Developing Effective Solutions to Boost Domestic Saving in Rwanda

International Consultant on Domestic Saving in Rwanda

FINAL DRAFT

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1. Introduction

Rwanda's *Vision 2020* (Republic of Rwanda [ROR], 2000) set an ambitious growth target of 7% with the aim of taking the country to middle-income status by 2020 (That growth target was revised upward to 11.5% in 2012). This initial rate of growth was expected to be achieved with an investment rate of 30 percent – a rate that is quite typical of fast-growing economies. Though the ambitions of *Vision 2020* have underpinned all the country's development programs to date, the target investment rates have differed across development plans.

In particular, the first *Economic Development and Poverty Reduction Strategy* (EDPRS 1) (ROR, 2007) proposed a target rate of only 22% for the 2008 to 2012 period (10% public investment and 12% private investment). That target was, in fact, surpassed, with the achievement of an average rate of 22.5% for the period (and, correspondingly, a slightly higher rate of growth than projected - 8.2% instead of the planned 8.1%). This modest overperformance was achieved because public investment exceeded the target rate while private investment came in exactly on target.

The second Economic Development and Poverty Reduction Strategy (EDPRS 2) (ROR, 2013) similarly proposed a lower target investment rate (than *Vision 2020's* 30%) but a slightly more ambitious one than EDPRS 1. That target rate of investment was 27% for the years 2013 to 2017, and was not met. The average investment rate for that period was only 25.6%. While private investment exceeded its target rate (14% instead of 12.5%), public investment was well below its target rate (11.5% instead of the projected 14.5%). Of great concern as well – according to the EDPRS 2 Mid-term Evaluation (ROW, 2018) – was the fact that even this lower-than-desired rate of investment was financed more by foreign saving than by national or domestic saving.[1] This concern is well placed. Rwanda's national and domestic saving rates are low, even relative to other low-income countries and to its East African neighbours. Why is this the case?

[1] Throughout this report we will use the word "saving" to refer to that part of the annual *flow* of income that is not consumed (nor used to pay taxes, in the case of the private sector) and "savings" to refer to the *stock* of resources that have been accumulated from these annual flows. This is, strictly speaking, the correct use of the terms even though in common, and even academic, language the term "savings" is used to refer to both flow and stock.

In what follows, we will examine various aspects of Rwanda's saving-investment profile, and the financial development and savings mobilization programs that have been implemented to address the country's shallow finance and low saving rates. The intention is to try to determine why saving mobilization efforts so far have not resulted in a discernable increase in domestic saving rates in Rwanda. Beyond that diagnosis, we will examine existing structures, programs and institutions and make recommendations on ways to enhance current successes, or identify changes needed in order to generate a greater saving impact where such an impact has been absent or limited.

We began this report with a discussion of the country's investment targets to emphasize the fact that concerns about saving are derived, ultimately, from the desire to ensure that the country can generate and sustain a high investment rate from its own saving efforts. We will demonstrate that efforts at saving mobilization thus far, though largely restricted to financial saving mobilization, have been at least moderately successful in the financialization of savings, but not in boosting overall saving or investment rates. We argue that this is, in a large part, because intermediation – the vital link between saving and investment – has not been ingrained in existing programs. We propose an approach that restores and reinforces that link between saving and investment.

2. Rwanda's Saving-Investment Profile

2.1. Clarifying the Aggregates and their Relationships

Concern about Rwanda's saving performance derives, of course, from the fact that the saving rate ultimately determines the rate of growth and the rate of structural change, through its effect on the rate of investment. Though foreign-sourced resources, in forms such as foreign direct investment, aid, and foreign lending, are typically important contributors to investment, the country only has full control over its local saving effort. However, there is more than one (macroeconomic) measure of saving that can capture the country's saving effort; and it is important to recognize what these measures are, and what is gained and what is lost from the use of a particular measure. The most common measure used in saving research (at the macroeconomic level) is gross national saving (GNS). This is likely because this measure has a very

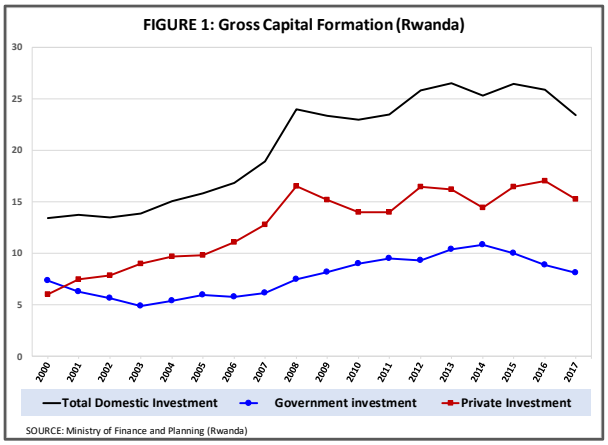
precise relationship to investment and to the various sub-national measures of saving.[2] However, while gross national saving captures that portion of saving that comes from the national effort, it also includes the contribution of unilateral transfers (foreign grants and household remittances) and the net gain (or loss) in income from factor payments to foreigners and the foreign receipts of nationals. For a country such as Rwanda, which is concerned about its saving effort net of aid receipts, there is a legitimate desire to capture the saving effort from the domestically sourced income of nationals. For this, gross domestic saving is a more appropriate measure. However, this measure does not have a simple, or established, relationship with the accepted definitions of private (corporate and household) saving, government saving and foreign saving. Nevertheless, one can derive the domestic saving portion of the first two, though it is important to recognize that these are not the typical definitions of these terms. When domestic saving (rather than national saving) is the measure of interest, the remaining content of investment, after domestic saving is accounted for, is measured by the trade balance (sometimes called the resource balance) rather than foreign saving (see Appendix 1).

2.2. Rwanda's Saving-Investment Performance

Figure 1 (below) indicates Rwanda's investment performance since 2000. In the 2000-2008 period, investment was rising nearly continuously. However, since 2008 that growth has stalled, and investment rates have remained in the region of 25% of GDP. This pattern of growth has largely been generated by private investment which rose from 6% in 2000 to 16.5% in 2008 but has remained in that neighbourhood since. Government investment has fluctuated between 5% and 11% and followed a different pattern – falling from 2000 to 2003 and again from 2014 to 2017 but rising in between. Figure 2 and Table 1 indicate the relationship between investment and two measures of the country's saving efforts. Domestic saving accounts for a relatively small proportion of domestic investment but its evolution largely mirrors that of investment. National saving has been significantly higher than domestic saving, as would be expected in a country

[2] These sub-national measures are, typically, government or public saving, household saving and corporate saving. In the case of Rwanda, data for the latter two measures are not available because the national accounts have not, thus far, been measured using the income approach. Instead we can measure government saving (which excludes government-owned entities) and private saving (which is includes government-owned entities).

receiving large amounts of grant aid, but its relationship to investment is far less consistent.[3] In general, national saving was rising faster than investment until 2007 (even exceeding investment in that year[4]) but it has followed a largely declining trend since. The implication is that, since 2007, foreign saving has accounted for increasing proportions of domestic investment. Since Rwanda is a low-income country, its use of foreign saving is defensible on development grounds (the country is borrowing from the rest of the world to support its investment effort), however, the fact that foreign saving has accounted for more than 50% of investment since 2014 is a legitimate cause for concern.[5]



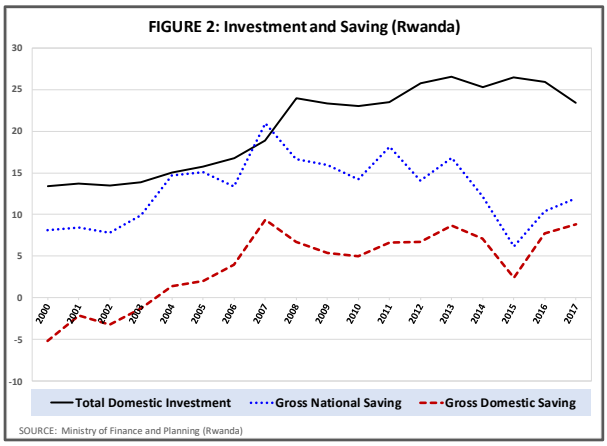


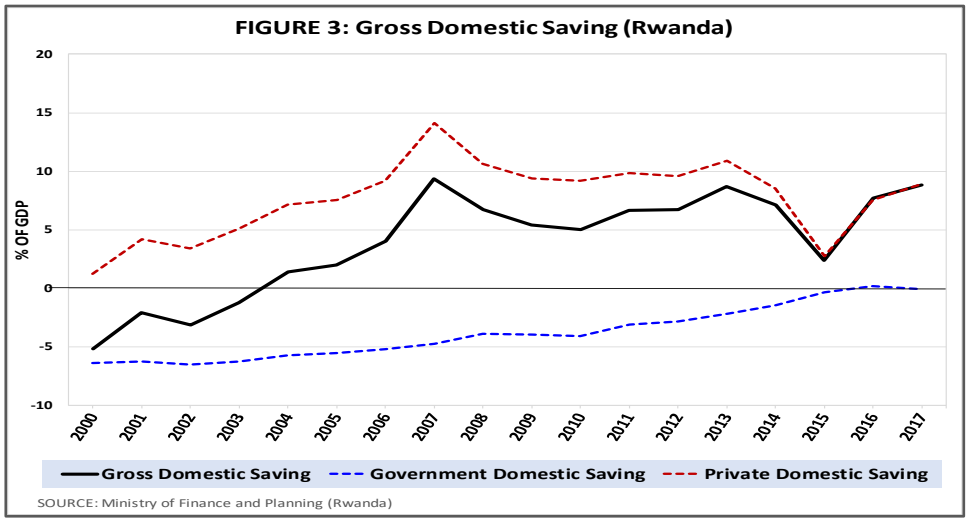
Table 1: Saving and Investment in Rwanda (2000-2017)

Measures as Percentage of GDP	2000-04	2005-09	2010-14	2015-17
Domestic Investment	13.9	19.8	24.8	25.2
Gross National Saving	9.8	16.4	15.1	9.5
Foreign Saving	4.1	3.4	9.7	15.7
Gross Domestic Saving	-2.1	5.5	6.8	6.3
Private Domestic Saving	4.2	10.2	9.6	6.4
Government Domestic Saving	-6.3	-4.7	-2.8	-0.1

Source: Ministry of Finance and Planning (Republic of Rwanda).

[3] National saving is measured by subtracting consumption from gross national disposable income, which includes grant aid receipts (public transfers) and remittances (part of private transfers) as well as net factor income from abroad. Domestic saving simply subtracts consumption from gross domestic product, which means grant aid, remittances and factor income from abroad are not counted as part of income for that measure (see Appendix 1).
[4] National saving exceeds domestic investment when a country has a current account surplus (meaning that foreign saving is negative).
[5] The dramatic fall in saving rates in 2015 was a specific response to external shocks (50% drop in mineral exports, fall in remittance receipts etc.) and, as the 2016 and 2017 recovery show, are not part of the "low saving" problem.

