disparity between Kigali (US\$7.6) and the rest of the country (US\$1.9).¹⁰ Consumption growth over the past decade has been higher for poor households than for non-poor households, resulting in a decrease in inequality. However, in Kigali, inequality slightly increased over the past decade due to slow growth of the middle class, compared to the growth recorded by both the poor and the rich. Despite the impressive reduction in the poverty headcount, the number of people in Rwanda who live in poverty declined by only 1 percent, due to high population growth.

2.2.1. Strong Household Consumption growth and Poverty Reduction

The solid GDP growth in the last decade was associated with a substantial increase in average household consumption as measured by the household living standards surveys (EICV). Total household consumption expenditures per adult equivalent recorded an increase of 28 percent between 2001 and 2011, translating into an annual growth rate of 2.5 percent. While the average household spent Rwf210,000 per adult

per year in 2001, this had risen to 270,000 in 2011¹¹. Consumption growth was a little lower in Kigali (27 percent) than in the rest of the country (30 percent)¹². Despite the slower growth in Kigali, average consumption in 2011 was still almost four times higher in Kigali (Rwf826,000) than in the rest of the country (Rwf212,000—Table 5).

The growth in household consumption translated into impressive poverty reduction. Poverty headcount—the share of the national population living below the national poverty line

⁹A number of figures in this special focus are different from the numbers mentioned in the 2012 official Poverty Report (Republic of Rwanda, 2012). This can be explained by our different treatment of outliers.

¹⁰Based on the 2011 Purchasing Power Parity exchange rate of \$1=Rwf297.1 (IMF, 2013).

¹¹Expenditures are expressed in constant 2011 prices.

¹²Throughout this special focus we maintain the distinction between Kigali and the “Rest of the Country”. Although it would be more straightforward to use the urban-rural distinction, the reclassification of enumeration areas following the 2002 census meant that some enumeration areas that were rural in the 2001 survey were classified as urban following the 2002 census. This implies that the urban-rural classifications in the 2001 and 2011 EICVs are not comparable and would lead to misleading representations. As a result, we use the distinction between Kigali and the Rest of the Country (which corresponds closely to the urban-rural difference).

Table 5: Solid Household Consumption Growth and Poverty Reduction Between 2001 and 2011
(Consumption per Adult Equivalent in 2011 Prices and Percentage of Population Below the Poverty Line, 2001-2011)

	Consumption per AE		Poverty Headcount	
	2001	2011	2001	2011
Kigali	660,112	825,927	22.7	16.8
Rest of Country	162,844	211,625	63	47.8
Rwanda	210,043	270,921	58.9	44.9

Source: EICV1 and EICV3.

Box 9 The Cost of Basic Needs
Rwanda's Poverty Line

To measure the incidence of poverty, Rwanda uses an absolute poverty line defined as a minimum food consumption basket that offers the required number of calories for a Rwandan adult involved in physically demanding work. The cost of this minimum food basket is the food poverty line, also called the extreme poverty line, and amounts to Rwf83,000 per adult per year in 2011 prices (about US\$0.81 per adult per day). When augmented with an allowance for basic non-food consumption, the overall poverty line equals Rwf118,000 (about US\$1.09 per adult per day). When referring to the “poor”, reference is made to people living in households with per adult equivalent expenditures below this amount¹³

Source: World Bank staff

(Box 9)—dropped from 59 percent at the start of the decade to 45 percent in 2011. In Kigali, home to 10 percent of Rwanda's population poverty levels decreased by six percentage points, from 22.7 percent in 2001 to 16.8 percent in 2011. Starting from a much higher base, the rest of the country experienced a 15 percentage point drop in poverty (Table 5). Despite the slower growth recorded in Kigali, poverty reduction was relatively higher in Kigali than in the rest of the country: While poverty levels in Kigali decreased by 26 percent, in the rest of the country it decreased by 24 percent. This can be explained by the fact that the poor in Kigali were located closer to the poverty line than the poor in the rural areas, and hence, needed to grow less to cross the poverty line.

Despite the strong poverty reduction over the last decade, poverty was relatively unresponsive to growth. While consumption increased by 28 percent, poverty levels decreased by 24 percent, resulting in a growth-elasticity of poverty of -0.82. The growth elasticity of poverty measures the percentage change in the poverty headcount for each percentage change in consumption. Over the past decade, a 1 percent increase in average household consumption was associated with a 0.8 percent decrease in the poverty headcount,

Table 6: Growth in Rwanda was Pro-Poor but Poverty was relatively Inelastic to Growth
(Rate of Pro-Poor Growth and Growth Elasticity of Poverty in a Selection of Countries)

Country	Rate of Pro-Poor Growth (%)	Growth Elasticity of Poverty
Vietnam	4.3	-1.41
El Salvador	4.1	-1.04
Brazil	3.2	-0.78
Rwanda	3.1	-0.82
Uganda	2.7	-1.04
Ghana	2.1	-1.19
Bolivia	1.9	-0.73
Senegal	1.8	-0.95
India	1.2	-2.38
Tunisia	1.2	-1.79
Burkina Faso	1.0	-2.00
Bangladesh	0.7	-1.56
Romania	-2.6	-2.03

Source: World Bank, 2005.

which compares poorly with an estimated average global elasticity of -2 (Ravallion, 2001 and 2004).¹⁴ For the sake of comparison, Figure 6 shows the growth elasticity of poverty in a selection of countries for the decade between

¹³Conversions to US\$ use the 2011 Purchasing Power Parity exchange rate of US\$1=Rwf297.1 (IMF, 2012).¹⁴It is worth noting that the estimates of growth-elasticity of poverty can be sensitive to initial levels of GDP or consumption. For instance, at a lower initial level of GDP, smaller absolute changes lead to higher growth rates; similarly if the initial poverty level is high (i.e., the initial average consumption level is low), smaller absolute changes lead to lower percentage changes. This means that if the initial level of GDP or consumption is low, the growth-elasticity of poverty can be underestimated.

the early 1990s and the early 2000s. Only two countries in the table had growth elasticities lower than Rwanda's over the past decade (the high inequality countries of Bolivia and Brazil). If Rwanda had had the growth elasticity of Ghana during the 1990s (-1.19), poverty headcount would have dropped by 20 percentage points, instead of the observed 14 percentage points.

High population growth during the past decade meant that the absolute number of people

living in poverty only declined marginally, despite a large drop in the poverty headcount.

The absolute number of people living below the poverty line increased from 4.79 million in 2001 to 5.26 million in 2006, and fell back to 4.73 million in 2011 (Figure 40 and Figure 41). While poverty headcount dropped by 24 percent between 2001 and 2011, the number of people living in poverty dropped by only 1 percent (Box 10).

Figure 40: The Percentage of people Below the Poverty Line Sharply Decreased
(Percentage of People Below the Poverty Line)

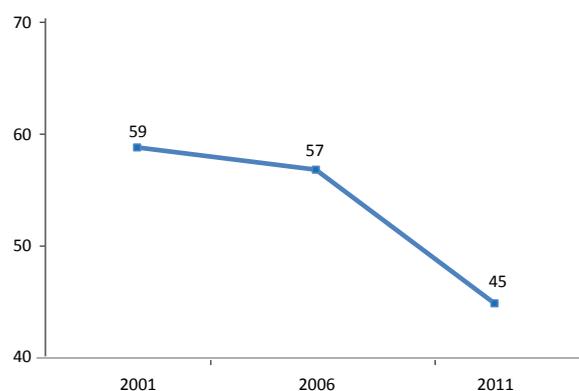
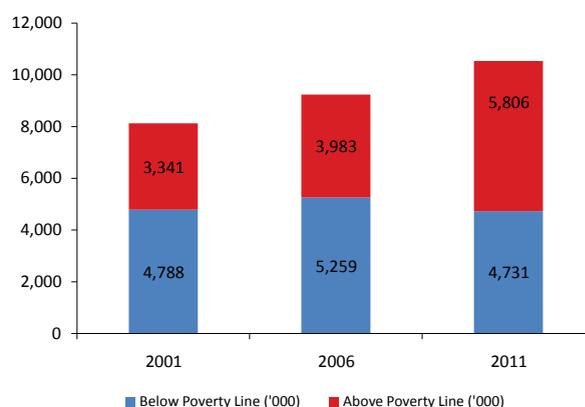


Figure 41: Though the Absolute Number of People in Poverty Declined only Marginally due to Population Growth
(Number of people Below and Above the Poverty Line, '000)



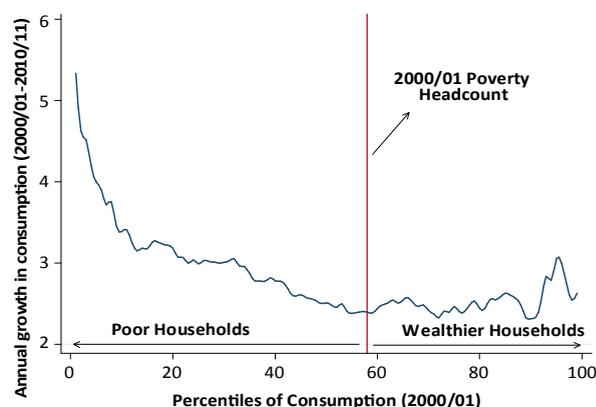
Source: EICV1, EICV2, EICV3, 2002 Census, 2012 Census and World Bank Calculations.

2.2.2. Absolute Gains for Everyone, but Largest for the Very poor and the Very Rich

Figure 42 summarizes average growth rates in consumption at every percentile of the distribution. As can be illustrated in the Figure titled the “growth-incidence curve”, the average growth rate is positive at every percentile, indicating a net gain in consumption between 2001 and 2011 in all wealth categories. From the shape of the curve, it is illustrated that average growth rates were highest for the poorest households (left-hand side of the figure) before dropping to about three percent at approximately the 25th percentile. The mean growth rate remained at three percent until the 35th percentile, after which it dropped and oscillated around 2.5 percent until the 90th percentile. At the top end of the distribution, mean growth rates increased again.

Figure 42: The Poor Grew Faster than the Non-Poor Between 2001 and 2011

(Growth-Incidence Curve for Rwanda, 2001-2011)



Source: EICV1 and EICV3.

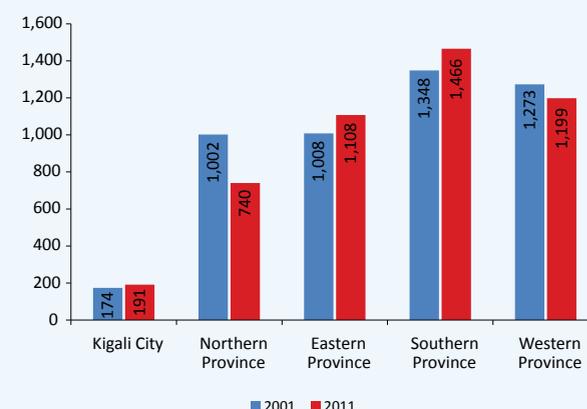
Box 10 **Relatively Better than Absolute**
Absolute Number of Poor Fell Only Slightly Due to High Population Growth

The 2012 Population and Housing Census put Rwanda's population at 10.5 million, up from 8.1 million in 2002. The annual population growth rate of 2.6 percent is short of the annual pace of poverty reduction of 2.7 percent. As a result, the absolute number of people living in poverty (which combines the poverty headcount with population figures) declined by only 1 percent between 2001 and 2011, despite the 14 percentage point reduction in the poverty headcount (Figure 40).

The small drop in the number of people living below the poverty line can almost entirely be accounted for by the Northern Province. While the number of people living in poverty increased in the Southern and Eastern Provinces and Kigali, it dropped by 26 percent in the Northern Province (Figure 43). Not only did the Northern Province have the strongest pace of poverty reduction in all regions (annual drop of 4 percent compared to 2.7 percent globally), but it also had the slowest population growth (annual growth rate of 1 percent compared to 2.6 percent globally). The net result was a drop in the number of people below the poverty line from 1 million in 2001 to 0.74 million in 2011.

Figure 43: Only Two Regions Experienced a Drop in the Number of Poor

(The Absolute Number of Poor by Region, '000)



Source: EICV1, EICV3, 2002 Census, 2012 Census.

Table 7 shows the relationship between population growth, the rate of poverty reduction and the percentage change in the number of people below the poverty line. The absolute number of poor people increased in regions where the rate of population growth was higher than the rate of poverty reduction. The two regions with the largest increase in the absolute number of poor (Eastern Province and Kigali) are the regions with the highest population growth rates: 4.3 percent for Eastern province and 4.0 percent for Kigali. These two regions had the highest rate of poverty reduction in the early 2000s, which probably explains why to some extent, their high population growth was due to the influx of people from other regions (Table 7).

Despite the stagnation in the number of people living in poverty, there is hope on the horizon. If current trends in poverty reduction persist, there will likely be a substantial drop in the absolute number of poor over the next ten years. Data from the 2005 and 2010 Demographic and Health Surveys showed that total fertility rates are fast dropping from 6.1 in 2005 to 4.6 in 2010. This drop in fertility combined with strong reduction in the poverty headcount will—if sustained—translate to sharply falling poverty numbers, over the coming decades.

Table 7: The Number of People in Poverty Decreased in the Regions With Below Average Population Growth
(Population growth, Reduction in Headcount Poverty and The Change in the Number of People Below the Poverty Line)

Region	Annual Population Growth (percent)	Annual Pace of Reduction in the Poverty Headcount (percent)	Percentage Change in # of People below Poverty Line
Kigali	4.0	3.0	9.8
Northern Province	1.0	4.0	-26.1
Eastern Province	4.3	3.3	9.9
Southern Province	2.3	1.5	8.7
Western Province	1.9	2.5	-5.8

Source: EICV1, EICV3, 2002 Census, 2012 Census

Source: World Bank staff.

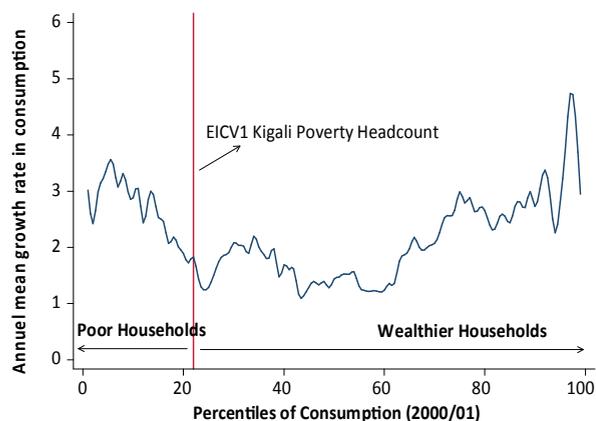
Poor households recorded on average higher growth rates between 2001 and 2011 compared to better-off households. Casual examination of the growth-incidence curve suggests that average growth rates for the households to the left of the vertical red line were on average higher than those to the right of the vertical line. The vertical red line depicts the poverty headcount in 2001. The average growth rate for the poor households amounted to 3.1 percent, which is higher than the 2.9 percent growth rate for the whole distribution. The rate of pro-poor growth, which Ravallion and Chen (2003) define as the average growth rate for the poor, amounted to 3.1 percent per annum between 2001 and 2011 (Box 11). Table 6 compares Rwanda's rate of pro-poor growth with that of 12 other countries. Only three of the 12 countries have higher rates of pro-poor growth than Rwanda, highlighting Rwanda's strong performance in shared growth.

The pro-poor nature of growth between 2001 and 2011 can entirely be accounted for by the exceptionally strong growth rates for the extremely poor. The average growth rate of the bottom 20 percent of the distribution amounted to 3.7 percent per annum, and was substantially

higher than the overall average growth rate of 2.9 percent. Beyond this, mean growth rates for the poor are actually lower than those for the non-poor. This pattern may reflect the impact of the policies that were adopted in Rwanda's Second Poverty Reduction Strategy (EDPRS), which put an emphasis on reducing extreme poverty, through investments in agriculture and social protection.

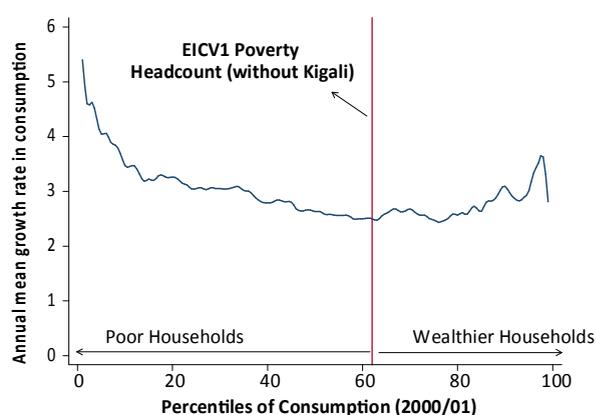
The distribution of growth was different in Kigali than in the rest of the country. The growth-incidence curve for Kigali shows a clear U-shaped pattern, with strong growth for the very poor and in particular the very rich (Figure 44). The urban "middle class", the part of the distribution roughly between the 40th and the 80th percentile recorded relatively slow growth, with mean growth rates of between 1 and 2.5 percent per annum (except for a peak around the 75th percentile). The growth-incidence curve for the rest of the country mirrors that for Rwanda as a whole, with a U-shaped pattern that is less pronounced than in Kigali (Figure 45)¹⁵. The rate of pro-poor growth was higher in the rest of the country (3.1 percent per annum) than in Kigali (2.7 percent per annum).

Figure 44: High Growth for the Very Poor and Very Rich in Kigali
(Growth-Incidence Curve for Kigali, 2001-2011)



Source: EICV1 and EICV3.

Figure 45: Strong Growth for the Extremely Poor in the Rest of the Country
(Growth-Incidence Curve for the Rest of the Country, 2001-2011)



Source: EICV1 and EICV3.

¹⁵Given that the rest of the country accounts for 90 percent of Rwanda's population, the growth pattern for Rwanda as a whole will always mirror that of the rest of the country.

Box 11 **Sharing is Caring**
The Definition of Pro-Poor Growth

There are two frequently used definitions of pro-poor growth. According to the first definition, growth is pro-poor if it benefits the poor more than it does the non-poor (Baulch and McCulloch, 2000; Kakawani and Pernia, 2000). According to the second definition growth is pro-poor if it reduces poverty (Ravallion and Chen, 2003).

It is obvious that the first definition is more stringent than the second. Even if growth rates for the poor are high, the first definition will not consider this pro-poor if growth rates for the non-poor are higher. In contrast, the second definition will consider growth pro-poor if growth rates for the poor are strictly positive, regardless of the growth rates for the non-poor. In terms of inequality, the first definition requires falling inequality for growth to be considered pro-poor. Using the second definition pro-poor growth may well increase inequality, depending on the growth rates for the non-poor. Rwanda's growth performance between 2001 and 2011 was pro-poor according to both definitions: It reduced poverty and benefited the poor more than the non-poor (reduced inequality).

Source: World Bank staff.

2.2.3. A Small Decrease in Inequality and a Relative Loss for the Middle Class in Kigali

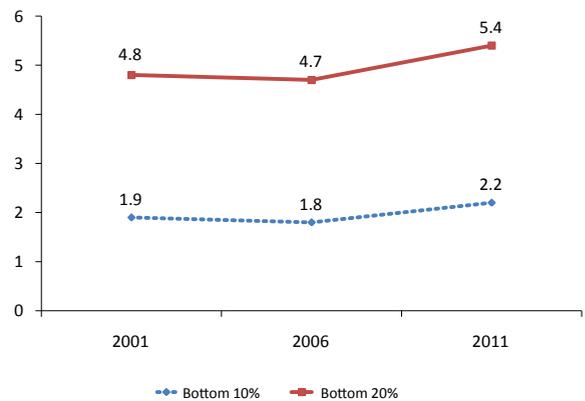
The pattern of growth between 2001 and 2011 has mainly benefited the very poor.

The higher growth rates for the poor resulted in a declining share of total consumption for the top end of the distribution. Figure 46 shows the consumption shares of the poorest households between 2001 and 2011. The consumption share of the poorest 10 percent of households decreased from 1.9 percent in 2001 to 1.8 percent in 2006, but increased to 2.2 percent in 2011 (EICV3), higher than the share in 2001. In a similar fashion, the consumption share of the bottom 20 percent of household declined fast, from 4.8 percent in 2001 to 4.7 percent in 2006, and then increased substantially to end the decade, higher than it started (5.4 percent).

Focusing on the other end of the distribution, the exact opposite pattern is established. The consumption share of the richest 10 percent increased between 2001 (42.8 percent) and 2006 (44.7 percent) but fell back to 42 percent by 2011, still high but lower than the share at the start of the decade. A similar pattern is observed for the richest 20 percent, who saw

Figure 46: The Consumption Share of the Poorest 10% and 20% Increased Between 2001 and 2011

Share of Total Consumption of the Poorest 10 and 20 percent of the Population, 2001-2006-2011)



Source: EICV1, EICV2 and EICV3.

their consumption share decrease from 56.8 percent in 2001 to 55.9 percent in 2011. While the consumption share of the households in the middle (defined as the households between the 40th and the 80th percentile (Box 12) remained stable at the national level (30.1 percent in 2001 and 2011), the consumption share of the middle class dropped in Kigali: from 31.3 percent in 2001 to 28.3 percent in 2006, and 29.7 percent in 2011, recording a drop of 1.6 percentage points over the decade (Figure 47).

The higher consumption shares of the poor resulted in a decrease in inequality, especially among the poor. Inequality as measured by the Gini coefficient increased between 2001 and 2006, but fell back to 0.490 in 2011, lower than the 2001 level (0.507-Figure 48). The Atkinson index of inequality, which is more sensitive to inequality among the poor, shows a larger drop from 0.52 in 2001 to 0.48 in 2011¹⁶. A more thorough examination of inequality confirms that the drop in the Gini is entirely due to decreasing

inequality among the poor: While inequality among the poor decreased from 0.21 in 2001 to 0.16 in 2011, inequality among the non-poor remained stable at 0.46. In line with the loss of consumption share of the middle class (Box 12), inequality in Kigali was a little higher in 2011 (0.57) than in 2001 (0.56).

Given the small decrease in inequality, almost all of the poverty reduction in Rwanda between 2001 and 2011 can be accounted for by the

Figure 47: Falling Consumption Shares of the Wealthiest Groups and of the Kigali Middle Class
(Share of Total Consumption of the Wealthiest 10 percent and 20 percent of households and of The Middle Class in Kigali)

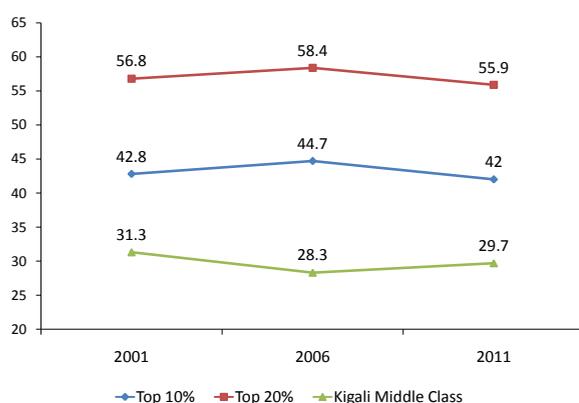
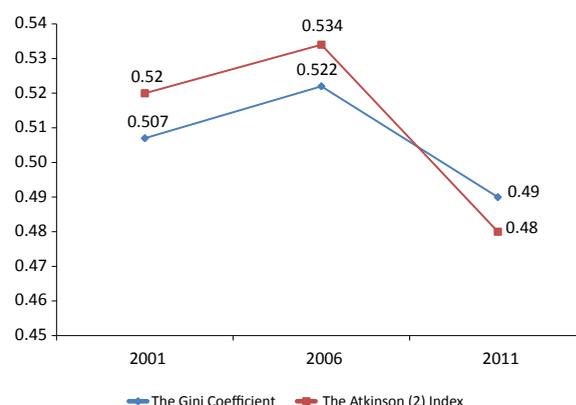


Figure 48: Decrease in Inequality, Particularly Among the Poor
(Gini Coefficient and Atkinson Coefficient of Inequality, 2001-2006-2011)



Source: EICV1, EICV2 and EICV3.

Box 12 Kigali's Missing Middle A Falling Consumption Share for the Middle Class in Kigali

In contrast to poverty, there is no widely accepted definition of what constitutes the middle class. In this study, the middle class is defined as those households with per adult equivalent consumption expenditures of between the 40th and 80th percentile (located roughly in the middle of the consumption distribution). This corresponds quite well to the demarcation of the middle class used in other studies. In 2011, the households between the 40th and 80th percentile had daily per adult equivalent expenditures of between US\$2.7 and US\$9.1. For the sake of comparison, Banerjee and Duflo (2008) use two definitions of the middle class, ranging from US\$2 to US\$4 per capita per day for the lower middle class and US\$6 to US\$10 for the upper middle class. Easterly (2001) defines the middle class as those lying between the 20th and 80th percentile, but given that the daily consumption of the 20th percentile in the Rwanda data amounted to only US\$1.5 in 2011, and these households cannot be considered as middle class.

The average consumption of the middle class in Kigali has grown substantially over the past decade, from US\$4.2 per adult equivalent per day in 2001 to 5.1 in 2011 (in 2011 PPP prices). The consumption of the poor, and especially the rich, has grown even faster, resulting in a lower consumption share for the middle class. The share of consumption accounted for by the richest 10 percent of households in Kigali, has increased from 43 percent in 2001 to 45 percent in 2011. This explains the increase in the Kigali Gini coefficient between 2001 and 2011, given that the Gini is particularly sensitive to changes in the middle of the distribution. Consequently, the consumption ratios of both the very poor and the very rich relative to the middle have increased: Consumption of the bottom 10 percent was 0.26 times that of the middle in 2001 and increased to 0.3 in 2011. Similarly, consumption of the top 10 percent was 3.7 times that of the middle in 2001 and increased to 4.3 in 2011.

Source: World Bank staff.

¹⁶In order to calculate the Atkinson index, the inequality aversion parameter was set at 2.

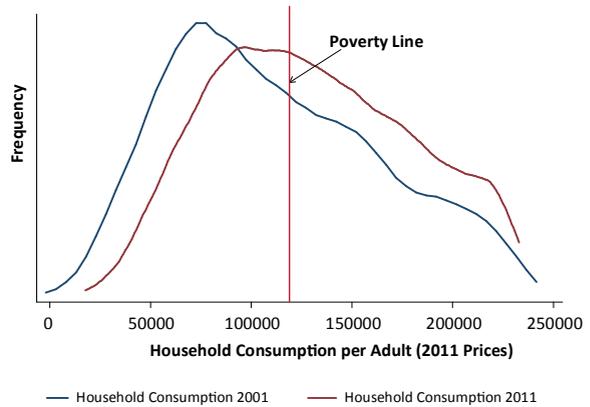
growth in consumption. Of the 14 percentage point reduction in poverty, 98.7 percent can be explained by growth in mean consumption expenditures, and 1.3 percent by redistribution in favor of the poor (the decrease in inequality). In Kigali the increase in inequality held back poverty reduction: While poverty fell by six percentage points in Kigali, it would have fallen by 7.8 percentage points if inequality had not changed.

2.2.4. Poverty Still High, Though Depth and Severity are Decreasing

Despite the large reduction in poverty over the past ten years, poverty remains pervasive. 45 percent of Rwandans still live below the poverty line and 24 percent cannot meet their most basic food needs. The poor are however on the move. Average consumption of the poor increased by 15 percent between 2001 and 2011, bringing the poor closer to the poverty line (Figure 49). In 2001, the median distance from the poverty line amounted to 41 percent (of the poverty line's value), indicating that the poor were on average still located far from the poverty line. In 2011, the median distance had decreased to 30 percent.