The evolution of gross domestic saving and its constituent measures is shown in Table 1 and Figure 3. What is clear from this table and figure is that the pattern of evolution of gross domestic saving has been largely dictated by private domestic saving, which grew from very low levels to peak at 14% in 2007. However, that measure failed to sustain this growth trajectory and, in fact, slipped below 10% of output in 2014 and has not been above that level since. Government domestic saving was very negative in 2000 (at -6.4%) but increased steadily until it slipped past zero (0.2%) in 2016. However, the growth trajectory seems to have stalled since 2015 (hovering around zero).[6]



The weak performance of government domestic saving, and the inconsistent performance of private domestic saving is mirrored in the pattern of consumption growth. As Table 2 indicates, from 2000 to 2004, the rate of growth in private consumption was significantly slower than the rate of growth in output – which helps to explain the growing private domestic saving rate – but government consumption growth exceeded output growth by a substantial amount – which helps to explain the negative government saving rate. Since 2005, the growth in private consumption has remained lower than the growth in output but the gap has been narrower. Government consumption growth, on the other hand, except for the 2005-2009 period, has continued to exceed the rate of output growth. These patterns of consumption growth serve to

[6] The dip in saving in 2015 was the result of a short-term shock (related to pricing of minerals) and does not reflect any change in long-term patterns (as the quick recovery suggests). It will, therefore, not be discussed in detail here.

reinforce what is suggested by the data on saving rates – a weak government saving performance is one part of the explanation of Rwanda's low saving rate.

Table 2: Output and Consumption Growth

Measures of Growth	Years			
	2000-04	2005-09	2010-14	2015-17
Rate of output growth	7.9	8.8	7.2	7.0
Rate of private consumption growth	6.0	8.5	6.5	6.5
Rate of government consumption growth	9.9	6.8	10.1	8.3
Output Growth *minus* private consumption growth	*1.9*	*0.2*	*0.7*	*0.5*
Output growth *minus* government consumption growth	*-1.9*	*1.9*	*-2.9*	*-1.4*

Source: National Institute of Statistics of Rwanda (NISR)

2.3. Financial Development and Financial Saving in Rwanda

In 2007, the government of Rwanda launched the first Financial Sector Development Program (FSDP I) (ROR, 2013). Among the objectives of that program were: (1) enhancing access to, and affordability of, financial services; and (2) improving saving mobilization (leading, hopefully to an increase in both overall saving and the proportion of total savings held in financial instruments). This was followed by a second Financial Sector Development Program in 2012 (FSDP II). In terms of the first objective, this program has been extremely successful. As Table 3 indicates, the proportion of Rwandans who are financially included (are holders of formal or informal financial products) increased from 48% in 2008 to 89% in 2016. This means that the target inclusion level of 80% by 2017 had already been surpassed by 2016. Notably, most of the growth in inclusion was in the formal sector (bank and non-bank financial institutions). The largest part of that growth can be attributed to one of the flagship programs of the FSDP – the development of microfinance institutions called Umurenge SACCOs. These are savings and credit cooperatives (SACCOs) created to ensure that each of Rwanda's 416 administrative sectors (Umurenge) had at least one micro-finance institution of its own (Access to Finance Rwanda, 2012). In 2016, 27% of adults in Rwanda held an account at a Umurenge SACCO. Though inclusion, through the holding of bank accounts, has improved, it has been less impressive, with most of that growth occurring between 2008 and 2012 (Table 3).

That growth in financial inclusion has translated into the increase financialization savings. As Table 4 indicates, the proportion of adults in Rwanda who were savers (using formal or informal financial instruments) increased from 52% in 2008 to 86% in 2016. However, that increase has not come from the greater utilization of bank deposits. In fact, the proportion of adults using bank products actually declined (after first increasing). Instead, Rwandans have increased their holdings of formal financial saving instruments by purchasing deposits in Umurenge SACCOs (and other microfinance institutions) and increasing their holdings of Mobile money while concurrently increasing informal saving (Table 4).

Table 3: Financial Inclusion in Rwanda

Sector of inclusion	% of Adult Population		
	2008	2012	2016
Financially Excluded (all)	52	28	11
Financially Included (all)	48	72	89
Financially Included – Formal	21	42	68
Banks	14	23	26
Non-bank Financial Institution (Only)	7	19	42
Use of both types of financial products	5	14	23
Use of Umurenge SACCO products	-	22	27
Financially Included - Informal 0nly	26	30	21
Use of both formal and informal products	13	27	52

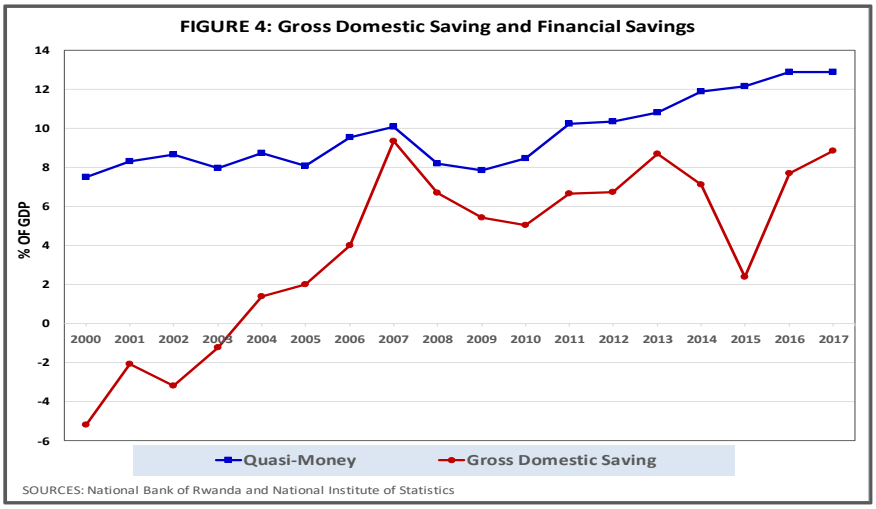
Source: Finscope Rwanda (2008, 2012, 2016),

Table 4: Financial Saving in Rwanda

Type of Saving	% of Rwandan Adults		
	2008	2012	2016
Total Savers	52	71	86
Bank saving	14	16	13
Other formal institution	3	25	45
Saved with Umurenge SACCOs	-	22	27
Saved using Mobile Money	-	-	17
Informal Saving	38	40	56
Saved at home	39	24	35
Accessed Credit	27	59	72

Source: Finscope Rwanda (2008, 2012, 2016)

Critically, however, the holding of larger numbers financial saving instruments has not meant higher recorded levels of (overall) domestic saving. The stock of financial savings (defined here as the holdings of quasi money)[7] has been increasing relative to output since 2010 – suggesting that a larger proportion of the flow of saving is being allocated financial instruments – but that overall flow (gross domestic saving), as a proportion of output, has shown no upward momentum during that period (Figure 4).[8] In effect, increased savings mobilization through the financial sector has had no discernable effect on the overall propensity to save.



3. Economic, Demographic and Structural Explanations of Saving Propensities

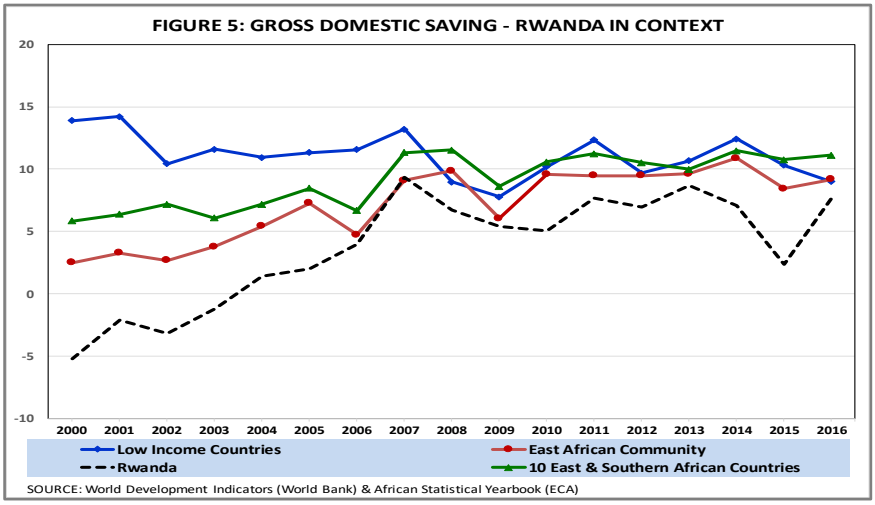
3.1. Rwanda in East Africa and the World

To put Rwanda's saving rate in context, it is important to consider whether that rate is significantly different from the average for low-income countries, the saving rates of its neighbours in the East African Economic Community, and the saving rate of the rest of East and Southern Africa generally. As Figure 5 shows, Rwanda's domestic saving rate was very far below the average for all three comparison groups in 2000, but that gap narrowed significantly between

[7] Quasi money, broadly defined, is M3 (liquidity) minus M1 (narrow money).

[8] Neither the stock of financial saving (quasi money) nor its rate of increase can tell us the exact amount of financial saving (the flow). However, if the stock is increasing relative to income, this indicates that savers wish to hold an increasing proportion of their savings in the form of financial instruments and it is a reasonable presumption that, to do so, they are allocating larger amounts of saving (the flow) to financial instruments. Thus, financial saving is almost certainly rising.

2000 and 2007. In Fact, in 2007 Rwanda had caught up to the East African community average.[9] However, since then, Rwanda's saving rate has remained steadfastly below the average of all the country groups because the increase in saving rate from 2000 to 2007 was not sustained.



The large body of theoretical and empirical literature on saving offers many potential explanations for household, private and aggregate saving behaviour across countries. Thus, the list of potential determinants of saving, proposed and examined, is quite large. However, some studies have attempted to reduce the list of potential determinants to those that are robust to the estimation method used, the country sample, and the time period covered. In particular, Grigoli *et al* (2014), updating and extending earlier work in the same vein by Loayza *et al* (2000), suggest a group of variables that are the most consistent and robust explanatory variables for private and aggregate (domestic) saving rates across both time and space. These are presented, with their expected impact and the nature of the relationship, in Table 5 below.

To examine the relevance and impact of these variables with respect to Rwanda's neighbours and the country itself, we estimated a private saving and gross domestic saving equation for a group of ten East and Southern African countries (Burundi, Kenya, Madagascar, Malawi,

[9] That group does not include South Sudan because of data limitations (as well as the fact that it did not exist as a country for most of that period).

Mauritius, Mozambique, Rwanda, Tanzania, Uganda and Zambia).[10] Since saving is a long-memory variable (current saving is strongly related to past saving) the appropriate regression includes a lagged dependent variable. We are thus faced with a dynamic regression and a relatively narrow panel of countries but a moderately long time series for a panel data framework (1998-2017). We therefore employed Kiviet's (1995, 1999) small-sample-bias-corrected least squares dummy variable estimator (LSDVC) with Bruno's (2005) augmentation to allow for an unbalanced panel. Potentially endogenous variables entered the equation with a lag (to make them predetermined). The equations are first estimated for the group of 10 countries, then coefficients specific to Rwanda are estimated by removing the assumption of common coefficients for each variable individually. (In practice, each variable is separated into its Rwanda and non-Rwanda values and the equation is re-estimated after replacing the single variable with these two components. (This is done one variable at a time, to reduce the degrees of freedom challenges). The results are presented in Table 6 below.