Given that the poor are now clustered closer to the poverty line, there is scope for rapid poverty reduction in the coming years, if

Figure 49: The Poor Have Moved Closer the Poverty Line between 2001 and 2011
(Kernel Density Estimation of Household Consumption, 2000 and 2011)



Source: EICV1 and EICV3.

growth is sustained. In 2011, 15 percent of the poor were located within 10 percent of the poverty line, compared to 9 percent in 2001. These people need only a small push to be able to move out of poverty. Similarly, the fraction of poor located within 20 percent of the poverty line increased from 20 percent in 2001 to 30 percent in 2011. Equally important, the fraction of poor located more than 50 percent away from the poverty line has fallen from 38 percent in 2001 to 22 percent in 2011. All of this means that poverty, although still pervasive, is becoming less deep and severe, and that prospects for further poverty reduction look promising.

2.3. Different Patterns in Both Parts of the Decade

The strong reduction in poverty over the past decade can largely be attributed to the performance during the last five years. In the first half of the previous decade, household consumption grew at two percent per year, but this growth did not translate into significant poverty reduction. However, between 2006 and 2011, consumption growth of three percent per year translated into a reduction in poverty by 12 percentage points. The difference between the two sub-periods can be explained by changes in the patterns of growth, between and within rural and urban areas. First, while growth in the first half of the decade was concentrated in Kigali, where only a marginal fraction of Rwanda's poor live, growth in the last five years was largely concentrated in rural areas. Second, while growth was pro-rich in the first half of the decade, holding back poverty reduction and increasing inequality, growth in the second half of the decade disproportionately benefited the poor. This led to a substantial decrease in inequality which provided an extra boost to poverty reduction. The absolute number of people living in poverty decreased by over half a million, during the second half of the decade.

The graphs in the preceding sections suggest a different pattern of growth and inequality in the first and in the second half of the decade.

Figure 46 and Figure 47 show that consumption shares of the poorest households decreased between 2001 and 2006, while the shares of the wealthiest households increased, resulting in a rise in inequality (Figure 48). However, between 2006 and 2011, the consumption share of the wealthiest fell back to below the 2001 level, while the share of the poorest quintile rose quite substantially (by 15 percent) to end the decade, higher than where it started.

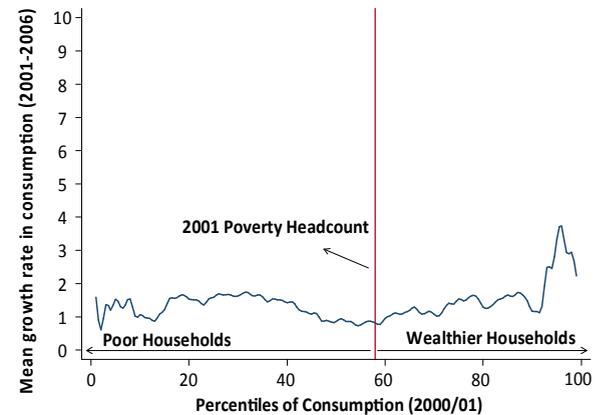
Figure 50 and Figure 51 confirm that the patterns of growth differed substantially between the first and second halves of the previous decade. Between 2001 and 2006, consumption growth was higher for the non-poor, than for the poor households (Figure 50). The richest households grew particularly fast during this period. The growth pattern in the second half of the decade is almost the exact mirror-image: Growth was higher for poor households than for non-poor households and was particularly strong for the extremely poor: Average growth per annum for the poorest 20 percent of households amounted to 6.2 percent between 2006 and 2011 (Figure 51). In this subsection the different patterns in both sub-periods are explored.

2.3.1. 2001-2006: Weak Poverty Reduction despite Growth

Between 2001 and 2006 consumption expenditures per adult equivalent grew at a respectable rate of 2 percent per annum. However, poverty headcount dropped by only two percentage points (from 58.9 percent to 56.9 percent). Growth and poverty reduction were stronger in Kigali than in the rest of the country (Annex Table 2). Consumption grew at an annual rate of 3.1 percent in Kigali, compared to 2.2 percent in the rest of the country. In relative terms, poverty reduction was twice as strong in Kigali (reduction of 8.4 percent) than in the other areas (reduction of 4.4 percent).

Figure 50: The Non-Poor Grew Faster than the Poor between 2001 and 2006...

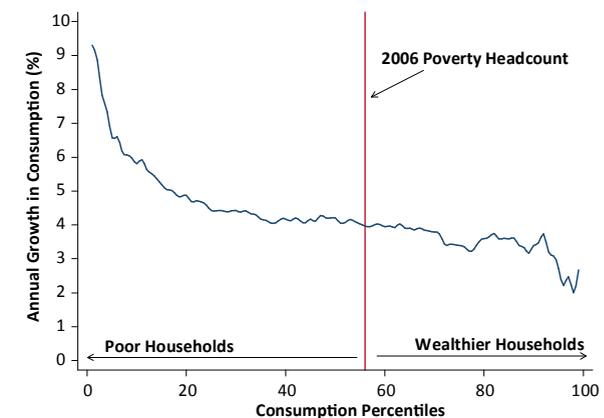
(Growth-Incidence Curve for Rwanda, 2001-2006)



Source: EICV1 and EICV2.

Figure 51: While the Poor Grew Faster than the Non-Poor between 2006 and 2011

(Growth-Incidence Curve for Rwanda, 2006-2011)



Source: EICV1 and EICV2.

Household consumption growth between 2001 and 2006 was pro-rich. The growth-incidence curve (Figure 50) shows that the average growth rates were higher for the non-poor (to the right of the vertical line) than for the poor, resulting in an increase in inequality. The increase in inequality negatively affected poverty reduction: Poverty would have decreased by 5.3 percentage points instead of the 2 percentage points—actually observed—if inequality had not changed. The pattern of growth in this period was different in Kigali than in the rural areas: While growth in Kigali was pro-poor, growth in the rural areas disproportionately benefited the wealthier households (Annex Figure 3).

Taken together, the disappointing performance in terms of poverty reduction in the first half of the decade was related to the urban-rural difference in both the magnitude and the distribution of growth. Growth in Kigali was strong and pro-poor but only benefited a marginal fraction of the poor (in 2001 Kigali accounted for only 3.9 percent of the national poor). Outside Kigali, where over 96 percent of the poor lived, growth was slow and pro-rich. The net result was weak poverty reduction, despite moderate consumption growth.

Despite the marginal reduction in poverty headcount between 2001 and 2006, the living standards of the poor increased, albeit slightly. Average consumption of the poor increased by slightly more than 6 percent, during the first half of the decade. The main effect of growth between 2001 and 2006 is that it brought poor households closer to the poverty line, paving the way for the strong poverty reduction in the subsequent five years. As shown in Figure 52, the distribution of consumption for the poor clearly shifted towards the poverty line between 2001 (blue curve in Figure 52) and 2006 (red curve).

2.3.2. 2006-2011: Strong Growth, Decreasing Inequality and Impressive Poverty Reduction

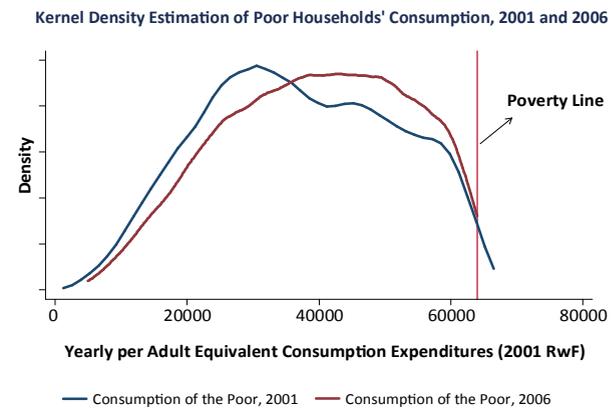
Between 2006 and 2011 consumption grew at a rate of 3 percent per annum, compared to 2 percent in the previous five years. During the same period poverty decreased at an annual rate of 4.6 percent, resulting in an impressive 12 percentage point drop in poverty headcount. In contrast to the first half of the decade, consumption growth between 2006 and 2011 was higher in areas outside Kigali (3.1 percent per annum) than in Kigali (1.9 percent per annum; Annex Table 3).

Consumption growth between 2006 and 2011 was pro-poor. The growth-incidence curve in Figure 51 is downward-sloping, with higher average growth rates for the poor. The decrease in inequality during the second half of the decade, gave an

extra boost to poverty reduction. Consumption growth alone accounted for 8.5 percentage points (71 percent) of the 12 percentage point reduction in poverty, while the decrease in inequality added another 3.5 percentage points (29 percent).

The extent to which poverty responded to growth in consumption was radically different in the first than in the second half of the decade. Between 2001 and 2006 a 10 percent increase in consumption was associated with a three

Figure 52: The Consumption of the Poor Moved closer to the Poverty Line Between 2001 and 2006
(Kernel density Estimation of Poor Households' Consumption, 2001 and 2006)



Source: EICV1 and EICV2.

percent decrease in poverty, translating into an exceptionally low elasticity of -0.32, lower than any elasticity listed in Table 6. However, in the second half of the decade, poverty decreased by 21 percent, following a 17 percent increase in consumption. The resulting elasticity of -1.25 is almost four times higher than the one in the first half of the decade.

In sum, the different poverty performance between the first and second halves of the decade can largely be explained by differences in the magnitude and nature of growth. The first half of the decade (2001-2006) was characterized by high growth in Kigali and low pro-rich growth in the rest of the country, leading to an increase in inequality and modest poverty reduction. The second half of the decade (2006-

2011) experienced higher overall growth, mainly concentrated in rural areas, and recorded an exceptionally strong growth rate for the poor, in particular, the extremely poor. The net result is a decade of strong growth and poverty reduction, during which welfare gains were realized at each point in the distribution and were relatively higher for the poor.

It is worth mentioning that the two sub-periods largely coincide with Rwanda's two latest poverty reduction strategies. The first Poverty Reduction Strategy (PRSP I) was implemented from 2002 to 2005 and focused largely on the transitional period of rehabilitation and reconstruction, which may explain the higher growth rate in Kigali during this period. Though progress had been made during

PRSP I, assessments showed that productive sectors, in particular agriculture, infrastructure and the private sector, were lagging behind in terms of performance (Republic of Rwanda, 2011). In response, the second poverty reduction strategy elaborated ambitious programmes to boost the productive sectors and reduce extreme poverty. This stronger focus on extreme poverty and on the rural areas is reflected in the second-period data, when growth was higher outside Kigali and benefited the extremely poor, more than it did the less poor and the non-poor. Although the data does not allow attribution, it appears that the second poverty reduction strategy paid off in terms of poverty reduction and raising the living standards of the extremely poor.

2.4. The Drivers of Consumption Growth and Poverty Reduction

The growth in household consumption was associated with rapid changes in factors that are typically associated with improvements in living standards. Increased agricultural production and the move from a traditional production mode to a more market-oriented model, emerge as the main driver of the growth in consumption of Rwandan households, explaining almost half of the reduction in poverty over the past decade. At the same time, Rwandan households have diversified their income portfolios and reduced risk, by increasingly taking up self- and wage-employment in the non-farm sector next to agriculture. Increased self-employment in small non-farm businesses has been the second main driver of consumption growth in Rwanda as a whole, while the move to wage employment emerges as the single most important driver of consumption growth in Kigali. The rapid fall in fertility rates in recent years has changed the demographic composition of Rwandan households, and has lowered the child dependency ratio, which has been associated with increased disposable income both in Kigali and in rural areas. The demographic developments suggest that Rwanda is amidst the demographic transition, and could reap a demographic dividend if sufficient jobs can be created in the coming decade.

Which factors have been associated with the improvements in household welfare?

The last decade has witnessed rapid changes in the economic and socio-demographic structure of the Rwandan economy. This section explores potential drivers of growth in household welfare between 2001 and 2011 using comparable household survey data from the EICV1 (2001)

and EICV3 (2011) surveys. Focus is made on three main factors: the boost in agricultural production and the increased market-orientation of agriculture; the changing structure of the labor market and households' activity portfolios; and, the demographic changes spurred by rapidly falling fertility rates.

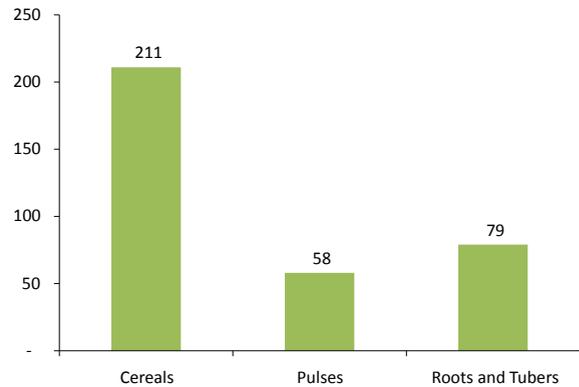
2.4.1. Key Evolutions during the Previous Decade

Increased Agricultural Production and Commercialization

Agriculture is the backbone of the Rwandan economy. Although the share of agriculture in GDP has fallen from 45 percent in 2001 to 34 percent in 2011, it remains the main occupation for over 70 percent of working Rwandans. Of the 1.4 million new people working in Rwanda between 2001 and 2011, the largest increase in new jobs is in agriculture (430,000). In terms of income, agriculture accounts for almost half of aggregate household income, and much more for poor households. The proportion of Rwandan households cultivating at least one plot of land has remained stable throughout the previous decade, at 90 percent.

Increasing agricultural productivity and transforming agriculture from subsistence-based to market-based was one of the priorities for both the first PRSP and the EDPRS. Driven by increased public and donor-funded investments in agriculture, especially on the flagship programs such as the Crop Intensification Program (CIP) and the Land Husbandry, and Water Harvesting and Hillside Irrigation (LWH) project, aggregate production increased starkly over the previous decade (Figure 53). Production of cereals more than tripled between 2000 and 2010, while production of pulses and roots increased by 58 percent and 79 percent respectively. This is also reflected in the household data (Table 9): the average value of agricultural production

Figure 53: Production of Cereals, Pulses and Roots and Tubers Increased Substantially over the Past Decade
(Percentage Increase in Production Quantity, 2001 to 2011)



Source: FAOSTAT, 2013.

more than doubled in real terms between 2001 (Rwf105,000 per household) and 2011 (Rwf223,000 in 2011 prices)¹⁷. The percentage of farmers who reported having purchased fertilizers also increased sharply, from 7 percent in 2001 to 30 percent in 2011. Since agriculture is the single most important income source for poor households, the increase in agricultural production is believed to have substantially contributed to consumption growth and poverty reduction. At the same time, commercialization of agriculture by households—defined as the share of harvest sold in the market—also increased: In 2011, the average household sold 21.4 percent of its total produce on the market, up from 13.4 percent in 2001.