Table 5: Relevant Determinants of Saving and their Expected Impacts

Relevant Variable	Expected Impact on Saving	Relevant Comparison
Per capita income	Positive	Across countries and over time
Per capita income growth	Positive	Across countries and over time
Old-Age Dependency Ratio	Negative	Across countries and over time
Youth Dependency Ratio	Negative	Across countries and over time
Level of Urbanization	Negative	Across countries and over time
Terms of Trade	Positive	Over time
Inflation Rate	Positive	Across countries and over time
Government Saving Rate	Private negative/Aggregate positive	Across countries and over time
Private Sector Credit	Negative	Across countries and over time

Sources : Grigoli *et al* (2014), Loayza et al (2000).

For this group of countries, the negative impact of government saving on private saving is both significant and strong. The results suggest that each dollar of government saving reduces private saving by 90 cents – implying little net impact on gross domestic saving. Surprisingly, neither per capita growth nor the level of per capita income was shown to have any impact on private and gross domestic saving rates. Both demographic variables had an impact on saving (private saving

[10] Attempts to estimate the equations for just the East African Community countries proved unfeasible because the panel was too narrow given that the time series only covered 20 years.

mostly) but higher youth dependency increased saving rates (contrary to expectations).[11] Given the importance of saving for child-related expenditures (such as secondary school fees) in the region, that association is not altogether surprising. The effect of urbanization was also contrary to expectation – encouraging higher, rather than lower, saving rates. The financial variables (inflation and private sector credit) did not appear to have any impact on private or gross domestic saving for this group of countries. Replacing credit with M3 did not change that result (Appendix 2).[12] Lastly, and perhaps most importantly, the variable that appeared to have the strongest impact on saving, for that group of countries, was the terms of trade. That variable was a strongly significant determinant of both private and gross domestic saving.

With respect to Rwanda, individually, only two variables appeared to matter for saving (in a statistical sense). The private saving equation suggests that the crowding out effect of government saving on private saving is much weaker in Rwanda – suggesting a reduction of 70 cents to each dollar of public saving rather than the 90 cents for the 10-country group. The other significant coefficient was for the terms of trade, and it was significant for both the private and gross domestic saving equations. The implication is that for Rwanda, as for its neighbours, the terms of trade (a variable over which these countries have little control) may be the most powerful determinant of their saving performance.

[11] Grigoli *et al* (2014) argue that the positive coefficient for youth dependency is due to its collinearity with per capita output levels, but that variable remains positive and significant even when the per capita output variable is excluded from the equation. Also, the coefficient for per capita output does not become significant when the youth dependency variable is excluded from the equation (see Appendix 2).

[12] Replacing private sector credit with liquidity (M3) did not change this result. Though it should be pointed out that the literature does not support M3 (relative to GDP) as a measure of saving. Liquidity finds some support as a determinant of growth but not saving.

Table 6: Determinants of Saving for Ten East and Southern African Countries and Rwanda

Explanatory Variables	Ten East and Southern African Countries		Rwanda	
	Private Domestic Saving	Gross Domestic Saving	Private Domestic Saving	Gross Domestic Saving
Lagged private domestic saving rate	0.293*** (4.42)			
Lagged gross domestic saving rate		0.435*** (1.70)		
Government saving rate	-0.909*** (-7.38)	-0.072 (-0.61)	-0.691** (-2.22)	-0.108 (-0.61)
Per capita income growth (lagged)	0.198 (1.53)	0.178 (1.42)	0.207 (1.45)	0.208 (0.64)
Per capita income (000s of $PPP)	1.064 (0.94)	0.781 (0.67)	5.655 (1.28)	3.015 (0.65)
Youth dependency ratio	0.361*** (2.70)	0.263* (1.89)	-0.000 (-0.00)	0.094* (0.28)
Old age dependency ratio	-2.182* (-1.67)	-1.491 (-1.09)	-3.051 (-1.04)	-1.930 (-0.66)
Urban population (%)	0.543** (2.22)	0.450* (1.83)	1.571 (1.11)	1.236 (0.90)
Terms of trade	0.089*** (4.97)	0.071*** (3.98)	0.104*** (2.91)	0.075** (2.08)
Inflation rate (lagged)	-0.020 (-0.47)	-0.026 (-0.61)	0.046 (0.31)	0.053 (0.36)
Private sector credit	-0.042 (-0.42)	-0.076 (-0.77	0.269 (0.89)	0.014 (0.04)

Source: Author's calculations using World Development Indicators (World Bank) and African Statistical Yearbook (ECA)
Figures in brackets are z-statistics. *, **, *** indicate 10%, 5%, and 1% significance levels respectively.

3.2. Determinants of Saving and Rwanda's Saving Performance

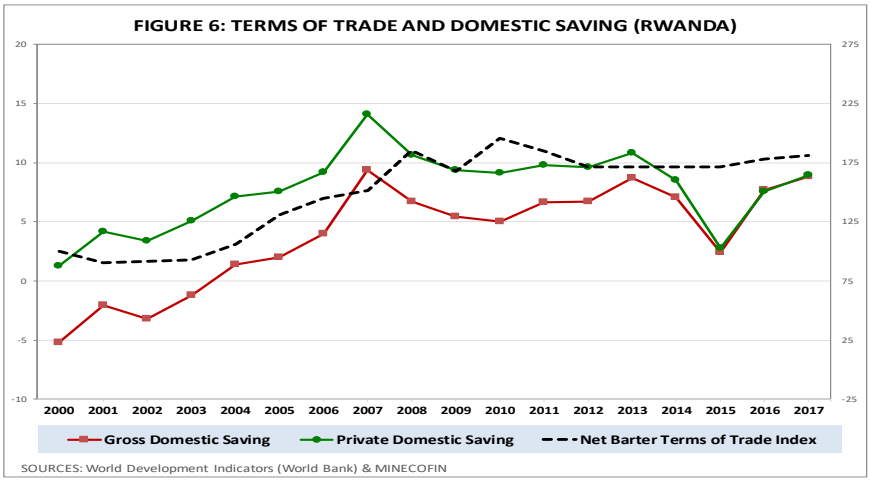
Table 7 presents the evolution of the variables identified in Table 5, for Rwanda, from 2000 to 2017 (in four 4-year periods and a final two-year period). If we were to rely on the prediction of the general literature, persistent increases in the (three) real income measures and persistent decline in the youth dependency ratio should have meant continuous increases in the domestic saving rate (or persistence at a high rate). However, in the estimated equation, the income measures are not significant for Rwanda or its neighbours and the youth dependency ratio had the opposite sign to that predicted by the literature. Going beyond the literature, the estimation results combined with movements of the relevant variables, suggest that the effect of a falling

youth dependency ratio (negative) and rising urbanization rates (positive) might perhaps have cancelled out each other, and the overall effect of low government saving would not have had much of an impact on gross domestic saving. However, there is unanimity in the broader saving literature, the estimation results for the 10 East and Southern African countries, and the specific coefficient estimates for Rwanda (Table 6) with respect to the impact of the terms of trade. As Figure 6 shows, the terms of trade do indeed appear to have a great deal of predictive capacity with respect to the evolution of Rwanda's private and domestic saving rates. We, therefore, have a second (and compelling) part of the explanation for the stagnation in Rwanda's saving rates since 2008 – the stagnation in Rwanda's terms of trade after 2008.

Table 7: Measures of Saving and Saving-Related Aggregates for Rwanda

Relevant Aggregate	2000-03	2004-07	2008-11	2012-15	2016-17
Gross Domestic Saving Rate	-2.9	4.2	6.0	6.2	8.3
Private Domestic Saving Rate	3.5	9.5	9.8	7.9	8.2
Government (Domestic) Saving Rate	-6.4	-5.3	-3.8	-1.7	0.0
GNI per Capita					
Constant Local Currency (000' RWF)	252	315	394	466	526
Constant US Dollars	352	439	550	651	733
Constant International Dollars	854	1064	1333	1577	1778
GNI Per Capita Growth (%)	4.3	6.4	5.2	4.4	3.6
Old-Age Dependency Ratio	5.8	4.9	4.8	4.9	5.2
Youth Dependency Ratio	81.9	75.1	75.1	73.5	71.0
Urban Population (% of Total Population)	16.1	16.9	16.9	17.0	17.1
Inflation Rate	4.2	9.8	7.8	5.3	7.7
Terms of Trade (Index)	94	133	184	172	178
Domestic Credit to Private Sector/GDP	10.62	12.03	13.51	19.88	20.93

Source: World Development Indicators (World Bank); Ministry of Finance (Republic of Rwanda)



3.3. Financial Sector Growth and Saving Propensities

As noted earlier, financial sector developments have resulted in the increased financialization of savings – though the increase has been modest (Figure 4). The expected link to saving and investment seems to have rested on two related and relatively common assumptions:

(1) A significant proportion of private fixed-capital investment is financed by the financial sector through external borrowing by firms (particularly bank borrowing);

(2) Increased financialization of saving, by increasing the availability (and, perhaps reducing the cost) of credit, would lead to higher investment rates (and, by implication, higher measured saving rates) as firms increased external borrowing.

The second assumption rests largely on the first, and the first assumption is often not true even for advanced economies with sophisticated financial systems and typically very far from the truth in developing economies (Cull *et al*, 2005). Rwanda is not an exception. As Table 8 indicates, only a small proportion of formal sector firms used bank or near-bank borrowing to finance investment in 2005 and 2010, and such borrowing accounted for an even smaller proportion of the overall financing for capital investments (across that sample of firms). As one would guess, this was even more true of informal sector firms. The overwhelming majority of firms, from large enterprises to micro-enterprises, used retained earnings to finance investment and that form of finance accounted for at least two-thirds of investment finance in both 2005 and 2010 (Table 8).

Though we do not have a more recent Enterprise Survey to determine whether this pattern persisted, we do have an Integrated Business Enterprise Survey from 2016. This survey unfortunately does not indicate the sources of financing specific to fixed capital investments (as the Enterprise Surveys do), but it does indicate the sources of finance for all activities (in terms of the proportion accounted for by each source) from 2012 to 2016 (Table 9).[13] The survey results indicate that equity capital accounted for more than half of firms' financing over the five-year period and retained earnings was the second most important source. Between them, these two sources accounted for more than 70% of total financing for domestic firms in each of the five

[13] This means that the Business Enterprise Survey results include financing for working capital and other firm activity besides fixed investment.

years examined. Financing from the financial sector was increasing but, as late as 2016, it only accounted for 13.1% of total financing. The lesser importance of financial sector financing was even more acute with respect to start-up financing (Table 10). In 2016, whereas 91% of firms used equity for (at least part of) start-up capital, the most common source of financial sector financing was short-term bank loans, but that source of financing was only accessed by 10% of firms.

Table 8: Financing Sources for Investment in Formal Sector Enterprises

Type of Funding	% of Firms using that source of funding		Average % of total funding covered by that source	
	2010	2005	2010	2005
	Non-micro Enterprises			
Retained earnings	85.3	92.0	69.3	65.7
Owner's contributions or new equity	15.5	0.0	7.3	0.0
Bank Borrowing	31.9	30.2	18.2	14.3
Non-bank Financial Institutions	0.9	2.4	0.4	1.5
Supplier Credit	9.5	54.5	3.5	15.1
Money lenders, friends or relatives	3.5	12.7	1.0	3.0
	Micro Enterprises			
Retained earnings	95.6	88.3	78.8	78.3
Owner's contributions or new equity	4.4	0.0	3.1	0.0
Bank Borrowing	8.9	7.8	5.2	5.0
Non-bank Financial Institutions	2.2	9.4	0.2	6.6
Supplier Credit	15.6	30.5	8.7	4.6
Money lenders, friends or relatives	11.1	10.9	4.0	5.5

Source: Enterprise Surveys 2006 and 2011 (National Institute of Statistics, Rwanda)

What does this all mean for saving? First, it means that because most investment is self-financed, most private saving comes from the investing firms themselves. Secondly, because there is so little borrowing for investment, the increased financialization of saving had little impact on investment (which means little of it would have registered as part of gross domestic saving – in line with what has been observed). Thirdly, and perhaps most importantly, because investors (firms) are also the dominant savers in Rwanda, it is very likely that it is the motivation to "invest" rather than the motivation to "save" that drives their actions.[14] Put differently, it is firms'

[14] The assertion that firms are the dominant savers is indicated, but not precisely measured, by the survey results. The true extent of corporate saving, relative to other forms of saving, could have also been determined from

decisions to invest that motivate the retention of earnings (or use of owner equity) rather than the availability of owners' investible resources *per se*.

Table 9: Distribution of Enterprises by used source of financing from 2012 to 2016

Financial source	2012	2013	2014	2015	2016
Equity capital	54.5	54.8	54.1	53.0	52.4
Retained earning	21.5	21.3	21.2	21.7	21.8
Financial Sector financing	11.1	11	12.3	12.7	13.1
Bank overdraft	*2.9*	*3.3*	*3.5*	*3.2*	*3.5*
Credit card	*0.2*	*0.2*	*0.3*	*0.3*	*0.2*
Subsidized bank loan	*0.1*	*0.3*	*0.2*	*0.3*	*0.4*
Short term bank loan	*5.5*	*5.0*	*5.9*	*6.2*	*6.4*
Long term bank loan	*1.9*	*1.7*	*1.9*	*2.1*	*2.0*
Microfinance loan	*0.5*	*0.5*	*0.5*	*0.6*	*0.6*
Trade credit	1.4	1.5	1.6	1.6	1.5
Hire-purchase agreements (leasing)	0.5	0.3	0.3	0.4	0.3
Sales of assets	0.3	0.4	0.6	0.6	0.9
Shareholders and related enterprises	4.6	4.6	4.1	4.2	4.2
Friends or family	6.1	6.4	5.9	6.0	5.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Rwanda National Institute of Statistics, Integrated Business and Enterprise Survey (2016) (Table 2.2.3.36)

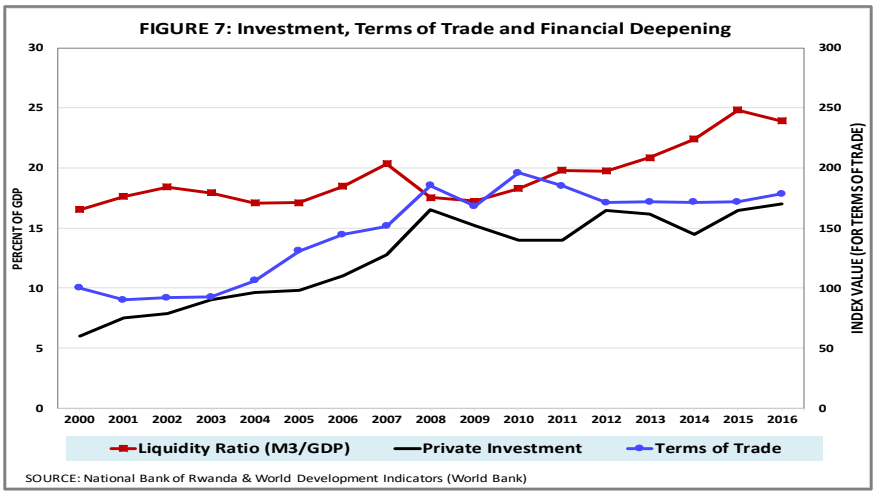
Table 10: Use of Start-up Finance across Types of Finance

Financial source	Yes	No	Total
Equity capital	91.0	9.0	100.0
Bank overdraft	4.0	96.0	100.0
Credit card	0.0	100.0	100.0
Subsidized bank loan	0.0	100.0	100.0
Short term bank loan	10.0	90.0	100.0
Long term bank loan	4.0	96.0	100.0
Microfinance loan	1.0	99.0	100.0
Trade credit	2.0	98.0	100.0
Hire-purchase agreements (leasing)	0.0	100.0	100.0
Retained earning	4.0	96.0	100.0
Sales of assets	0.0	100.0	100.0
Shareholders and related enterprises	7.0	93.0	100.0
Friends or family	10.0	90.0	100.0

Source: Rwanda National Institute of Statistics, Integrated Business and Enterprise Survey (2016) (Table 3.1.3.35)

balance of payments accounts if it was measured using the income method. However, Rwanda does not, as yet, publish income-based balance of payments accounts.

Besides the inference that can be made from the dominance of self-financed investment, this thesis of "investment driven saving" finds support in the data. Figure 7 presents the evolution of three measures from 2000 to 2016 (financial depth, investment and the terms of trade). It is evident that the evolution of investment has no clear association with financial depth. However, the evolution of investment closely corresponds with the evolution of the terms of trade. We have already noted that the terms of trade index is a strong determinant of domestic saving, so it would come as no surprise that the terms of trade is also closely related to investment. The issue is whether the terms of trade influences investment through its effect on saving decisions; whether it influences saving through its effects on the investment decisions of self-financing firms; or whether it influences the saving and investment decisions equally and simultaneously. Table 11 suggests that it is private investment that is most closely related to the terms of trade. T-test of the proposition that the variables evolve together (the differences between representative indices is roughly constant) cannot reject that proposition for private investment and the terms of trade but does reject that proposition for private saving and the terms of trade.[15]



[15] This result does not contradict the statistical association shown between the terms of trade and saving in Table 6. The two results together simply mean saving rates and the terms of trade are strongly related but do not strictly co-evolve (as investment and the terms of trade clearly do).

Table 11: T-Test of the Terms of Trade Association

Variable Pairs	Test Statistic (T-Test)	Decision on Null Hypothesis (Ho: The mean difference between the variable indices is constant)
Investment and Terms of Trade	1.0998 (0.2877)	Cannot Reject
Gross Domestic Saving and	2.2162 (0.0415)	Reject (at 5% level of significance)

Figures in brackets are tail probabilities for the T-statistic

4. The Diagnosis and the Paths Forward

From the above discussion we can make the following conclusions with respect to Rwanda's saving performance since 2000.

(i) After rising continuously from 2000 to 2007, Rwanda's saving rate has stagnated and remained below the average of its regional and global peers because the terms of trade improvement that had underpinned the growth in saving propensities stalled after 2008.

(ii) Rwanda's saving rate is particularly vulnerable to terms of trade movements because saving decisions remain closely tied to investment decisions. Though it is investment that is most sensitive to terms of trade movements, because of the dominance of self-finance, ability to invest (from own resources) largely determine how much is saved.

(iii) The financialization of saving, which has been the dominant focus of saving mobilization efforts so far, has not managed to change that dynamic because it has not managed to significantly increase the rate of external financing for investment (by firms).

(iv) Low government saving has also been part of the story of low gross domestic saving. However, it is not the dominant explanation and has, in fact, improved over time from very negative to near zero.

(v) It is very likely that an expanding and increasingly sophisticated financial sector, along with capital account liberalization, has had a dampening effect on saving rates by making available attractive (low-risk, high return) financial instruments to potential

investors (firms and potential start-ups) that are more attractive than purchases of fixed capital while not substantively increasing financing for investment (because not much of increased financial saving makes its way into investment).

Given Rwanda's level of development and economic structure, it is not altogether surprising that its investment rate is dependent on terms of trade movements. The economy is still strongly dependent on two primary commodities (tea and coffee), so the fortunes of these commodities (which play a large part in determining the terms of trade) still shape the outlook for the economy and, therefore, investment decisions. This is not unlike the situation faced by Mauritius in the 1970s when the fortunes of the sugar industry dictated saving and investment decisions (Appendix 3). Like Mauritius, if Rwanda is to engineer a permanent increase in its saving rate it will have to free itself from the tyranny of the terms of trade. Two strategies are available, but they should be thought of as complementary rather than competing. These strategies are diversification and increased intermediation.

Diversification – As long as the economy is dependent on the export of a small number of primary commodities, the international prices of these commodities (as reflected in the terms of trade) will always have a strong impact on the economy and the country's economic outlook. A more diversified economy would mean less dependence on the prices (and production) of a narrow range of commodities and, therefore, on the terms of trade.[16] However, this structural change, though important, can only be accomplished in the medium to long term. Rwanda's efforts to expand its economy in areas such as tourism, information, transportation, manufacturing etc. will help in that regard. These efforts should gain (and be given) increased impetus from the knowledge that such structural changes can make the country's saving (and investment) behaviour more autonomous. The Mauritius experience indicates that quite a lot can be accomplished within a decade (or, perhaps, less).

[16] The terms of trade will matter less both because it will be less sensitive to the price movements for any single export commodity and because it will provide less information about the country's economic prospects (since it will be determined by a wider range of factors).

Increased Intermediation – Given the current importance of the terms of trade for investment decisions in Rwanda, it would have been difficult, under any circumstances, to completely detach saving decisions from terms of trade movements. However, as we have pointed out above, that link is stronger than it needs to be because savers and investors are too often the same persons (because of the importance of self-finance). If savers and investors are different entities, investment need not be constrained by the saving capacity of investors (who are mostly existing firms whose fortunes are attached, directly or indirectly, to the dominant export sectors). Also, separation of investor and saver (increased intermediation) means that there is a greater chance that investment decisions will be made (and acted upon) by new actors who are not as tied to the existing economic structure as the firms in legacy industries are. (This would also mean that structural change would be more rapid). We turn to the issue of intermediation next.

5. Redefining Saving Mobilization to Emphasize Intermediation

Recognizing the need for an internal capacity to generate rapid growth, the government of Rwanda implemented programs aimed at increasing domestic saving mobilization as early as 2006. These programs have been successful, at the very least, in shifting resources into the financial sector (both formal and informal sectors) – as indicated by increasing financial depth. However, complete savings mobilization involves two activities: saving (setting current resources aside) and intermediation (directing these resources to investing units).[17] What has been missing heretofore has been the full consideration of *intermediation,* and its implication for policy and program development. This appears to be an error of omission (rather than commission) and it is neither new nor surprising. Unfortunately, much of economic and finance theory (and practice) rests on the presumption that intermediation is a natural (and invariably efficient) process, unique to the financial sector, that leads, inexorably, from saving to investment. This is not the case.

[17] The fact that we use the term savings mobilization (rather than simply savings or saving) is telling here. Mobilization is meant to refer not simply to the movement of resources from savers to financial units but also from financial units to investors.

The saving of economic units, once set aside by that unit (household, corporation or government), is always saving from the perspective of that unit. However, country-level saving (whether we are talking about gross domestic saving or gross national saving) is not simply the sum of all the non-negative saving of households, corporations and government. It is the sum of all positive saving *minus* the dissaving (negative saving) of economic units. Thus, gross domestic saving, for example, is that part of income that is not consumed by economic units (from domestically-sourced income) *and* used to finance investment. It *does not include* the income that is not consumed by one group of economic units but used to finance the non-investment activity of other units. Put differently, the saving-investment identity, at the country level, means that the saving of households, corporations and government add to country-level saving *only* when that saving contributes to investment (at home or abroad).