The jump in agricultural production and productivity is a recent phenomenon. As shown in Table 8, the increase in agricultural production was a lot higher in the second half of the decade,

Table 8: The Boom in Agricultural Production Happened in the Last Five years
(Production levels of Selected Crops in 2001, 2006 and 2011)

	Production Level (tons)			Production Increase (percent)	
	2001	2006	2011	2001-06	2006-11
Cereals	285,527	365,533	857,282	28.0	134.5
Pulses	258,450	301,030	365,075	16.5	21.3
Roots/Tubers	3,077,411	2,965,499	5,783,267	-3.6	95.0

Source: FAOSTAT, 2013.

¹⁷Annex Table 4 and Annex Table 5 show the descriptive statistics by welfare group.

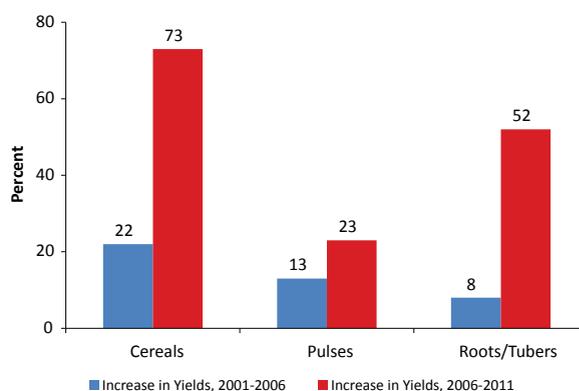
than in the first half: Aggregate production of cereals increased by 135 percent between 2006 and 2011, compared to 28 percent in the preceding five-year period. While the production of roots and tubers actually declined between 2001 and 2006, it almost doubled during the past five years. The same goes for the increase in agricultural productivity: while average yields grew timidly between 2001 and 2006, they sharply increased during the last five years (Figure 54). This likely reflects the priority laid out in Rwanda's Economic Development and Poverty Reduction Strategy (2007-2012) of raising agricultural productivity, and transforming agriculture from subsistence-based to market-based.

Diversification of Income Portfolios Marked by a Move towards Non-Farm Activities

The changing composition of households' economic activities is one of the most remarkable evolutions in Rwanda over the past

Figure 54: Agricultural Yields Increased Sharply over the Past Five Years

(Increase in Yields (Hg/Ha) between 2001 and 2006, and 2006 and 2011)



Source: FAOSTAT, 2013.

decade. While engaging in non-farm income activities was still relatively rare at the start of the previous decade (less than 30 percent of households had a non-farm activity in 2001), 70 percent of households had an activity of this kind in 2011 (Table 9). Given the strong

Table 9: Significant Changes in Household Consumption, Income Activities, and Human Capital during the Past Decade
(Means of Key Variables in 2001 and 2011 with Differences in Means and Significance Levels)

	2001 (EICV1)	2011 (EICV3)	Mean Difference
Consumption and Poverty			
Consumption Expenditures per AE (2011 Rwf)	210,043	270,921	60,878***
Poverty Headcount (%)	58.9	44.9	-14.0***
Agriculture and Livestock			
Value of Agricultural Production (2011 Rwf)	104,720	222,998	118,278***
Share of Harvest Sold	13.4	21.4	8.0***
Income Activities			
Farm Self Employment (% of households)	90.7	91.2	0.5
Farm Wage Employment (% of households)	13.7	48.8	35.1***
Non-Farm Self Employment (% of households)	15.3	41.5	26.2***
Non-Farm Wage Employment (% of households)	21.8	48.4	26.6***
Any Non-Farm Activity (% of households)	29.9	69.7	39.8***
Education and Demographics			
Household Size in Adult Equivalents	4.48	4.24	-0.24***
Dependency ratio	0.98	0.87	-0.11***
Household Head Educated (% Yes)	60.2	72.6	12.4***
Household Head Literate (% Yes)	45.0	61.4	16.4***
Proportion of Adults Educated (%)	66.6	79.1	12.5***
Proportion of Literate Adults (%)	50.0	66.6	16.6***

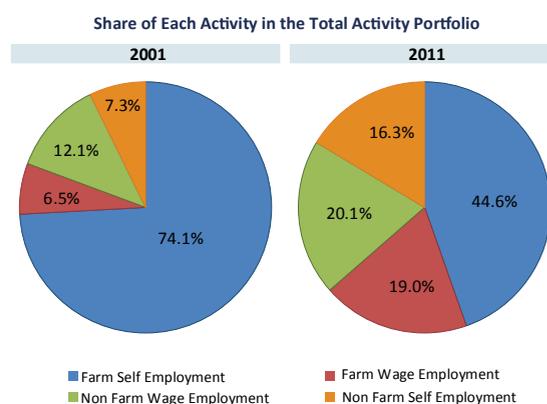
Source: EICV1 and EICV3; ***: Difference statistically significant at the 1 percent level.

correlation that is found in empirical literature between non-farm activities and household welfare, the increased engagement in non-farm economic activities seems to have contributed to the observed consumption growth. Both non-farm wage employment and non-farm self-employment in small businesses, substantially increased between 2001 and 2011: 48 percent of households earned income through non-agricultural wage employment in 2011, up from 22 percent in 2001. Non-farm self-employment in 2011 stood at 42 percent, compared to 15 percent in 2001 (Table 9).

A salient feature of the shift in households' activity portfolios during the past decade is that households did not abandon one income activity to take on another, but rather diversified and took up more income activities (both as main and secondary occupations)¹⁸. The average number of income activities increased from 1.4 per household in 2001 to 2.3 per household in 2011. As shown in Figure 55, the share of non-farm activities in the total portfolio was higher in 2011 (36.4 percent) than in 2001 (19.4 percent)¹⁹. In other words, the increase in the number of income sources can mainly be explained by households' diversification into non-farm activities.

Regardless of whether or not it contributed to growth and poverty reduction, the observed diversification is a positive evolution. By taking up additional activities in the non-farm sector, rural households have diminished the risk inherent to engaging in rain fed agriculture. In 2001, 74 percent of rural households were fully dependent on agriculture to generate income. In 2011, this had dropped to 33 percent. Thus, suggesting that rural households have lowered their income risk, and are now better equipped to deal with adverse agricultural circumstances, than they were ten years ago.

Figure 55: Non-Farm Activities Gained Importance in the Activity Portfolio
(Share of Each Activity in Total Activity Portfolio)



Source: EICV1 and EICV3.

Falling Fertility, Smaller Households and an Upcoming Demographic Transition

With a population density of 416 persons per squared kilometer, Rwanda is one of the world's most densely populated countries. The total fertility rate hardly changed between the early 1990s and the mid-2000s, resulting in high population growth²⁰. However, since 2005 total fertility rates started dropping significantly, from 6.1 in 2005 to 5.5 in 2007/08 and 4.6 in 2010 (Box 13). The lower fertility rates translated into smaller household sizes: Average household size dropped from 5 in 2001 to 4.7 in 2011. The lower fertility rates also reduced the child dependency ratio, the number of economically dependent children (under 15) for each adult (between 15 and 64) in the household: While in 2001 there was on average of one child for each adult, this had dropped to 0.87 in 2011 (Table 9).

The recent demographic developments suggest that Rwanda is amidst the demographic transition. This bodes well for Rwanda's future economic growth. During any demographic transition, there is a particular moment when there is an exceptional bulge of working-age

¹⁸We consider four broad income activities: Farm self-employment, farm wage employment, non-farm self-employment and non-farm wage employment.

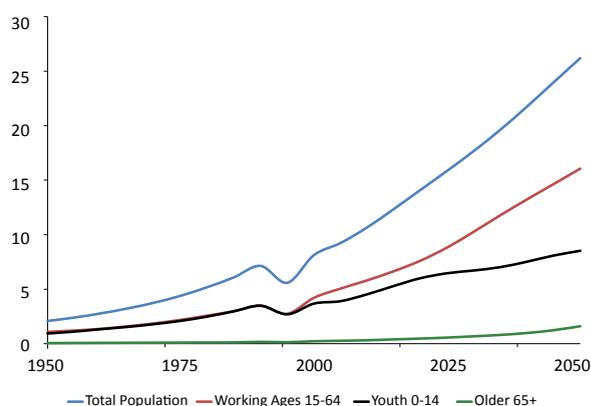
¹⁹This share is calculated as the number of non-farm activities of the household divided by the total number of income activities.

²⁰The total fertility rate is defined as the average number of children a hypothetical cohort of women could be expected to have at the end of the reproductive period.

adults. Because fertility is falling, there are relatively few children. And since life expectancy is still relatively low (55 years in Rwanda), there are relatively few elders to take care of. The result is a bulge in working-age adults, and a dramatic decline in the dependency ratio, what is called the “demographic dividend”²¹.

The bulge in working-age adults in Rwanda is approaching (Figure 56). Working-age population is set to grow by 2 million by 2022, hence, increasing its share in total population to almost 60 percent (up from 54 percent currently). And the transition is projected to accelerate after 2025, when working age

Figure 56: Rwanda is Entering the Demographic Transition
(Share of Each Population Subgroup in Total Population, 1950-2050)



Source: UN Population Prospects.

Box 13

Multiplied a Lot Less

Determinants of Fertility are Moving in the Right Direction

Total fertility rates have been dropping fast over the last ten years, from 5.8 in 2000 to 4.6 in 2010. In line with the overall reduction in poverty, the drop in fertility can be attributed to the last five years: While fertility marginally increased between 2000 (5.8) and 2005 (6.1), it dropped by 1.5 between 2005 and 2010, one of the largest drops in the history of the dhs surveys.

To what extent is the drop in fertility underpinned by evolutions in fertility determinants? The answer is: “to a large extent.” Table 10 shows that all fertility determinants have moved in the right direction between 2000 and 2010. The median level of education of women between 15 and 49 years of age has doubled (from a low base), and female literacy rates have increased by ten percentage points. The fraction of women using modern contraception has shot up from a mere three percent in 2000, to 25 percent in 2010, leading to a drop in unmet needs for family planning from 36 percent in 2000 to 21 percent in 2010. Given the importance of the institution of marriage in determining fertility in Rwanda, the increased age at first marriage and age at first birth have likely contributed to the drop in fertility. Finally, the large drop in the ideal number of children wished by women: while in 2000 the average woman in Rwanda wished to have five children, the number dropped to three in 2010.

Table 10: Changes in Women's Education and Behaviors are Driving Down Fertility

(Determinants of Fertility in Rwanda, 2000 and 2010)

	2000	2010
Total Fertility Rate	5.8	4.6
Number of years of Education of Women (Median)	1.1	2.3
Female Literacy (%)	66.1	76.9
Ever Used Modern Contraception (%)	16.8	28.5
Currently Using Modern Contraception (%)	3.4	25.2
Never Married (%)	34.1	38.7
Age at First Marriage (Median)	20.7	21.4
Age at First Birth (Median)	22	22.9
Women with Unmet Need for Family Planning (%)	36.4	20.8
Ideal Number of Children (Mean)	4.9	3.3

Source: DHS, 2000-2010.

Source: World Bank staff.

²¹Bloom et al. (2003).

population will grow much faster than both the youth (younger than 15-years of age) and the elderly. This demographic phenomenon has the potential to boost output, if the increase in working-age population can be accommodated with productive employment.

To summarize, the last decade has witnessed significant changes in a number of key economic and demographic variables, as shown in Table 9. The increase in household consumption was accompanied by rising levels of agricultural production and commercialization at the household level and the diversification of income portfolios. Average household size diminished due to falling fertility, resulting in lower child dependency ratios. The next section will explore how these evolutions have been related to the observed growth in welfare and poverty reduction.

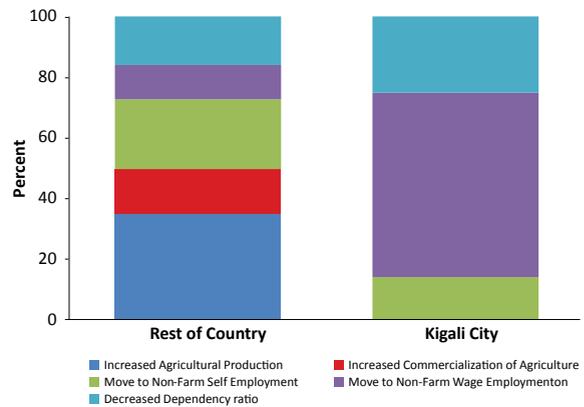
2.4.2. What Explains the Growth in Household Consumption in Rwanda?

To examine to what extent the factors mentioned above were associated with growth in household consumption, a statistical decomposition method will be used. The method is detailed in Annex 10. In simple terms, the method examines how much of the observed increase in consumption can be explained by the observed changes in underlying factors (such as the increase in agricultural production, and the move to non-farm activities). In this way, the contribution of each factor to growth in consumption can be quantified. These decompositions will be performed at three points of the distribution, representing three different welfare categories: The poorest households (bottom 25 percent), the median or average households (middle of the distribution), and the better-off households (the 75th percentile of the distribution). Given the different structure of economic activities in Kigali than in the rest of the country, separate decompositions for the two regions will be carried out.

Figure 57 summarizes the main results of the decompositions. For the areas outside of Kigali, which are predominantly rural, the increase in agricultural production emerges as the main driver of growth, followed by diversification into small-scale self-employment in non-farm activities. In Kigali itself, the bulk of consumption growth can be explained by the move to non-farm wage employment. Figure 57 can be interpreted in relative terms, as it has been rescaled for ease of representation. In the remainder of this section, the contribution of each factor to growth in consumption will be elaborated.