Saving generates investment in two ways. When saving is used directly by the saver to produce new fixed capital (as occurs with the use of retained earning by firms to finance the purchases of new machinery and equipment). In this case, the saver and investor are identical and the generation of investment from saving is direct and assured. Such saving will automatically be part of country-level saving measures. However, savers and investors are often not the same and it is left to institutions of intermediation (banks, near-banks, equity providers etc.) to transfer saving from savers to investors. However, these institutions also serve borrowers who require loans for purposes other than adding to fixed capital. These alternative purposes include consumption, working capital, purchases of real assets (such as land and existing building), liquidation of assets (disinvestment), and funding government consumption expenditure. This competition for saving means that the intermediation process is an imperfect one in terms of generating capital formation. Not all of what is "saved" by individual economic units will be used to add to fixed capital (or inventories). That which is used to finance the consumption of other economic units or for working capital will not generate investment and will, therefore, not be part of a country's measured annual flow of saving.[18] Intermediation, therefore, is highly imperfect in its generation

[18] This does not mean that financial saving that does not go toward investment is wholly 'lost.' Some uses of financial saving, such as working capital, serve important functions in terms of increasing productive efficiency and capacity utilization.

of investment and, because of the (ex poste) saving-investment identity, country-level saving as well.

Thus, it is distinctly possible for many households and firms to choose to save more by increasing saving deposits and purchasing other financial instruments, and yet have no net impact on the country's private or gross domestic saving rate (as has clearly occurred in Rwanda). This is because there is no guarantee that this increased saving will be directed to fixed capital (or inventory) investment – which is what ultimately determines measured country-level saving. Thus, unless intermediation is specifically targeted and directed, as part of savings mobilization efforts, there is no guarantee that higher saving propensities at the individual or household level will lead to higher country-level saving rates. In short, the effectiveness and quality of intermediation matters. This is as least one of the lessons that can be learnt from our three case studies – Mauritius, Singapore and South Korea (see Appendices 3, 4 and 5).

6. Lessons from Saving and Growth Successes – Mauritius, Singapore and South Korea

Mauritius, South Korea and Singapore (the latter two are part of the Asian Tiger group of countries) are examples of countries that have achieved remarkable levels of development from modest beginnings through rapid growth generated by high investment rates that were underpinned by high domestic saving rates (in conjunction with foreign resource inflows). However, as the case studies show, for Singapore and South Korea, at the dawn of their rapid development phase, domestic saving was virtually zero and for Mauritius it had dipped to 10% in 1980. Yet all three countries achieved rapid growth in domestic saving rates and, once high rates were achieved, sustained these rates for very long periods. In the case of Singapore and South Korea these rates have been sustained to the present (53% for Singapore and 37% for South Korea in 2017) and for Mauritius until the early 2000s.[19] What are the immediate lessons that Rwanda can learn from the experiences described in the case studies?

[19] For Mauritius, domestic saving rates fell below 20% in 2005 and have been closer to 10% in recent years.

(i) The domestic saving rate can increase under conditions of shallow finance (South Korea), deep finance (Singapore) and deepening finance (Mauritius). The nature of the financial sector provides opportunities (and constrains) for saving mobilization, but whether opportunities can be taken advantage of (and constraints bypassed) depends on *how* saving is intermediated between saver and investor. Partly because of these differing conditions, saving was intermediated differently in the three countries.

(ii) Several agents in the economy can engage in intermediation between savers and investors. These include: individuals (through instruments such as loans from family members); private non-financial firms (through instruments such as supplier credit); financial institutions (through a range of financial instruments from deposits and loans to stock certificates); and government (through such instruments such as taxes, bonds and public lending). At any time, all of these forms of intermediation are taking place. However, the proportion of the intermediation load carried by these economic units will vary across countries and over time (within the same country). The optimal mix will depend on the country's institutional and economic structure, stage of development (including financial development), and broader approach to development.

(iii) In an economy trying to generate rapid growth, making higher (and more productive) investment a policy objective is meaningful *only* if saving and intermediation are viewed in the same light, and as part of a continuum (saving→intermediation→investment). Saving cannot be detached as a separate concern.

(iv) In an environment where rapid growth is the ultimate objective, governments can: create the context that allows domestic savers and investors to take advantage of opportunities created by the global economy (Mauritius); proactively motivate voluntary saving and ensure (by largely directing the intermediation process) that sufficient quantities are used for capital formation (South Korea); or commandeer saving directly through a mix of compulsory and public saving (Singapore). Regardless of the approach, *proactive government participation is not optional.*

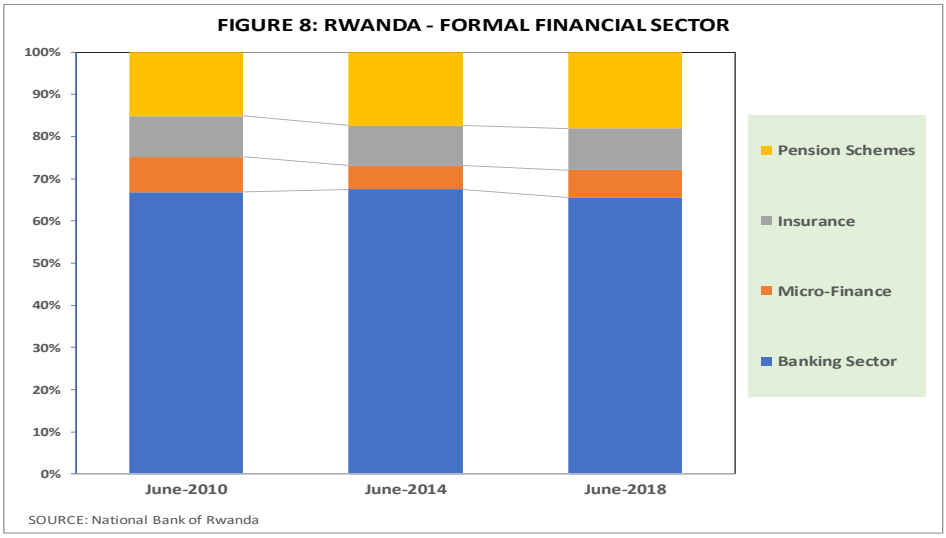
(v) In all three countries, government saving has been a big part of the saving story. In Mauritius and South Korea, the jump from low or modest private saving rates to high private (and gross domestic) saving rates coincided with increases in government saving rates. In the case of Singapore, government saving rates had always been high and provided a platform that underpinned private saving.

(vi) In Mauritius and South Korea, the policies aimed at encouraging saving involved not only making financial saving more attractive but also making non-productive alternatives (land, buildings and luxury goods) less attractive.[20]

7. Rwanda's Financial Sector – a Partial Inventory

7.1. The Formal Financial Sector

Rwanda's formal financial sector has grown in both size and sophistication in recent years. The total assets of the financial sector rose from 32% of GDP in mid-2010 to 53% in mid-2018.[21] Nevertheless, though the assets of all sub-sectors have increased, the financial system is still dominated by the banking sector which accounted for 65.5% of financial sector's assets in 2018 - only a slight drop from the 66.9% it accounted for in 2010 (Figure 8). The remaining 34.5% (in



[20] This is not to suggest that land and buildings cannot be an important part of investment. What is meant here is that they distract from more productive saving and investment when they are used as "stores of value" (sometimes speculative) rather than as factors of production.

[21] Asset data come from the National Bank of Rwanda and GDP estimates come from the National Institute of Statistics (for the 2010 and 2014 values) and the IMF (for the 2018 estimate).

2018) was accounted for by various types of Non-Bank Financial Institutions (NBFIs). That sector covers: pension schemes (dominated by the Rwanda Social Security Board) which account for 18.1% of assets; insurers who account for 9.8%; and the microfinance sector (473 overall, 416 of which are the Umurenge SACCOs) that account for the remaining 6.6% (NBR, 2018). The Business Development Fund (BDF) (a subsidiary of the Development Bank) can also be considered part of the financial sector. Additionally, on the edge of that system, are several private and public institutions; two of these are Rwanda's sovereign wealth fund, the Agaciro Development Fund (AGDF) and the Rwanda National Investment Trust (which manages the RNIT Iterambere Fund).

As mentioned earlier, the formal financial sector has registered significant successes in recent years, but these successes have not been reflected in the domestic saving performance. In some cases, missing markets (or missing institutions) have made it difficult to translate increased financial saving into increased investment financing. In other cases, the mandates of portfolio managers do not necessarily motivate the kinds of investment choices that have a high probability of impacting fixed capital formation and, by implication, gross domestic investment (and gross domestic saving). More broadly, the continued dominance of the commercial banking sector means that investment financing will be constrained if the commercial banking sector is unable to increase its investment lending substantively.

A large part of the reason why commercial banks do not typically finance fixed capital formation derives from the fact that they do not typically offer longer-term loans (loans greater than two years and preferably beyond five years). If commercial banks were to offer such loans, to avoid maturity risk, they would have to offer long-term time deposits to their customers. As the National Bank of Rwanda indicates, they are making no effort to do so:

> Despite the improved growth of term deposits, a large composition of term deposits remain short-term. As of June 2018, around 98.5 percent of total term deposits had a maturity of maximum 1 year. Shortage of long-term resources therefore remains a hinderance for long-term lending and long-term investments NBR, 2018, p46).

In order to address this problem, the Government of Rwanda has introduced incentives in the revised Income Tax Law (by waiving the 15% withholding tax on term deposits with at least 1-year maturity). However, though commendable, this incentive works to encourage deposit holders but does little to encourage banks to actively sell those deposits by offering attractive rates of return on these deposits. This consultant is not aware of the precise regulatory framework around the different types of bank deposits but, if this is not already the case, it would help if banks were given more lending flexibility with respect to their long-term deposit base (relative to shorter-term deposits), such as allowing a higher loan-to-deposit ratio on long-term deposits than short-term deposits.

While the formal financial sector can be considered crucial to domestic saving and investment, there are activities and institutions outside the financial sector that are also important for saving, intermediation and investment as well. One of these is the ability and willingness of firms to facilitate capital investments (and productive activity more broadly) by providing trade/supplier credit to client firms. As was observed earlier, supplier credit (or trade credit) remains low as a source of overall financing for established firms (Tables 9), as part of start-up financing (Table 10), and declined as a source of investment financing between 2005 and 2010 (Table 8). In the context of underdeveloped or developing financial systems, trade/supplier credit can be one of the cheapest and most easily accessible sources of financing for small and medium-sized enterprises that often have difficulty accessing cheap credit.

To encourage greater and more productive use of that source of financing it may be necessary to incentivize supplier credit by rewarding those firms who supply such credit (typically larger and more established ones). One way to do so is to allow these firms to include the implicit cost (the interest income that would have been gained had a loan of similar value, to the trade/supplier credit advanced, been made at the market lending rate) in their operating costs for income tax purposes. This would amount to reducing the cost of providing such credit for the firms while still allowing firms to continue to benefit from the non-pecuniary benefits of this instrument (loyalty, market creation etc.).