Figure 57: Agriculture is the main driver of consumption growth in rural areas; in Kigali it is the move to wage employment

(Contribution of Selected Factors to growth in Median Consumption between 2001 and 2011)



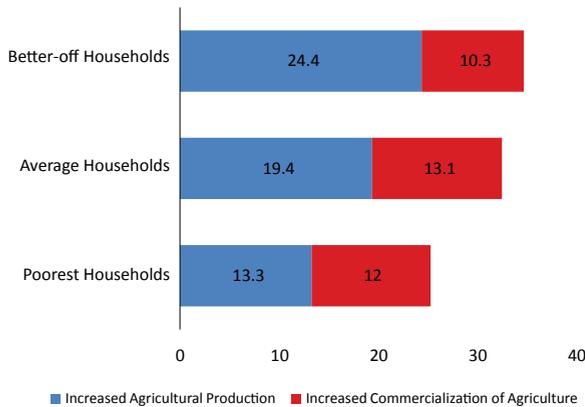
Source: DHS, 2000 2010, EICV1, EICV2, EICV3.

Agriculture is the Main Driver of Rural Consumption Growth

The increase in agricultural production over the past decade emerges as the main driver of consumption growth, for both poor and wealthier households. Increased production explains over 19 percent of growth in median consumption for rural households in Rwanda (Figure 58). The increased commercialization of agriculture (the increased shares of harvests sold on the market) explains another 13 percent of rural consumption growth. Taken together, agricultural developments accounted for one third of growth in consumption of rural households between 2001 and 2011.



Figure 58: The Growth in the Agriculture Sector has Significantly Contributed to the Rise in Consumption in Both Poor and Richer Households
(Contribution of Growth in Agriculture to Growth in Consumption of Rural Households, percent)



Source: EICV1 and EICV3 and World Bank Calculations.

The increase in agricultural production has been more important for the wealthier households. While increased agricultural production accounts for 13 percent of consumption growth of the poorest households, it explains almost one quarter of consumption growth for the better-off households (Figure 58). This suggests that households with larger landholdings (wealthier households) have benefited the most from the boost in agricultural production. Increased commercialization of agriculture follows the opposite pattern, with a higher contribution to growth of poor households (12 percent) than of better-off households (10 percent).

Diversification into Non-Farm Activities Boosted Growth for both Rural and Urban Households

The diversification of income portfolios has been an important driver of growth, both in rural areas and in Kigali. The increased self-employment in small non-farm business activities (so-called household enterprises), has been particularly important for households outside Kigali, and emerges as the second main driver of growth (Figure 59). The move to non-farm self-employment accounted for 15 percent of the growth in consumption of rural households (compared to 19 percent of increased agricultural production). In contrast, the move towards wage employment has been the single most important

Figure 59: Diversification into Non-farm Self-Employment has Been More Important than Wage Employment, Especially for the Rural Poor
(Contribution of Growth in Non-farm Activities to Growth in Consumption of Rural Households, percent)

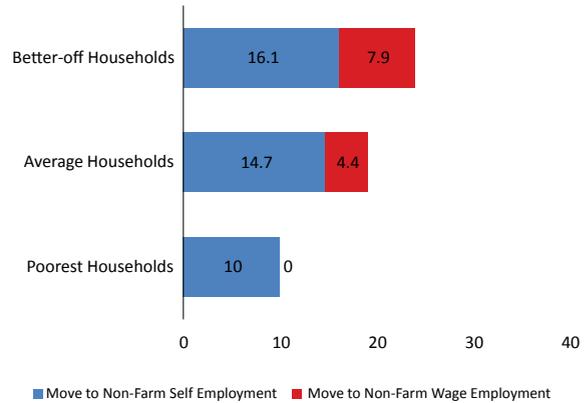
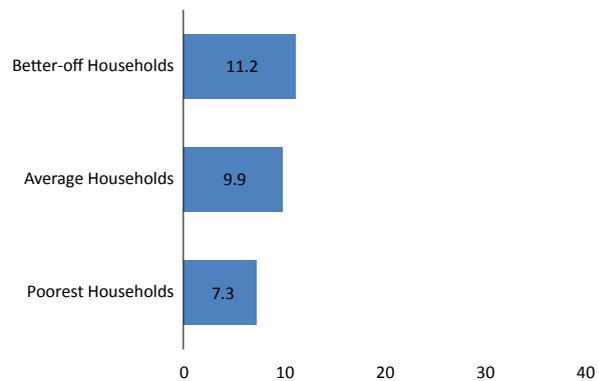


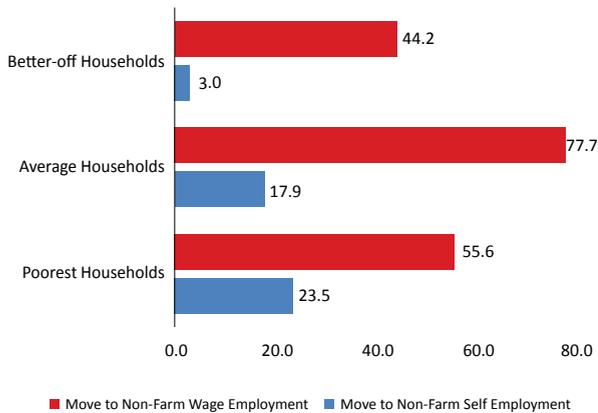
Figure 60: Decreased Dependency Ratios Spurred by Falling Fertility Rates also Contributed Significantly to Consumption growth
(Contribution of Falling fertility Rates to Growth in Consumption of Rural Households, percent)



factor in Kigali, explaining up to 78 percent of household consumption growth (Figure 61).

In rural areas, the move to non-farm wage employment has not increased consumption of poor households. While increased non-farm wage employment was associated with growth in consumption of better-off households, and to a lesser extent, average households, it has not contributed to consumption growth of the poor (Figure 59). Although poor rural households did increasingly take up wage employment in the non-farm sector, this has not been correlated with growth in consumption. The move to non-farm activities has been more important for the

Figure 61: Increased Engagement in Wage Employment has been the Main Driver of Consumption Growth in Kigali...
(Contribution of Growth in Non-Farm Activities to Growth in Consumption in Kigali, percent)

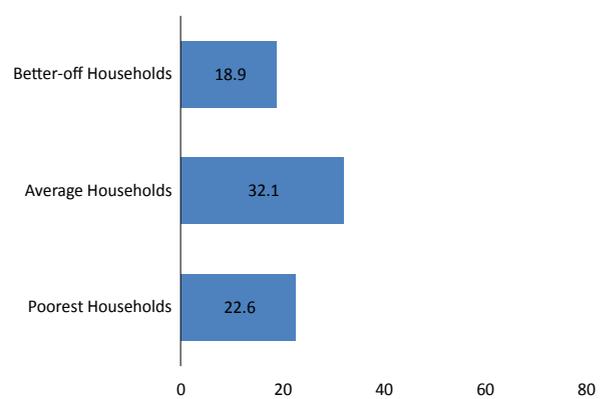


Source: EICV1 and EICV3 and World Bank Calculations.

better-off than for the poor. Taken together, close to one quarter of the growth in consumption of better-off rural households can be accounted for, by the move to non-farm activities (both self- and wage-employment), compared to only one-tenth for the poorest households (Figure 59).

Barriers to entry to good wage jobs, explain why the rural poor did not benefit from increased wage employment in the non-farm sector. Access to good quality wage employment typically requires a certain level of formal skills and education, which the poor usually lack. For instance, only 2.8 percent of adults (15 years and older) in poor rural households have used a computer, compared to 12.6 percent for the non-poor and 30 percent of adults in the richest 10 percent of rural households. Similarly, adults in non-poor rural households attained on average of two grades in education, more than their poorer counterparts. This means that low-skilled adults from poor rural households appear to be condemned to casual and low-paid wage employment (Box 14). The move to non-agricultural self-employment, where barriers of entry are lower, has therefore provided a more lucrative opportunity for the bulk of rural households. Entry barriers to wage jobs are less of a concern in Kigali, where the poor have on average completed primary school.

Figure 62: ...While the Falling fertility Rates and Dependency Ratios Have Given an Extra Boost to Consumption
(Contribution of Falling fertility Rates to Growth in Consumption in Kigali, percent)



Decreased Child Dependency Ratios Associated with Consumption Growth across the Board

The decrease in child dependency ratio was associated with consumption growth in both in Kigali and in the rest of the country. In rural areas, dependency ratios have been falling, more for the non-poor than for the poorer households. The average child dependency ratio in poor households only declined marginally, from 1.14 percent in 2001 to 1.10 percent in 2011 (drop of 3.5 percent), while in non-poor households it declined by 10 percent (from 0.8 percent in 2001 to 0.72 percent in 2011). This explains the relatively higher contribution of decreased dependency ratios to growth in consumption—for betteroff households: decreased dependency ratios explain 11 percent of growth for the better-off households, compared to seven percent for the poorest households (Figure 60).

The child dependency ratio in Kigali fell from 0.81 percent in 2001 to 0.68 percent in 2011. This accounted for 32 percent of growth in consumption of the average household (Figure 62). In Kigali, a significant negative correlation between dependency ratios and wage employment is established: the move to wage employment in Kigali seems to have been accompanied by falling fertility. Although this

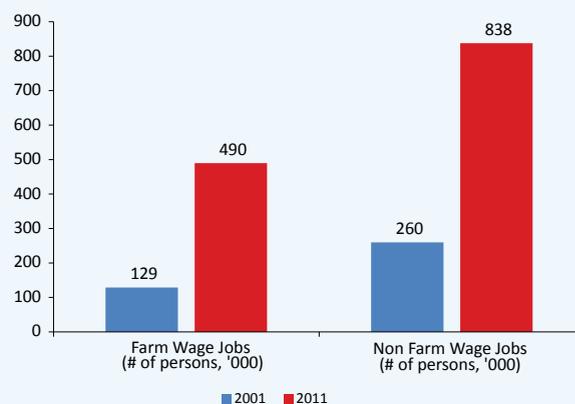
Box 14 A Hard Day's Work Multiplying a Lot Less Wage Employment Has Not paid Off for the Poor

The creation of jobs was one of the Government's priorities under the 2008-2012 EDPRS. Between 2001 and 2011, wage employment grew by 13 percent per annum, resulting in the creation of an estimated 939,000 wage jobs (Republic of Rwanda, 2012). 578,000 of the new jobs were in the non-farm sector, while the remaining 361,000 were created in the farm sector (Figure 63).

Poor rural households have increasingly taken up non-farm wage employment between 2001 (14 percent of poor households) and 2011 (43 percent of poor households), but this has not been associated with higher consumption growth (Figure 60). Poor rural households have also increasingly taken up agricultural wage employment on other people's farms, from 17 percent in 2001 to 69 percent in 2011. If we take the move to farm wage employment—a particularly unstable and low-paid activity—into account, the net effect of wage employment has been largely negative for the rural poor, holding back consumption growth for all but the richest rural households.

Figure 63: A Substantial Number of Wage Jobs Were Created between 2001 and 2011

(Number of Farm and Non-farm Wage Jobs, 2001 and 2011, thousands)



Source: Republic of Rwanda, 2011.

Source: World Bank staff.

is consistent with economic theory, it cannot establish causality with the data at hand (that is: did fertility decline because there were more people in wage employment? Or, Did people take up wage employment because fertility declined, and there were fewer children to take care of?).

Further decreases in the dependency ratio have the potential to boost consumption growth and poverty reduction in the coming decades. As illustrated in Figure 56, working-age population in Rwanda is projected to grow faster than the economically dependent population, which means that dependency ratios are expected to progressively decrease over the coming years. The decomposition results suggest that this will be associated with further improvements in household living standards.

What Does This Mean in Terms of Poverty Reduction?

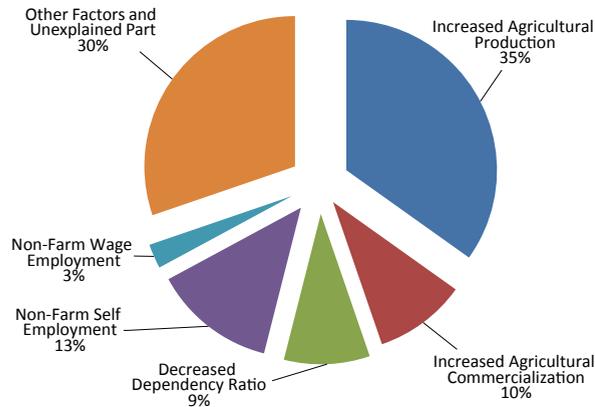
The preceding analyses focus on the contribution of several key factors to growth

in household consumption. What has been the contribution of these factors to the observed reduction in poverty? As mentioned in Annex Table 3, poverty headcount decreased by 14 percentage points, from 59 percent in 2001 to 45 percent in 2011. To what extent was this drop associated with key evolutions highlighted in this report?

Almost half (45 percent) of Rwanda's reduction in poverty between 2001 and 2011 can be accounted for by developments in agriculture (Figure 64). Increased agricultural production accounted for 35 percent of the overall drop in poverty while increased agricultural commercialization added another 10 percent. Taken together, these two factors explain more than six percentage points of the 14 percentage point drop in poverty over the previous decade.

In line with the findings presented earlier, the move towards non-farm self-employment has been far more important for poverty reduction than the move towards wage employment. While increased self-employment in small non-

Figure 64: Agriculture Accounted for the Bulk of National Poverty Reduction
(Contribution of the Various Factors to Poverty Reduction between 2001 and 2011, percent)



Source: EICV1 and EICV3 and World Bank calculations.

agricultural businesses explains 13 percent of poverty reduction, wage employment accounts for a mere four percent. The low contribution of wage employment to poverty reduction at the national level, masks the fact that wage employment was the main driver of poverty reduction in Kigali. However, in rural areas where the bulk of Rwanda's population lives, increased take-up of wage employment in the non-farm sector has not been associated with significant poverty reduction.

Finally, falling fertility rates and the associated decrease in dependency ratios, have given an extra impetus to poverty reduction. About 9

percent of the decrease in poverty between 2001 and 2011 can be explained by the changing demographic composition of households in Rwanda. This is twice as large as the impact from increased wage employment. The trend to lower dependency ratios is projected to continue, which has the potential to boost poverty reduction in Rwanda, in the years and decades to come.

To summarize, three key evolutions over the past decade explain a substantial part of the household consumption growth and poverty reduction between 2001 and 2011. Agriculture has been the main driver of consumption growth and poverty reduction for rural households in Rwanda. Since 90 percent of Rwanda's population and 97 percent of Rwanda's poor live outside Kigali, agriculture has also been the key driver of growth and poverty reduction at the national level. Diversification characterized by the move into non-farm activities has also been associated with consumption growth both in rural areas and in Kigali. While the move to non-farm self-employment has been particularly important for growth and poverty reduction in rural areas, wage employment emerges as the single main driver of consumption growth for households in Kigali. Finally, decreasing child dependency ratios spurred by rapidly falling fertility rates have boosted consumption growth across the distribution, both in Kigali and the rural areas.

2.5. Poverty Reduction in Rwanda: The Way Forward

The key findings of this special focus provides a number of clues for future poverty reduction in Rwanda. Over the past ten years the poor have moved closer to the poverty line, which means that there is scope for rapid poverty reduction in the years to come. Given that majority of Rwanda's poor live in rural areas and still depend on agriculture (both self and wage)—for the bulk of their livelihood—further improvements in agriculture will likely be the main engine of poverty reduction over the medium term. In light of this, it is

important for the government to maintain its strong investment in agriculture, including the facilitation of market linkages, building rural infrastructure and enhancing agricultural skills necessary to raise productivity on small landholdings and make the transition to higher-value crops which require greater know-how. This should be accompanied by the promotion of small-scale business activities in the agro-processing and post-harvest storage sectors, which have the potential to thrive on increased agricultural production.

Agriculture will however not be able to absorb the rapidly growing labor force. In the coming decade 200,000 new working-age adults are expected to join the labor force each year. Given the scarcity of farmland in Rwanda, independent farming, for long the traditional occupation in rural Rwanda, will no longer be a viable option for many of them. And given the relatively low skills and education of the labor force, a bulk of the newcomers will not qualify for modern wage employment in the formal economy. This implies that most of the growing labor force will try to make a living in the informal sector, both in wage-and-self-employment. This is already reflected in the most recent household data, which shows an increasing engagement in agricultural wage labor and self-employment in small micro and household enterprises. Investing more in apprenticeships and quality vocational training could provide youth with a way out of unattractive farm wage employment, and a pathway to enter the more lucrative and productive non-farm sector.

As more and more young Rwandans leave the family farm, the role of the informal sector in providing employment will likely continue to grow. Currently, there are 1.27 million household enterprises in Rwanda, providing employment to an even larger number of people, compared to less than 300,000 wage jobs in the formal private sector. Although Rwanda has made great strides in improving the regulatory and business climate for the formal enterprises, the same has not happened

for the informal enterprises. Improving the business climate for small informal enterprises and enabling them to access financial services, will be important for future job creation and poverty reduction. This is especially important in light of the sharp increase in young people working as laborers on other people's farm, a notoriously unstable and low-paying activity. In the absence of alternatives, a non-negligible part of Rwanda's rural youth risks getting "stuck" in low-paid unstable agricultural wage employment. A buoyant informal sector could provide a more attractive alternative, and could in the long-run increase domestic revenues, if some of the informal firms grow and enter the formal sector.

Given the onset of the demographic transition and the upcoming bulge in working-age adults, the future of growth and poverty reduction in Rwanda can be summarized in two words: Agriculture and Jobs. Rwanda's population is expected to hit 13 million by 2020, which means that increases in agricultural production and productivity will be needed to feed the population and minimize food imports. As more young Rwandans will leave agriculture and increases in agricultural productivity will shed off farm labor, the bulge in working-age adults will be concentrated in the informal non-farm sector. Stimulating this sector and attracting foreign investment in the formal private sector will be crucial in creating sufficient good jobs to capitalize on the upcoming population trends, and reap the demographic dividend.



ANNEXES



Annex 1: Rwanda - Selected Economic Indicators

	2008	2009	2010	2011	2012
GDP Growth Rate (%)	11.2	6.2	7.2	8.2	8.0
Agriculture	6.4	7.7	5.0	4.7	3.0
Industry	15.0	1.3	8.4	17.6	7.2
Services	13.8	6.2	9.0	8.9	12.2
Fiscal Framework (% of GDP)^{1,2}					
Total revenues	26.5	22.9	25.6	24.8	25.7
Domestic revenues	14.8	13.5	12.5	13.9	14.5
Tax revenues	12.8	12.8	12.0	13.3	13.6
Non-tax revenues	2.0	0.7	0.5	0.6	0.9
Grants	11.7	9.4	13.1	10.9	11.2
Budgetary Grants	7.2	7.2	9.0	6.2	6.5
Capital Grants	4.5	2.2	4.0	4.7	4.7
Total Expenditures & net lending	25.2	24.5	25.7	28.3	26.9
Recurrent Expenditure	14.3	14.4	14.7	15.1	15.0
Capital expenditure	10.4	9.4	10.1	12.6	11.8
Net lending	0.5	0.7	0.9	0.5	0.0
Budget deficit (incl, grants)					
Excluding grants	-10.3	-12.8	-12.5	-12.5	-12.6
Including grants	-0.3	-3.7	-3.2	-3.2	-1.4
External account (% of GDP)					
Exports (fob)	5.7	4.5	5.3	7.3	8.6
Imports (fob)	18.7	19.0	19.3	24.7	27.5
Balance of Trade	-13.0	-14.6	-14.0	-17.3	-18.9
Services & Incomes, net	-2.9	-4.2	-5.2	-3.8	-2.2
Transfers, net	11.0	11.4	13.3	13.9	10.5
o/w Official	9.5	9.9	11.7	11.8	7.8
Current Account Balance	-4.9	-7.3	-5.9	-7.3	-10.6
Financial and Capital Account	6.7	10.0	7.9	11.1	7.7
Overall Balance	1.4	2.8	1.3	3.7	-3.1
Gross Reserves (Million US\$)	596.4	744.3	813.3	1,050.0	848.1
Gross Reserves (months of im-ports of GS)	4.7	5.4	4.5	5.0	3.9
Inflation (%)					
End of period	22.3	5.7	0.2	8.3	3.9
Period average	14.5	2.0	2.3	5.7	6.3
Exchange rate (Rwf/US\$)					
End of period	558.9	571.2	594.45	604.1	631.4
Period average	546.9	568.3	583.3	600.3	614.3

Source: BNR, NISR, MINECOFIN and World Bank Estimates.

¹ On a fiscal-year basis (July–June). For example, the column ending in 2011 refers to FY2010/11.

² On a fiscal year basis after 2009.



Annex 2: Rwanda Gross Domestic Product

	2006	2007	2008	2009	2010	2011	2012
(Rwf billion at constant 2006 prices)							
Gross Domestic Product	1,716	1,847	2,054	2,182	2,339	2,532	2,734
Agriculture	660	677	721	776	815	853	879
Food crops	546	567	603	659	692	727	750
Export crops	25	18	23	20	22	23	21
Livestock	31	32	32	34	35	36	38
Forestry	52	54	56	57	59	60	63
Fisheries	6	6	6	7	7	7	7
Industry	236	258	296	300	326	383	411
Mining and quarrying	11	16	13	11	10	14	13
Manufacturing	117	118	124	128	140	151	147
Of which: Food	49	47	50	53	58	61	62
Beverages and tobacco	28	28	29	30	30	33	34
Textiles and clothing	8	9	9	9	9	9	9
Wood, paper and printing	6	7	8	8	9	8	9
Chemicals, rubber, plastics	7	8	8	8	8	9	10
Non metallic minerals	11	11	11	11	12	14	15
Furniture and other	7	9	10	9	13	18	8
Electricity and water	3	4	4	5	6	6	7
Construction	105	121	155	157	171	211	243
Services	720	808	920	977	1,065	1,159	1,301
Wholesale and retail trade	192	221	264	274	297	327	368
Hotels and restaurants	40	42	44	41	45	46	50
Transport, storage, communication	117	134	166	181	197	208	248
Finance, insurance	49	55	56	54	66	80	93
Real estate, business services	113	125	145	157	158	158	173
Public administration	87	92	96	103	118	136	152
Education	76	87	93	108	117	138	147
Health	23	26	29	34	39	40	44
Other personal services	23	26	27	25	27	27	27
Adjustments	100	105	117	128	134	137	144
Less: Imputed bank service charge	-24	-29	-31	-30	-35	-46	-54
Plus: VAT and other taxes on products	124	133	148	158	169	183	197

Source: NISR.

Annex 3: Rwanda - Tourism sector Data

Year	Month	Tourism Arrivals					TOTAL	Parc Visits				TOTAL
		Holiday/ Vacation	Visiting friends & relatives	Business/ conference/ official	Transit & other purpose	Business / conference/ official		VOLCANOES	AKAGERA	NYUNGWE		
2012	January	7,865	28,928	28,150	15,665	80,608	2,738	2,186	655	5,579		
	February	8,624	20,080	33,541	18,407	80,652	2,516	1,856	681	5,053		
	March	7,700	21,359	33,782	18,341	81,182	1,945	1,315	444	3,704		
	April	5,663	22,879	33,978	16,443	78,963	1,443	1,269	416	3,128		
	May	4,930	23,602	40,325	17,452	86,309	1,627	1,492	420	3,539		
	June	7,187	23,843	29,609	19,017	79,656	2,690	2,384	634	5,708		
	July	9,663	25,186	36,097	22,034	92,980	3,149	3,457	855	7,461		
	August	10,693	33,299	34,014	22,242	100,248	3,219	2,984	994	7,197		
	September	10,102	25,112	32,531	19,878	87,623	2,843	1,786	477	5,106		
	October	8,961	25,104	35,042	22,869	91,976	2,906	1,443	521	4,870		
	November	5,810	27,292	45,012	30,102	108,216	1,583	2,605	689	4,877		
	December	9,403	33,096	39,663	25,214	107,376	1,824	2,423	634	4,881		
	Total	96,601	309,780	421,744	247,664	1,075,789	28,483	25,200	7,420	61,103		
2011	January	6,775	21,843	22,282	4,443	55,343	2,100	1,724	576	4,400		
	February	5,622	17,039	36,471	9,861	68,993	2,208	1,340	556	4,104		
	March	6,386	19,788	39,795	10,783	76,752	2,114	1,732	387	4,233		
	April	5,849	18,508	35,888	11,045	71,290	1,336	1,416	528	3,280		
	May	5,488	24,671	29,334	7,852	67,345	1,311	1,431	488	3,230		
	June	5,889	26,912	19,902	13,375	66,078	2,378	1,663	690	4,731		
	July	8,559	31,862	24,551	14,626	79,598	3,079	2,826	1,253	7,158		
	August	9,298	31,205	21,172	15,393	77,068	3,055	2,836	1,386	7,277		
	September	5,169	23,514	27,529	5,164	61,376	2,623	1,323	831	4,777		
	October	5,379	26,234	45,220	15,658	92,491	2,671	2,465	601	5,737		
	November	6,250	25,531	46,243	14,611	92,635	1,787	1,277	381	3,445		
	December	10,955	27,807	47,176	13,102	99,040	2,159	2,424	597	5,180		
	Total	81,619	294,914	395,563	135,913	908,009	26,821	22,457	8,274	57,552		

2010	January	4,871	14,215	27,602	5,529	52,217	1,733	1,539	284	3,556
	February	4,561	14,769	27,405	5,407	52,142	1,634	1,175	274	3,083
	March	4,622	17,275	28,408	5,313	55,618	1,464	1,268	256	2,988
	April	5,653	15,087	22,953	5,078	48,771	1,205	924	286	2,415
	May	4,475	15,813	26,408	5,483	52,179	1,354	1,157	494	3,005
	June	4,625	17,173	31,164	8,118	61,080	1,905	1,173	429	3,507
	July	6,604	18,094	31,037	8,988	64,723	2,369	1,583	584	4,536
	August	8,525	20,974	37,744	10,965	78,208	2,828	1,379	806	5,013
	September	5,974	17,067	21,002	7,148	51,191	2,465	1,080	621	4,166
	October	5,920	17,587	18,615	10,691	52,813	2,518	1,791	439	4,748
	November	4,434	15,713	18,907	10,522	49,576	1,780	1,340	541	3,661
	December	7,412	17,505	15,894	6,672	47,483	2,117	1,771	741	4,629
	Total	67,676	201,272	307,139	89,914	666,001	23,372	16,180	5,755	45,307

Source: Rwanda Development Board.

Annex 4: Rwanda - Inflation (percent)

Year	Month	Overall Inflation	Food Inflation	Core Inflation	Energy inflation	Import Prices
2011	January	1.1	-1.9	0.7	0.1	1.7
	February	2.6	0.9	1.6	0.2	2.9
	March	4.1	4.2	2.8	0.3	5.1
	April	5.0	6.2	3.6	0.4	5.7
	May	4.5	4.7	4.3	0.3	6.9
	June	5.8	7.2	5.8	0.4	8.6
	July	7.1	10.6	7.0	0.5	9.2
	August	7.5	10.3	8.2	0.6	10.4
	September	6.6	6.3	9.0	0.5	10.7
	October	7.8	9.6	8.9	0.6	10.1
	November	7.4	9.1	8.1	0.6	9.0
	December	8.3	11.2	8.3	0.6	8.6
2012	January	7.8	12.7	7.1	0.6	7.9
	February	7.9	15.5	6.0	0.6	6.0
	March	8.2	15.5	5.3	0.6	4.9
	April	6.9	12.8	4.8	0.5	3.8
	May	8.3	15.1	5.4	0.6	3.1
	June	5.9	11.3	3.7	0.5	2.6
	July	5.6	10.4	3.0	0.4	2.6
	August	5.8	12.6	2.5	0.4	1.2
	September	5.6	13.7	2.1	0.4	1.2
	October	5.4	12.1	2.5	0.4	2.7
	November	4.5	9.8	2.8	0.3	2.9
	December	3.9	7.9	2.5	0.3	3.2
2013	January	5.7	8.3	4.7	0.4	3.0
	February	4.8	4.7	5.1	0.4	4.0

Source: BNR.