Recommendations (Section 7.1)

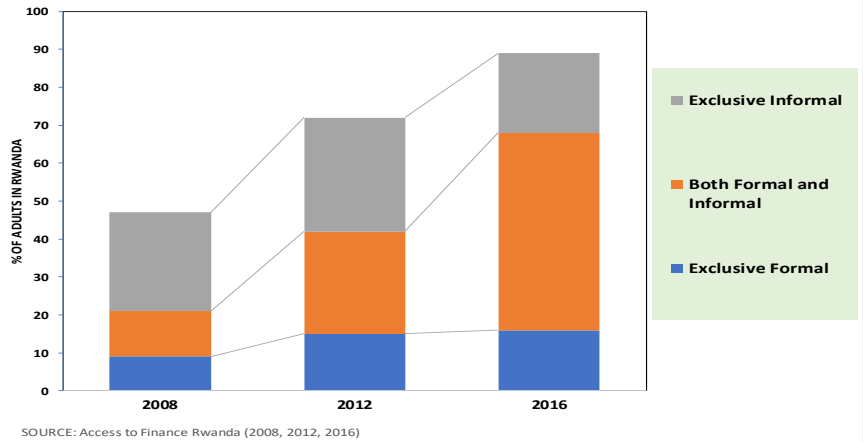
Incentivize banks to sell long-term time deposits in order to encourage longer-term lending – Current initiatives work to encourage customers to hold long-term time deposits but offer no incentive to banks to, more aggressively, offer such deposits. Banks might have such an incentive if such deposits were treated differently (in terms of lending options) by the regulatory authority (the National Bank of Rwanda).

Provide incentives for large firms to offer trade/supplier credit to client firms – Allow firms to include the implicit cost of offering trade/supplier credit (to their customers) in their operating costs for tax purposes (thus making such credit cheaper without changing its nature or making it more difficult to extend).

7.2. The Informal Financial Sector

Despite the development and expansion of the formal financial sector (particularly NBFIs), the informal financial sector remains the most common setting for financial saving and investment activity in Rwanda. According to Access to Finance Rwanda (2016), as of 2016, 72% of adults in Rwanda made use of informal financial instruments (compared to 68% for the formal financial sector). In terms of saving, 56% of adults used informal instruments to save and nearly half of these (27% of adults) used informal saving instruments exclusively. In terms of accessing credit, 61% used informal mechanisms to do so (compared to only 13% for NBFIs and only 4% for banks).

FIGURE 9: USE OF FINANCIAL INSTRUMENTS IN RWANDA



SOURCE: Access to Finance Rwanda (2008, 2012, 2016)

The informal financial sector in Rwanda is made up of a range of institutions. They include NGO-motivated organizations such as village savings and loan associations (VSLAs) and savings and internal lending communities (SILS), traditional schemes such as tontines and ikimina, more

recent local innovations such as credit shops and work-based saving and loan associations, and the informal financial activity of formal or semi-formal non-financial institutions (such as lending by agricultural buyers' organizations).

However, formal and informal finance are neither mutually exclusive nor unconnected. More than half of informal savers in 2016, for example, also saved in formal financial institutions such as SACCOs. This was less true for lending because, of the 61% of adults who accessed informal credit in 2016, 84% (or 51% of adults) did so in the informal sector exclusively (Access to Finance Rwanda, 2016).

The common presumption is that, as a country develops the formal financial sector will grow and more saving and investment activity will move from informal finance to formal finance. This may perhaps be true over the long run, but in the short to medium term that is unlikely to be the case. Firstly, the formal financial sector faces very real hurdles in meeting the needs of large sections of developing country populations, especially the poorer and less educated parts of the population. These hurdles include high transaction costs, large information asymmetries and the preference for small quantities and personalized transactions (as well as flexibility) by those populations. Moreover, as the data shows, in terms of financial inclusion, the fastest growing group is not those who access formal financial instruments exclusively but those who access both formal and informal instruments simultaneously (Access to Finance Rwanda, 2016 and Figure 9). This means that any saving mobilization program must acknowledge and accommodate informal sector activity.

As the examples from Ghana and Tanzania in Appendix 6 indicates, linking formal and informal finance (or incorporating informal financial approaches into formal finance) is distinctly possible but the method of linkage will need to vary by type of informal institution. In the Tanzanian case, informal institutions similar to Rwanda's VSLAs and SILS were linked to a regional commercial bank through the use of community-based trainers (CBTs) for training and the development of relevant groups, and the creation of banking agents (BAs) for providing access to banking facilities. In the first Ghanaian case, the tontine-like groups (rotating credit and saving

associations or ROSCAs) were linked to three types of formal financial institutions (a formal savings and loan company, a commercial bank, and a rural bank). In common, they all offered group savings accounts with the possibility of group lending and, in turn, required evidence of a functioning system of governance on the part of the group. They also maintained regular contact between groups and bank officials and offered group members the possibility (or requirement) of opening individual accounts. However, beyond these common features, the requirements and costs for lending and other banking services varied by institution. In the case of *susu* collectors (for which there are no equivalents in Rwanda, though credit shops may share some of the functions) the link was made in very different ways. In one case, the formal financial institutions simply instrumentalized the informal institutions for its own purposes (by offering them substantial loan facilities (for onlending to their clients) in exchange for deposit commitments). In the other case, the formal financial institution created a formalized version of the informal institution that was integrated into the banks structure, thus maximizing access to the bank's resources as well as absorbing all the risk.

Several lessons can be drawn, in terms of the requirements, means, benefits and challenges of linking formal and informal institutions.

- Formal-informal links can be made between various types of informal institutions and various types of formal financial institutions (including banks and non-bank financial institutions). Compatibility is not singular.
- Except in cases where formal financial institutions created formalized versions that were embedded into their operating frameworks, successful linking will always require the provision of financial education for informal sector participants, and especially the leadership of such institutions.
- Successful linkage requires ongoing and regular communication (and sometimes training) between linked formal and informal institutions in order to safeguard and reinforce the linkage process.

- The strongest incentive for linkage, on the part of informal institutions appears to be access to loan facilities. The ability of formal institutions to offer easier access to more and longer-term loans, even at relatively high cost, appeared to be very important to informal sector participants.
- The most immediate benefit to formal sector institutions appear to be increases in deposits and new lending opportunities (with high loan-repayment rates) but the long-term may bring even greater benefits in terms of the growth of their client base.
- Formal financial institutions may choose to incorporate and formalize the methodologies of informal financial institutions *within* their corporate models as one option.
- In all the examples presented, even after successful linkages, trust between the members of informal financial institutions and formal financial institutions remain a challenge.

Despite the clear advantages to be gained from linkages it is unlikely that formal institutions in Rwanda will initiate these linkages on their own. There will need to be some proactive development of linkage models and pilot-program implementation of those models to demonstrate their feasibility. As far as formal sector institutions go, SACCOs are the most likely candidate for linkages because of the higher level of trust that they enjoy with the general population. We will take this up in more detail below.

Though there is much to be gained from engendering links between formal and informal institutions, some semi-formal institutions, such as the workplace savings and loans associations, may need a great deal less to be more productively integrated into the formal financial system. Many of these organizations are formalized in terms of governance and internal financial procedures and could be quite easily incorporated into the formal financial system with some technical assistance and the creation of an appropriate legal framework (as was done for umurenge SACCOs) – perhaps as a joint venture between the Rwanda Cooperative Agency and the National Bank of Rwanda. Importantly, a framework needs to be provided for diversification of the end use of the substantial deposits mobilized by these institutions, beyond commercial

bank deposits (setting aside internal loans). An apex institution in the form of a national cooperative bank can help in that regard (and we also take this up in more detail below).

Another institution that straddles the informal and formal financial sectors is the investment club. These are groups of individuals, often with common interests outside finance (such as members of a football club), who come together to plan and invest collectively in certain financial instruments (Times Reporter, 2011). In the current context of low domestic saving, this phenomenon is encouraging and needs to be fostered. However, as Rwanda's financial system is currently constructed, there is a dearth of financial instruments (bonds, commercial paper, debentures and stocks in particular) that lend themselves easily to this approach to investment. This has been suggested as one of the reasons for the high demand for, and oversubscription of, the latest government bond offerings. While it is unlikely that stock market activity will increase sufficiently rapidly to meet the demand for stock certificates, the bond (and debentures) and commercial paper markets can be expanded quite rapidly if more institutions, public and private, are allowed to issue those instruments. This may be one of the most immediate means of harnessing latent saving potential in the short term. This issue too, will be taken up below.

Recommendations (Section 7.2)

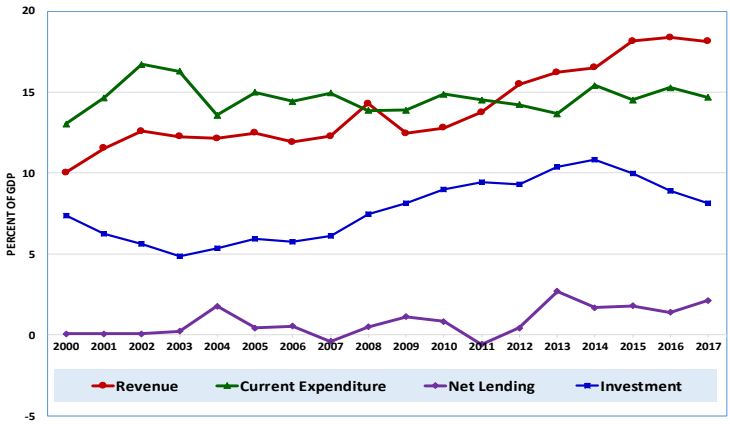
Assistance and regulation for workplace savings and loan cooperatives – Create a framework for providing technical assistance for workplace savings and loan cooperatives (and similar institutions), providing a regulatory framework for these institutions, and formalizing and standardizing of their operations.

8. Government, Saving and Intermediation

We observed earlier that a common feature of the rapid growth in domestic saving in both South Korea and Mauritius (as well as many other countries) was growth in government saving. At present, the growth trajectory of Rwanda's government saving has stalled at, essentially, zero. If domestic saving is to grow it will almost certainly need to be underpinned by growth in government saving. However, such growth should not occur by reducing government spending. In fact, such an approach is likely to be counterproductive through its deleterious effect on

growth as well as human development (Rwanda is still a Least Developed Country). What is needed, is a rate of growth in government consumption that is slower than or equal to the rate of growth in income, and a rate of growth in revenue that is greater than the rate of growth in national income. As Figure 10 shows, Rwanda is broadly on that path. Current expenditure has been, roughly, flat (relative to output) since 2000; while revenue has been increasing since 2010. A more pronounced increase in the revenue to income ratio (through improvements in the tax structure and effort) would be helpful.