Annex 5: Rwanda – Key Interest rates (percent)

Year	Month	Key Repo Rate	Average Deposit rate	Average Lending rate	Inter-bank rate	T-Bill market			
						28 days	91 days	182 days	WAR
2010	January	7.5	7.6	17.3	7.1	7.5	9.4	0.0	9.1
	February	7.5	7.1	16.1	7.3	7.7	8.6	9.3	8.8
	March	7.0	7.2	16.9	6.8	0.0	7.7	9.1	8.4
	April	7.0	6.9	17.0	6.3	7.2	7.4	8.8	7.9
	May	7.0	6.9	16.7	6.1	7.0	7.1	8.2	7.6
	June	7.0	6.3	17.4	6.6	7.1	7.2	8.0	7.3
	July	7.0	6.1	16.9	7.0	7.1	7.2	0.0	7.2
	August	7.0	6.2	17.2	6.8	7.0	7.0	7.5	7.1
	September	7.0	6.2	16.8	7.4	7.0	7.0	7.9	7.6
	October	7.0	6.5	17.3	7.3	6.9	7.0	7.7	7.5
	November	6.0	7.1	17.5	7.2	6.8	7.0	7.1	7.3
	December	6.0	7.1	16.9	6.8	6.3	6.8	7.2	7.3
2011	January	6.0	7.5	15.6	6.7	6.1	6.4	7.2	7.2
	February	6.0	7.5	16.9	6.7	6.2	6.4	7.2	7.0
	March	6.0	7.5	16.6	6.7	6.4	6.9	7.4	7.2
	April	6.0	8.7	16.2	6.9	6.4	6.8	7.2	7.1
	May	6.0	7.9	16.9	6.9	6.2	6.7	7.2	7.0
	June	6.0	8.0	17.0	7.0	6.1	6.5	6.9	6.8
	July	6.0	7.2	16.6	6.9	6.1	6.4	7.2	6.8
	August	6.0	7.7	17.0	6.9	6.1	6.2	7.2	6.7
	September	6.0	7.7	17.0	7.0	6.3	6.5	6.9	6.7
	October	6.5	7.4	17.0	7.4	6.8	7.0	7.2	7.2
	November	7.0	8.0	16.5	7.5	6.8	7.2	7.7	7.8
	December	7.0	8.0	16.7	8.1	7.0	7.3	7.6	7.6
2012	January	7.0	7.4	17.0	7.3	7.1	7.3	7.7	7.6
	February	7.0	8.3	16.3	6.9	7.1	7.6	7.4	7.6
	March	7.0	8.2	16.3	7.7	7.4	7.6	7.9	7.7
	April	7.0	8.1	16.9	8.0	7.5	7.6	7.9	7.9
	May	7.5	9.9	16.7	8.6	7.9	8.1	8.3	8.3
	June	7.5	7.9	16.8	9.0	8.8	9.6	9.4	9.3
	July	7.5	8.9	16.5	9.1	9.4	10.2	-	9.8
	August	7.5	8.6	17.1	9.5	10.6	10.2	10.5	11.1
	September	7.5	8.5	17.1	10.8	11.5	12.1	12.0	12.3
	October	7.5	9.2	16.6	10.9	11.9	12.4	12.5	12.1
	November	7.5	11.2	16.7	11.9	11.8	12.5	12.7	12.4
	December	7.5	10.7	16.5	11.1	11.8	12.6	12.8	12.4
2013	January	7.5	11.3	17.1	11.1	12.1	12.6	12.8	12.4
	February	7.5	10.3	17.0	10.5	11.6	12.5	12.3	12.0

Source: Rwanda BNR.

Annex 6: Rwanda - Exchange rate (Rwf/US\$)

Year	Month	USD	Euro	UK Pound
2011	January	596.75	796.76	941.74
	February	600.24	818.70	967.81
	March	599.53	838.94	969.40
	April	601.27	867.09	984.12
	May	599.28	860.98	979.09
	June	600.00	863.18	973.20
	July	600.51	856.74	968.36
	August	599.75	860.21	981.86
	September	599.86	826.94	946.72
	October	601.29	822.51	946.92
	November	601.77	817.69	952.80
	December	603.45	796.17	942.00
2012	January	604.37	779.26	937.20
	February	605.15	799.47	956.15
	March	606.75	801.24	959.37
	April	607.01	799.45	971.24
	May	608.58	780.82	970.12
	June	609.94	764.00	947.89
	July	612.95	752.14	955.23
	August	613.60	759.79	963.57
	September	618.22	794.17	995.03
	October	625.24	810.86	1,006.08
	November	628.77	806.64	1,003.95
	December	630.99	827.21	1,018.50
2013	January	631.29	838.05	1,008.81
	February	633.25	846.82	981.39

Source: Rwanda BNR.



Annex 7: Food crop production trends in Rwanda, 2007-2012

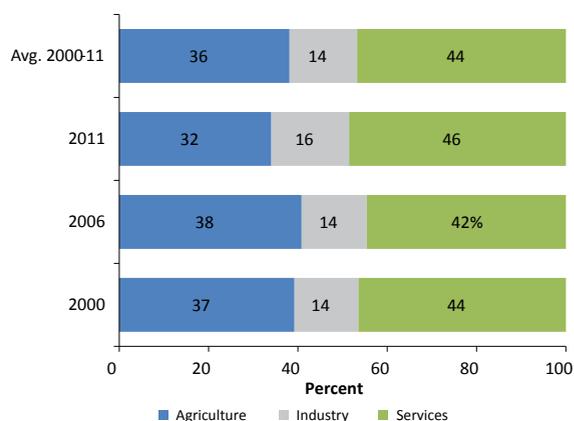
The Agricultural sector has historically been the backbone of Rwanda's economy. It constitutes the second biggest component of the GDP, with an average of 36 percent over the last decade. The sector remains the main employer, generating about 73 percent of employment (especially for women), the main foreign currency earner with about 55 percent of export goods and the main of national food needed, about 80 percent. This gives the sector much strength as the driver of economic power in the country.

Agricultural productivity increased steadily in the past decade. Land productivity (agricultural valued added/cultivated land in ha, henceforth ha) increased in Rwanda from US\$386 in 2000 to US\$580 in 2011. The relatively high level of land productivity reflects the favorable agro-climatic potential resulting in two harvest seasons, as well as the intensive nature of the predominant agricultural production systems. In contrast, labor productivity did not follow the same trend; it increased from US\$202 in to US\$262 in 2011. This is related to the fact that Rwanda has the highest proportion of rural population, most of them engaged in labor intensive agriculture. It appears that most opportunities for future productivity gains lay in the area of making agricultural production less labor intensive, or in other words less subsistence based.

Food crops constitute 85 percent of agriculture GDP, or 30.3 percent of overall GDP. Over the last decade, they registered an average growth of 5.8 percent in terms of GDP. Food crops also dominate the cultivable land with almost 70 percent, reflecting the subsistence nature of Rwandan agriculture. In 2012, roots and tubers constituted the largest share of food crops' harvest (53 percent) followed by bananas (28 percent), fruits and vegetables (8 percent), cereals (7 percent), and pulses including beans and peas

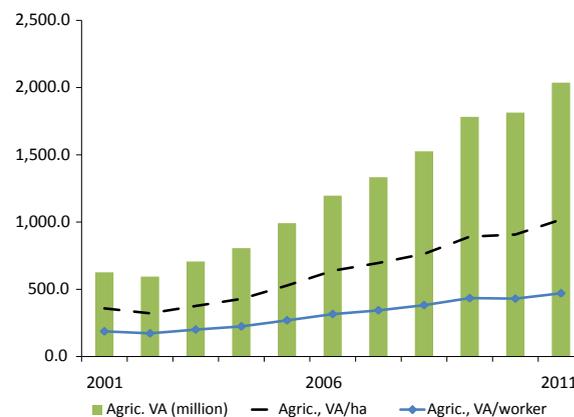
(4 percent). The cultivated area increased by only 1.4 percent between 2001 and 2011, while food crop output registered an average growth of 7.5 percent per year. However, between 2006 and 2011, the food outturn increased by 9.8 percent, almost double of the 5.4 percent of between 2001 and 2006. This reflects good productivity growth through intensification which is desirable to continue.

Annex figure 1: Although declining in recent years, agriculture remains the backbone of the Rwandan economy
(Agriculture sector contributions, percent of GDP)



Source NISR and World Bank staff estimates.

Annex figure 2: Land productivity has increased faster than market productivity
(Agricultural productivity, US\$)



Source: NISR, WDI and World Bank staff estimates.

Agricultural productivity was strong in cereals, tubers and roots, especially since mid-2000s.

Cereals have been the most dynamic category of food crops with production increasing at a rate of 12 percent per year from 2001 to 2011. Growth was more pronounced between 2006 and 2011, when production growth averaged about 19 percent per year, stimulated by the extension in cultivated area, but mostly boosted by improved productivity (yield in kg/ha), fueled mainly by the use of improved seeds and the land consolidation program. Roots and tubers

constitute the second growing category of crops, expanding at 14.6 percent—in volume—from 2006 to 2011, after a decline registered between 2001 and 2006. The growth was also driven by the productivity, especially between 2006 and 2011, when the overall productivity (yield in kg/ha) increased by 12.5 percent per annum, while the cultivated area rose only 4 percent. This was also as a result of the use of improved seeds and the land consolidation program. However, pulses, banana, fruits and vegetables registered modest performances from 2006 to 2011.

Annex Table 1: Agriculture productivity was higher in the second half of the decade thanks to the crop-intensification program
(Growth trends in food crops)

	2001-2006			2006-2011			2001-2011		
	Area in ha	Yield (kg/ha)	Production (MT)	Area in ha	Yield (kg/ha)	Production (MT)	Area in ha	Yield (kg/ha)	Production (MT)
Cereals	2.1	3.1	5.3	5.2	14.7	18.7	3.6	7.9	11.8
Sorghum	0.6	0.7	1.3	-5.4	5.3	-0.6	-2.4	2.8	0.3
Maize	1.4	2.1	3.6	14.5	21.5	39.4	7.8	11.5	20.2
Wheat	15.5	2.4	18.2	14.2	20.3	35.2	14.8	10.1	26.5
Rice	20.9	8.5	31.1	2.3	3.9	6.1	11.2	6.1	18.0
Pulses	1.4	2.9	4.4	0.2	2.0	3.8	0.8	3.2	4.1
Beans	0.9	3.2	4.1	-1.0	1.8	2.3	0.0	3.3	3.2
Peas	-0.1	1.7	1.6	5.6	5.8	16.7	2.7	6.0	8.9
Groundnuts	1.9	-3.1	-1.3	7.3	0.3	10.6	4.6	-0.1	4.5
Soybeans	7.5	4.2	12.0	2.5	-2.9	5.4	5.0	3.5	8.7
Banana	0.2	8.1	8.3	-1.1	5.5	2.8	-0.5	6.0	5.5
Roots and tubers	-2.3	2.2	-0.2	4.0	12.5	14.6	0.8	6.1	7.0
Irish Potatoes	3.4	1.2	4.7	4.0	7.5	11.3	3.7	4.1	8.0
Sweet Potatoes	-6.9	-0.8	-7.7	-5.2	10.4	1.9	-6.0	3.2	-3.0
Taro & Yam	0.4	2.4	2.8	1.4	6.2	7.6	0.9	4.2	5.1
Cassava	-2.4	4.6	2.1	12.1	18.3	27.9	4.6	9.3	14.3
Fruits and vegetables	13.6	16.5	32.4	3.3	3.7	5.6	8.3	9.2	18.3
Total	2.5		5.4	2.1		9.5	1.4		7.4

Source: Ministry of Agriculture, BNR, and World Bank staff estimates.

Annex 8: Rwanda – Gross Reserves

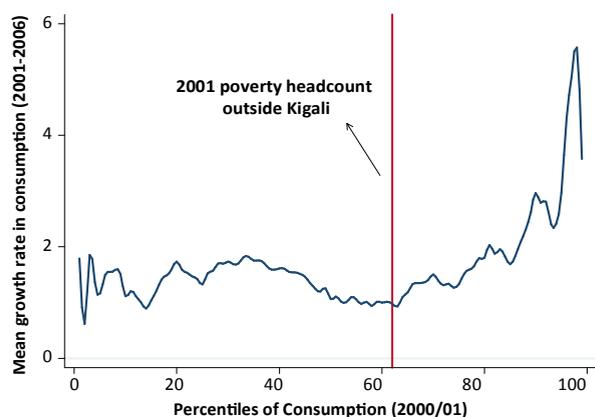
Year	Month	Gross Reserves	
		Rwf billion	million US\$
2011	December	634.4	1,050.0
2012	January	596.7	986.8
	February	581.5	960.0
	March	545.6	899.1
	April	514.1	845.4
	May	464.4	762.2
	June	526.3	859.4
	July	472.9	771.3
	August	450.7	733.4
	September	449.0	721.0
	October	470.6	750.4
	November	477.0	757.4
	December	535.5	848.1
2013	January	465.2	735.9
	February	437.0	689.1

Source: Rwanda BNR.

Annex 9: Different Patterns of Growth and Poverty Reduction in Both Halves of the Decade

Annex Figure 3: Pro-Rich Growth in the Rural Areas between 2001 and 2006

(Growth-Incidence Curve for Rural Areas, 2001-2006)



Source: EICV1 and EICV2.

Annex Table 2: Consumption Growth but Little Poverty Reduction between 2001 and 2006

(Consumption per Adult Equivalent in 2011 Prices and Percentage of Population Below the Poverty Line, 2001-2006)

	Expenditures per AE		Poverty Headcount	
	2001	2006	2001	2006
Kigali	660,112	768,553	22.7	20.8
Rest of Country	162,844	182,001	63	60.2
Rwanda	210,043	231,871	58.9	56.9

Source: EICV1 and EICV2.