FIGURE 10: Profile of Government Budgetary Activity



SOURCE: MINECOFIN & NISR (Republic of Rwanda)

Government contributes to the intermediation between savers and investors in three important ways. Firstly, when government finances investment it uses a combination of its own resources (public saving) and the resources of private economic units (private saving) to finance that investment. The greater the contribution of public saving (the saving of government and government-owned firms) to its investments the less the need to access private saving, and thus the smaller the potential crowding out effect of government borrowing.[22]

Secondly, government can also intermediate between involuntary savers (tax payers or social insurance or provident fund contributors) and investors by lending to private and state-owned firms from its own resources (or that derived from compulsory saving). This type of government activity played a critical role in the development of all of the three countries examined in the case

[22] However, if private saving propensities are low or government investment motivates private investment, the use of private saving for government investment can, in fact, increase overall saving and investment.

studies, and particularly so for South Korea and Singapore. Governments used this facility to support critical institutions (from development banks to new-technology firms) and fill perceived gaps or limitations in the private financial system by providing credit to critical but credit-starved sectors. In Singapore, for example, net lending (government lending minus government borrowing) has sometimes exceeded 20% of GDP. According to Figure 10, the government of Rwanda has engaged in substantial amounts of lending since 2013. However, how productive and effective this activity is will depend on whether that lending has been going toward building new areas of strength in the economy or simply covering the losses of moribund state-owned enterprises.[23]

The third form of intermediation that can be engaged in by the government sector comes through its ownership and control of financial institutions. Though the financial sector in Rwanda is largely private, the Government of Rwanda does have ownership of the Development Bank of Rwanda as well as (indirect) ownership interest in a commercial bank (Bank of Kigali). As the examples of Singapore and South Korea (and, to a lesser extent, Mauritius) show – in early-stage economic development there are certain to be areas of the economy that remain grossly underserviced by private finance. These include the rural sector (especially agriculture), small and medium enterprises, start-ups, ventures in new sectors etc. The presence of financial institutions that can take the long view and try to overcome the information problems, technical challenges, and missing market conditions that bedevil these areas can be critical in ensuring necessary structural change, technology acquisition and diffusion, and a high rate of saving and investment. As we will demonstrate later, there is a need in Rwanda for additions to the existing group of public or semi-public financial institutions. These need not be wholly financed by the government budget or by the Central Bank (and we suggest otherwise), but they need the proactive involvement of the government.

As the case study examples also show, beyond direct involvement in intermediation, governments have a critical role to play in the creation of institutions (financial and quasi-financial institutions, pension schemes etc.); development of the legal framework for the

[23] Details on the precise destinations of these loans have been difficult to obtain.

operation of financial institutions and markets (rules for the operation of capital markets, insurance and bankruptcy laws etc.); the regulation of financial institutions and markets; and the development and deployment of incentives and disincentives to prod potential savers to the most productive forms of saving (and investment). These roles are relevant to all stages of development but are even more critical (and require more proactive involvement) in the early stages of development (Rwanda's current position) because of the greater range of coordination problems that are likely to arise; and the limited capacity of the private sector (or civil society) to develop second best solutions in the short or medium term.

In the later sections of this report we will outline recommendations for action relating to specific programs and/or institutions. However, a broader concern that will not be touched upon later is the incentives for saving generally. Though Rwandans may not engage in a great deal of financial saving there is some indication that real assets (land and pre-existing building) are favoured means of storing wealth. However, as noted earlier, these forms of saving do not contribute to investment and may simply lead to inflation in real assets. Government can help to shift preferences toward more productive forms of saving by making the return on these assets less attractive. High capital gains taxes on land sales and house sales (except for primary residences and business premises) would be one way of reducing saving in real assets. If this is matched with low taxes on income from financial instruments and new fixed capital it may encourage a significant shift in saving preferences. Higher tariffs on ultra luxury goods may also nudge residents away from more consumption and toward more saving.

Recommendations (Section 8)

Government Saving – Government should commit to achieving positive and increasing saving in at least the medium term by increasing revenues and keeping increases in government consumption at or below the rate of increase in output.

Shift preferences away from real assets and toward financial assets and fixed capital – Make investment in real assets less attractive by increasing taxes on capital gains from the sale of such assets (except for primary residences and business premises) while reducing the tax rate on income from financial assets (interest income, dividends etc.) as well as new fixed-capital investments.

Encourage saving over the import of high-end luxury consumption – Ensure that the costs of importing high-end luxury goods reflect the opportunity cost from lost domestic saving.

9. Building on Existing Initiatives

9.1. Umurenge SACCOs

9.1.1. General Analysis

The Umurenge Savings and Credit Cooperatives (SACCOs) are a group of credit cooperatives developed specifically to address the problem of limited access to (and use of) formal finance in Rwanda (particularly in rural areas). There are 416 of these cooperatives (one for each administrative sector – umurenge – in Rwanda) with more than 3 million members and deposits valued in excess of RWF 66 Billion by mid-2018 (The New Times, 2018). These were one of the initiatives under the National Savings Mobilization Strategy and has been, broadly, an outstanding success (Alliance for Financial Inclusion, 2014).

Umurenge SACCOs, fittingly, have been given a large amount of the credit for the rapid increase in financial inclusion in Rwanda. Of the 86% of Rwandan adults who saved in 2016, 27% saved in a Umurenge SACCO. Moreover, Umurenge SACCOs were the most trusted formal financial institution with 57% of adults indicating that they trusted SACCOs with their saving compared to only 27% for banks (Access to Finance Rwanda, 2016). Encouragingly, Umurenge SACCOs, as a group, are profitable, though not spectacularly so, amassing total profits of RWF 1.9 billion ($2.2 million) in the first half of 2018 (NBR, 2018).

In terms of the provision of access to credit, however, Umurenge SACCOs have been less successful. Though 27% of savers in Rwanda used Umurenge SACCOs in 2016, that same year only 6% of those who had obtained credit received it from Umurenge SACCOs (Access to Finance Rwanda, 2016). In fact, in June 2018, for microfinance institutions in general (of which Umurenge SACCOs constitute a majority), outstanding loans represented only 50.5% of the total assets of these institutions while cash in vault and deposits in banks represented 40% of total assets (NBR, 2018). (Banks, by comparison had a loan to asset ratio of 58% and this ratio is, itself, not high by general banking standards). What these figures indicate is that Umurenge SACCOs are not aggressive lenders even though the agricultural sector, which dominates the countryside where most Umurenge SACCOs are located, is starved of credit (NBR, 2018). Part of that reluctance to lend, of course, is likely to be related to perceived vulnerability. The loan portfolios of individual Umurenge SACCOs located in the countryside (the majority) is likely to be highly concentrated in agriculture-related lending and, therefore, extremely sensitive to weather, agricultural product prices, and other highly capricious factors related to agriculture. Indeed, the National Bank of Rwanda does confirm that the proportion of non-performing loans in the Umurenge SACCOs' loan portfolios increases

with poor agricultural outcomes and natural disasters and improves with good outcomes (NBR, 2018). A conservative approach to lending is a very typical banking response to a perception of high risk (Agénor *et al,* 2004). Moreover, given that commercial banks account for only a very modest amount of financing for capital formation and are generally poor lenders to agriculture (NBR, 2018), the placing of Umurenge SACCO deposits in commercial banks amounts to a transfer of resources from the agricultural sector to other sectors in the economy (and, potentially, from fixed-capital investment lending to other lending).[24]

9.1.2. Suggestions Going Forward

The weak lending performance of Umurenge SACCOs suggest that two gaps exist in the institutional framework surrounding these microfinance units: an institution for risk pooling and diversification, and an institution for the provision of adequate financing for agriculture. The first challenge can be solved by a **National Cooperative Bank** (presumed name "Rwanda Cooperative Bank") owned and operated on behalf of Umurenge SACCOs.[25] Such an institution can "mop" up the excess liquidity of the individual units, provide various forms of insurance and expertise for individual SACCOs, and engage in lending and other investments that can serve the purpose of portfolio diversification as well as ensuring reasonable returns on assets. However, the purpose of risk reduction (for Umurenge SACCOs) would not be served if that institution specialized in making (or insuring) loans to its client base in agriculture (though it could, of course, do some of that). The country, and the agricultural sector, would be better served with an **Agricultural Bank** (see Appendix 7) that can both provide specialist skills as well as greater financial viability by procuring its financing from both within and outside the agricultural sector (meaning other sources in addition to Umurenge SACCOs). Such an institution could use Umurenge SACCOs both for onlending its credit to farmers and for evaluating factors, such as creditworthiness, where the local institutions have a comparative advantage. Providing loan guarantees for agricultural loans by Umurenge SACCOs would also be an important function performed by such an institution since that would help reduce the Umurenge SACCOs' reluctance to lend.

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[24] There is no attempt to suggest here that commercial bank lending is not a critical part of economic activity. Commercial banks are the main providers of working capital and perform important functions in portfolio diversification. However, long-term financing and financing for capital formation has never been a primary concern of commercial banks based on the Anglo-Saxon model and Rwanda's banks are not exceptions in that regard.

[25] This is not an original idea. The creation of such an institution has been planned for some time.

In discussing the potential for linkages between formal and informal institutions above, we noted that, in both the Tanzanian and Ghanaian examples, trust in formal financial institutions remains an ongoing challenge. Given that the FinScope study of 2016 found that Umurenge SACCOs are by far the most trusted formal financial institutions (for both saving and borrowing), these institutions would seem to be the natural candidates for creating links between the formal and informal sector (Access to Finance Rwanda, 2016). However, we also saw, from the examples, that successful linkages require both an initial and ongoing commitment of significant human and technical resources (for training and maintenance of linkages), but Umurenge SACCOs themselves appear to face challenges in that regard (The New Times, 2018) and some of them may simply not be large enough to undertake these initiatives on their own. Nevertheless, this should not deter attempts at creating links between Umurenge SACCOs and VSLAs, SILCs and tontines. Such an enterprise will need to be managed and resourced by an organization (or organizations) that has (have) the requisite technical expertise and human resources. The Rwanda Cooperatives Agency (working with the National Bank of Rwanda) would seem to be the best placed agency for *creating and implementing the templates* for these links based on the examples provided (from Tanzania and Ghana).

Recommendations (Section 9.1)

National Cooperative Bank – Create an apex institution for Umurenge SACCOs, to help in risk pooling and diversification, insurance, and technical assistance.

An Agricultural bank – Create a banking institution that can specialize in wholesale banking to the rural sector, facilitate better (and more) retail banking by Umurenge SACCOs and other institutions, and provide technical assistance to agriculture and related industries.

Linkages to Informal Institutions – Rwanda Cooperatives Agency and National Bank of Rwanda should develop and execute templates for linking Umurenge SACCOs with VSLAs, SILCs and tontines.

9.2. The Capital Markets Authority and the Rwanda Stock Exchange

9.2.1. General Analysis

The Capital Markets Authority (CMA), established in 2007, is charged with the development, regulation and facilitation of capital markets in Rwanda. Thus far, the CMA has overseen the development of the Rwanda Stock Exchange, the initiation and development of a bond market and occasional sales of commercial paper. As we note below, the sale of equity instruments will develop, but that development is likely to be modest, at best. The likely growth areas for the capital markets are the bond market and the commercial paper markets. Thus far, bond sales have been largely limited to government issues and commercial paper sales have been only occasional (East African, 2017. October 16).

Launched in 2011, the Rwanda Stock Exchange remains very small. The Exchange reports only eight listed companies, four of which are non-local companies that are cross-listed with other stock markets. Under the supervision of the Capital Markets Authority, the Stock Exchange also facilitates the sale of bonds and that market has been more active. The Stock Exchange has been proactive in trying to bring in small and medium sized enterprises (SMEs) into the equities market by trying to develop an SME platform that would allow some of these enterprises, which meet certain criteria, to sell equity participation to investors. The Stock Exchange has also engaged with investment clubs (groups of persons with interest in purchasing financial instruments) by providing education and information.