Annex Table 3: Strong Poverty Reduction in Kigali and the Rest of the Country between 2006 and 2011

(Consumption per Adult Equivalent in 2011 Prices and Percentage of Population Below the Poverty Line, 2006-2011)

	Expenditures per AE		Poverty Headcount	
	2006	2011	2006	2011
Kigali	768,553	825,927	20.8	16.8
Rest of Country	182,001	211,625	60.2	47.8
Rwanda	231,871	270,921	56.9	44.9

Source: EICV2 and EICV3.

Annex 10: Summary Tables of Descriptive Statistics by Welfare Groups

Annex Table 4 and Annex Table 5 disaggregate the evolution of consumption drivers by welfare group. The descriptive statistics for three distinct groups is presented: The poorest 20 percent of households; the richest 20 percent of households; and, the 60 percent of households between the 20th and the 80th percentile. Annex Table 4 shows that there were significant evolutions in drivers of consumption in all welfare groups in rural Rwanda between 2001 and 2011. The most notable findings are that the percentage of households engaged in independent farming did not change between 2001 and 2011, regardless of welfare group, and that the overall decrease in dependency ratios largely bypassed

the poorest 20 percent of rural households, for which fertility rates and dependency ratios remain high. **Annex Table 5 presents the descriptive statistics by welfare group for households in Kigali City.** Overall, significant changes in all welfare groups are established. The most notable findings are that the average dependency ratio increased significantly for the bottom 20 percent of households, going against the general trend, that the richest 20 percent of households did not increase their engagement in self-employment. The richest 20 percent of households in Kigali are almost uniformly engaged in formal wage employment.

Annex Table 4: Significant Changes in all Welfare Groups between 2001 and 2011, Rural Areas
(Means of Explanatory Variables in 2001 and 2011, Rural Rwanda)

	Poorest 20% of Households			Middle 60% of Households			Richest 20% of Households		
	2001 (EICV1)	2011 (EICV3)	Diff.	2001 (EICV1)	2011 (EICV3)	Diff.	2001 (EICV1)	2011 (EICV3)	Diff.
Consumption Expenditures per AE (2011 Rwf)	52,508	74,254	21,746**	135,310	170,69	35,386**	480,161	688,702	208,541**
Value of Agricultural Production (2011 Rwf)	52,458	113,414	60,956**	99,571	229,323	129,752**	182,933	351,757	168,824**
Share of Harvest Sold	9.6	14.8	5.2**	14.2	22.3	8.1**	15.6	26.8	11.2**
Farm Self Employment (% of households)	97.9	97.6	-0.3	98.4	97.6	-0.8	89.6	88.7	-0.9
Farm Wage Employment (% of households)	22.7	76.7	54.0**	13.6	53.6	40**	9.9	26.7	16.8**
Non-Farm Self Employment (% of households)	8.7	31.3	22.6**	12.3	40.8	28.5**	20.9	48.7	27.8**
Non-Farm Wage Employment (% of households)	13.6	43.3	29.7**	15.6	43.4	27.8**	29.1	52.9	23.8**
Household Size in Adult Equivalents	5.14	4.99	-0.15*	4.45	4.24	-0.21**	3.72	3.66	-0.06
Dependency ratio	1.24	1.2	-0.04	1	0.89	-0.11***	0.7	0.58	-0.12**

Source: EICV1 and EICV2.

Annex Table 5: Significant Changes in all Welfare Groups between 2001 and 2011, Kigali City
(Means of Explanatory Variables in 2001 and 2011, Kigali City)

	Poorest 20% of Households		Diff.	Middle 60% of Households		Diff.	Richest 20% of Households		Diff.
	2001 (EICV1)	2011 (EICV3)		2001 (EICV1)	2011 (EICV3)		2001 (EICV1)	2011 (EICV3)	
Consumption Expenditures per AE (2011 Rwf)	234,130	264,451	30,321**	438,052	592,849	154,797**	854,937	1,244,625	389,688**
Non-Farm Self Employment (% of households)	17.8	45.3	27.5**	41.9	52	10.1**	41.2	46.9	5.7
Non-Farm Wage Employment (% of households)	23.5	57.5	34.0**	67.9	78.3	10.4**	89	95.8	6.8**
Household Size in Adult Equivalents	4.9	4.5	-0.40*	4.68	4	-0.68**	4.17	3.4	-0.77**
Dependency ratio	1.03	1.18	0.15*	0.79	0.61	-0.18**	0.53	0.31	-0.22**

Source: EICV1 and EICV3; ***: Statistically Significant at 1%; * Statistically Significant at 10%.



Annex 11: Statistical Decomposition Methods and Results

In general terms, statistical decomposition methods decompose changes in the mean of a variable in a part that can be explained by changes in covariates (the “explained” part) and a part that can be explained by changes in coefficients (the “unexplained” part). In this special focus, interest is in decomposing the change in mean household consumption between 2001 and 2011, into a part that can be explained by changes in the means of the covariates (such as increased agricultural production and commercialization, and increased non-farm activity) and an unexplained part.

The Oaxaca-Blinder method is one of the best-known statistical decomposition methods, but it only decomposes changes in the mean of a variable (Oaxaca, 1973; Blinder, 1973). From a policy perspective, only focusing on the mean is of limited importance. In our case, we would like to know which factors were associated with consumption changes at various points of the distribution. That is, can the same factors explain consumption growth of both the poor and the rich, or were certain factors more important for the poor and vice versa?

To explore this, a novel method is applied, which generalizes the Oaxaca-Blinder method to all parts of the distribution instead of just the mean (Firpo, Fortin and Lemieux, 2007 2009). In this fashion, what has driven consumption growth at various points of the distribution is examined. We will focus on three key points of the distribution: The 25th percentile (the poorest households), the 50th percentile (the median households) and the 75th percentile (the better-off households). In technical terms, following decomposition is performed:

$$\alpha (Consumption(2011)) - \alpha (Consumption(2001)) \\ = [\alpha (X_{2011}) - \alpha (X_{2001})] \beta_{pooled} + \alpha (X_{2011}) (\beta_{2011} - \beta_{pooled}) + \alpha (X_{2001}) (\beta_{pooled} - \beta_{2001})$$

Where $\alpha (\cdot)$ is a particular percentile, X is a vector of covariates and β denotes the coefficients of the quantile regressions. The first part of the expression,

$$[\alpha (X_{2011}) - \alpha (X_{2001})] \beta_{pooled} ,$$

is the explained part: The part of the difference in consumption between 2011 and 2001 that can be explained by differences in the covariates (the X 's), using the coefficients from the pooled regression (β_{pooled}). This part can further be decomposed into the contribution of each individual covariate. The second part

$$\alpha (X_{2011}) (\beta_{2011} - \beta_{pooled}) + \alpha (X_{2001}) (\beta_{pooled} - \beta_{2001})$$

is the unexplained part: The part of the difference in consumption between 2011 and 2001, that is due to the difference in regression coefficients (the difference in returns to activities between 2001 and 2011). In this case, interest is in the explained part: To what extent can the difference in consumption between 2001 and 2011 be explained by the difference in covariates between 2001 and 2011? In other words, can the higher level of consumption in 2011 be explained by a higher level of consumption-driving covariates in 2011 compared to 2001?

Annex Table 6 shows the results of the decomposition for the rural areas and Kigali City. The first thing to notice is that the growth in consumption mirrors the growth-incidence curves for rural Rwanda (Figure 45 in main text) and Kigali (Figure 44 in main text):

Annex Table 6: Quintile Decomposition of the Growth in Consumption, 2001-2011

	Rural Areas Percentile			Kigali City Percentile		
	25 th	50 th	75 th	25 th	50 th	75 th
Ln (Consumption Growth)	0.301	0.252	0.242	0.243	0.184	0.265
Part Explained by Changes in Covariates	0.187***	0.223***	0.244***	0.376***	0.374***	0.31***
Unexplained Part	0.113***	0.029***	-0.002***	-0.133***	-0.190***	-0.045***
<i>Percentage of Consumption Growth Explained By:</i>						
Increased Agricultural Production	13.2***	19.4***	24.5***	na	na	na
Increased Agricultural Commercialization	11.9***	13.2***	10.3***	na	na	na
Increased Non-Farm Wage Employment	0	4.6***	7.9***	55.5***	77.7***	43.8***
Increased Non-Farm Self Employment	10***	14.9***	16.2***	23.6***	17.9***	3***
Decreased Dependency Ratio	7.2***	10***	11.1***	22.6***	32.3***	18.9***
N	17784	17784	17784	2233	2233	2233

Source: EICV1 and EICV3; ***: Statistically Significant at 1%.

In rural areas, growth was higher for the poorest households (25th percentile) than for the median households (50th percentile) and the better-off households (75th percentile). In Kigali, the U-shaped pattern is found, with growth being higher for the poorest (24.3%) and better-off (26.5%) households than for the median households (18.4%).

On average, 88 percent of the growth in consumption in rural areas can be explained by the “growth” in covariates between 2001 and 2011. The explained part is higher for wealthier than for poorer households. This can potentially be explained by the fact that the model does not include social protection transfers that particularly benefit the extra poor. Since the social protection programs did not exist in 2001, they cannot be included in the model.

Focusing on the role of individual covariates, the increase in agricultural production between 2001 and 2011 which accounts for the lion’s share of the increase in household consumption

is established. Increased agricultural production explains 13 percent of consumption growth for the poorest households, 19 percent for the median households and 25 percent for the better-off households. Adding the role of increased agricultural commercialization, improvements in agriculture account for 24 percent of consumption growth at the 25th percentile, 33 percent at the 50th percentile and 35 percent at the 75th percentile.

The move to self-employment in non-agricultural businesses emerges as the second main correlate of consumption growth, explaining 15 percent of consumption growth at the median. Increased non-farm self-employment has been important for poorer and wealthier households alike. In contrast, the increase in non-farm wage employment has only been important for the better-off households, explaining 8 percent of their growth in consumption. For the poorest 25 percent of household, the move to nonfarm wage employment has not been associated with higher consumption levels.

The decrease in the child dependency ratio spurred by falling fertility rates has also been associated with consumption growth across the distribution. The role of decreased dependency ratios was smallest for the poorest households which experienced the smallest declines in fertility rates and dependency ratios over the past decade.

In Kigali, the growth of consumption is “over-explained” by the changes in covariates. This

means that consumption in Kigali grew by less than would be expected, by the changes in covariates, suggesting that returns to activities diminished between 2001 and 2011. The increased engagement in non-agricultural wage employment has been the single main driver of consumption growth in Kigali, explaining 78 percent of consumption growth at the median. In contrast to rural areas, self-employment has been less important, especially at the higher ends of the distribution.



REFERENCES

- Banerjee, A. and Duflo, E. (2008). "What is Middle Class about the Middle Classes around the World?" *Journal of Economic Perspectives* 22(2): 3-28.
- Barrett, C., Reardon, T. and Webb, P. (2001). "Nonfarm Income Diversification and Household Livelihood Strategies in Rural Africa: Concepts, Dynamics, and Policy Implications". *Food Policy* 26(4): 315-331.
- Baulch, R. and McCulloch, N. (2000), "Tracking Pro-Poor Growth." ID21 insights No. 31. Sussex: Institute of Development Studies
- Blinder, A. S. (1973). "Wage Discrimination: Reduced Form and Structural Estimates." *Journal of Human Resources* 8: 436-455.
- Bloom, D. Canning, D. and Sevilla, J. (2003). "The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change." Santa Monica: The RAND Corporation.
- Easterly, W. (2001). "The Middle Class Consensus and Economic Development." *Journal of Economic Growth* 6(4): 317-336.
- Firpo, S., Fortin, N. and Lemieux, T. (2007). "Decomposing Wage Distributions using Influence Function Projections." Working paper. Department of Economics, University of British Columbia.
- Firpo, S., Fortin, N. and Lemieux, T. (2009). "Unconditional Quantile Regressions." *Econometrica* 77(3): 953-973.
- IMF. (2012). "World Economic Outlook Database, October 2012." Washington DC: The International Monetary Fund.
- Kakwani, N. and Pernia, E. (2000), "What Is Pro-Poor Growth?" *Asian Development Review* 18(1): 1-16.
- NISR. (2012a). "The Evolution of Poverty in Rwanda from 2000 to 2011: Results from the Household Surveys (EICV)." Republic of Rwanda: National Institute of Statistics of Rwanda.
- NISR. (2012b). "EICV3 Thematic report: Economic Activity." Republic of Rwanda: National Institute of Statistics of Rwanda.
- Oaxaca, R. (1973). "Male-Female Wage Differentials in Urban Labor Markets." *International Economic Review* 14: 693-709.
- Ravallion. M. and Chen, S. (2003). "Measuring Pro-Poor Growth." *Economic Letters* 78(1): 93-99.
- Ravallion, M. . "Pro-Poor Growth: A Primer."
- Reardon, T. (1997). "Using Evidence of Household Income Diversification to Inform Study of the Rural Nonfarm Labor Market in Africa," *World Development* 25 (5): 735-748.
- Reardon, T., Berdegue, J., Barrett, C. and Stamoulis, K. (2006). "Household Income Diversification into Rural Nonfarm Activities." IN: Haggblade, S., Hazell, P. and reardon, T. (eds.). "Transforming the Rural Nonfarm Economy." Baltimore: Johns Hopkins University Press.
- United Nations (2011). "World Population Prospects: The 2010 Revision." Department of Economic and Social Affairs, Population Division. New York: United Nations.
- World Bank. (2005). "Pro-Poor Growth in the 1990s. Lessons and Insights from 14 Countries." Washington DC: The World Bank.



The World Bank, Rwanda

Blvd. de la Revolution
SORAS Building
P.O. Box 609 Kigali, Rwanda
Telephone: +250 252 591 300
Fax: +250 252 576385
www.worldbank.org/rw



THE WORLD BANK

Produced by Poverty Reduction and Economic Management Unit Africa Region.

Photo credits: © Rogers Kayihura/World Bank.

Design by: Robert Waiharo.