While these efforts are commendable, it is unlikely that the market for equities will be a substantive avenue for financing fixed capital formation in Rwanda for some time. This has more to do with Rwanda's level of development than any failing of the financial system. The information and technical requirements for public listing are high, and the number of firms who find it advantageous to bear this cost in return for cheaper access to credit tends to be small in small low-income economies. However, there are some immediate contributions that the Stock Exchange can make in the present economic context and its continued development should be part of the general development of the financial system.

9.2.2. Suggestions Going Forward

The interest of the Stock Exchange in small and medium enterprises is a recognition that this group of firms are often starved of financing and, therefore, access to equity financing could be a useful way to increase both the options for, and the degree of, access to finance. However, an SME platform, at best, would benefit only a very small number of firms. A better way of providing access to equity financing for small and medium sized enterprises would be to encourage the development of **Small-Business Investment Companies.** These companies would be large enough and have the necessary sophistication to sell debentures to the public, or equity participation to partners, or even go public. Any of these approaches would allow them to obtain sufficient wherewithal to offer equity participation or loans to small firms. The great advantage of such firms (if they are sufficiently large) is that they can bear the cost, in terms of accounting and information requirements, of obtaining credit through the sale of securities or public equity participation and, in turn, they can pass on that advantage to small and medium sized enterprises through equity participation in such firms, as well as other forms of financing.

These companies can be developed in different ways. Since these are typically profit-making institutions they can be privately owned. However, given that they do not currently exist in Rwanda, it may be necessary for at least one to be initially established by the government (independently or jointly with a private financial institution) to establish the viability of that institutional model in Rwanda. The government may then offer licences to those who may wish to develop such companies but, like the United States, maintain control of financing (by organizing and sponsoring the sale of debentures) to reduce downstream costs to small businesses (see Appendix 7). One of the mandates of any government-owned SBIC should be the financing of small-scale but important greenfield projects that would typically have been too small for consideration by the Development Bank.

Perhaps the most important advantage of SBICs is that their lending does not need to be financed by the government (or their private owners, if they are private). Their activities can be financed by the sale of debentures to the private sector (which would include financial institutions, investment funds, investment clubs etc.). There is already strong evidence of a ready market for

these instruments. Appendix 7 describes the strategic use of these companies by the United States Government.

If many of the suggestions made here (for financing financial institutions) are taken up, bond/debenture market activity will be enhanced. But intermediation can be further enhanced by the development of a commercial paper market. Though commercial paper is not typically used to finance investment (it is more typically used to finance working capital and other short-term needs) the development of that market may have two important effects that may ultimately be good for saving.

- Commercial paper may be an attractive complement, as well as an alternative, to bonds and debentures in the portfolios of those who are interested in these types of debt instruments. It may therefore help to partly satisfy and, in the process, sustain the strong demand for these types of instruments that is seen in the oversubscription of bond issues.
- An active commercial paper market will provide large firms with another (and likely cheaper) way of raising short-term capital and thus compete with short-term bank financing. That competition may encourage banks to give more consideration to longer-term financing – an area of intermediation in which they are currently weak (NBR, 2018).

However, though commercial paper has been traded in Rwanda – indicating that the legal and basic institutional infrastructure already exist for such a market – the market probably needs a great deal more human capital and promotion to continue to develop. A greater number of intermediaries (brokers and financial institutions) that are both skilled and knowledgeable is likely to be necessary to generate a more active market. This is an area in which increased and proactive promotion by the Rwanda Capital Markets Authority would be helpful.

The Stock Exchange devotes some resources to interacting with and providing information and financial education to investment groups (semi-formal institutions). This should be both continued and enhanced. The existence of investment groups indicates a strong latent potential for increases in saving through the purchase of financial instruments other than bank deposits. The development of bond, debentures and commercial paper markets will help meet some of that pent-up demand and this will likely, in turn, increase the savings mobilized though these institutions. The financial education (and training) is likely to have the effect of both encouraging these groups and making them better able to participate fully in those markets.

Recommendations (Section 9.2)

Small Business Investment Companies – Develop the legislative and institutional framework for Small Business Investment Companies (SBICs) that can utilize debenture financing to provide both equity and loan financing to small businesses. Consider creating a government-owned company as a demonstration of the viability of the model, also as a path to financing strategically important small-firm start-ups.

Commercial Paper market – Make further attempts to generate an active commercial paper market to meet some of the overflow demand from the bond market and to provide some competition for short-term bank credit.

Investment Clubs – Continue to provide support, education and encouragement to investment clubs. They may be substantial and vital contributors to increased saving.

9.3. The Development Bank of Rwanda

9.3.1. General Analysis

The Development Bank of Rwanda fills a particular niche in the broader financial sector and in Rwanda's development program. The Development Bank specializes in financing relatively large greenfield projects across a range of sectors and provides advising services in addition to long-term, low-cost, financing to its clients. It also works with other financial institutions (such as SACCOs) to provide financing for particular programs. Presently, the bank is funded through its share capital, provided by the Government of Rwanda; and medium and long-term loans, mostly for international financial institutions. The Bank currently faces a maturity mismatch between its financing and loan portfolios – the latter having, on average, a longer term.

9.3.2. Suggestions Going Forward

Both the quantity and nature of funding available to the Development Bank of Rwanda need to be revised. There are many more projects that meet the Bank's criteria for funding than the bank has the capacity to fund. One of many options, would be increased financing from the government (funded by the sale of government bonds). However, a better option would be the sale of bonds and debentures by the Bank itself (perhaps with government guarantees initially to lower the cost of finance). However, the Bank's current structure does not appear to allow that option. This is an issue that needs to be addressed in the short term (by adjusting the Bank's legal prerogatives). There are several advantages to such a change:

(i) By being able to generate its own financing the Development Bank will be able to match its financing capacity to the demand for its services and reduce its dependence on external support.

(ii) The Development Bank will be better able to match the maturity of its financing and loan portfolios.

(iii) The sale of debt securities by the bank will generate new instruments that can be purchased by Investment Funds, investment clubs, SACCOs and even commercial banks – facilitating a transfer of saving from savers to investment units without any direct effect on the government debt.

The specialization of the Development Bank on greenfield projects has left an institutional vacuum in terms of a lending institution that can back long-term financing for the capital investment of existing firms. With the right incentives commercial banks could be persuaded to take up some of that slack, but it is unlikely that they will be able to meet all prospective needs. The ability of the Development Bank to cover this section of the market for credit, particularly in strategically vital areas (relating of Rwanda's development program) would be helpful.

Recommendations (Section 9.3)

Change the method of financing the Development Bank – Change the Bank's charter to allow it to sell debt securities to finance its loans. This will address both Bank underfinancing and its maturity mismatch problem, as well as attracting savings from other institutions that have a weaker record of financing long-term investment.

Broaden the lending mandate for the Development Bank – allow the bank to finance non-greenfield projects that are strategically important (in terms of the country's development).

9.4. The Business Development Fund

9.4.1. General Analysis

Rwanda's Business Development Fund (BDF) is a subsidiary of the Development Bank of Rwanda and specializes in the provision of credit guarantees for small and medium enterprises in order to allow them to access credit from commercial banks, microfinance institutions etc. The BDF has an equity of RWF 13.4 billion that it uses, in addition to income from its activities, to finance its credit guarantees. By mandate, the BDF focuses its efforts on the support of vulnerable groups.

With respect to its current (limited) mandate and financing, the BDF makes an excellent contribution to the financing of SME and, therefore, increasing saving and investment. However, that limited mandate (a focus on vulnerable groups), and limited financing, means that a large section of the SME community remains unserved. Also, additional services, such as financial advice, market research and support, and SME incubation services are not provided.

9.4.2. Suggestions Going Forward

In facilitating the provision of credit to SMEs by banks and other financial institutions, the BDF is performing a critical role in enhancing the intermediation process. It is enhancing the movement of savings from institutions (particularly banks) that, traditionally, have a poor record of financing small and medium enterprises (especially their fixed investments). That function should and can be enhanced in several ways:

- The mandate of the BDF should be expanded beyond vulnerable groups to cover all SMEs that can use the BDFs services.

- An expanded mandate can be accommodated only with increased funding. As it is currently constructed, the BDF does not have the capacity to obtain its own financing. There are three ways in which that restriction can be overcome:
    - The BDF can be provided with additional finance by its parent, the Development Bank, if the Development Bank obtains the capacity (as recommended) to finance itself;
    - The BDF can be given the capacity to raise its own financing through the sale of bonds and debentures;
    - The BDF can be restructured as a public company that is able to obtain equity financing.
- The BDF should include the provision of incubation services (accounting, market research etc.) as part of what it offers to SMEs.

Recommendations (Section 9.4)

Enlarge the mandate of the BDF – Enlarge the mandate of the BDF to allow it to assist a wider range of small businesses than its current mandate allows.

Increase the financial resources available to the BDF – in line with the enlarged mandate, the BDF should have access to increased financing. This financing should come either from its parent company (if it is better able to finance itself) or directly for from the sale of debt securities (for which it should be given that capacity if necessary).

9.5. The Social Security Fund and Other Large Investment Funds

9.5.1. General Analysis

As Table 12 below indicates, between them, the Rwanda Social Security Board, the Agaciro Development Fund and the Rwanda National Investment Trust manage an extremely large pool of resources. The distribution of assets across various types of investments suggests that bank deposits and government securities make up the largest share of invested assets, followed by equity and then real estate. All these funds have had modest or healthy rates of return on

investment, but it can be argued that any influence that they have had on domestic saving is marginal at best.

Given Rwanda's level of development and its saving and investment rates, it can be argued that the country is starved of investment credit. Moreover, given this condition of capital scarcity, one should expect the rate of return on domestic fixed capital investments to be high. Yet the investment profile of these funds has no bias toward domestic capital formation. Bank deposits make up the largest percentage of these funds' assets, but we do know from earlier analysis that, as of 2010, commercial banks were responsible for financing less than 20% of investment in fixed assets (Table 8) and, as of 2016, only 12.5% of total firm financing (Table 9). Real estate investments do not add a great deal to capital formation, unless it is directed at new construction – we have no indication that this is the case for these funds. Equity investment can directly support capital formation (if it consists of the purchase of new issues), however, given Rwanda's very shallow stock market (there are only four listed local firms) equity holdings almost certainly consists of mostly foreign equity instruments. Government securities is the one group of assets, that one can argue, possibly contributes to investment (government investment) – and perhaps contribute to gross domestic saving through that route. (This might not have been the case if government saving was negative, but since government saving is, essentially, zero, all long-term borrowing can be considered borrowing for investment from the private sector).

Table 12: Major Fund Holdings

Fund	Approximate value of assets in RWF (2018)	Approximate Distribution of Assets
Social Security Fund	750 billion	13% Real estate 36% Equity 27% Bank deposits 13% Government Securities 11% Other instruments and securities
Agaciro Development Fund	51.5 billion	70% Bank deposits and Government Securities 30% Equity (stocks)
RNIT Iterambere Fund	2.5 billion	70% Bank deposits and Government Securities 30% Equity (stocks)

Sources: NBR (2018); Taarifa (2018)

9.5.2. Suggestions Going Forward

Though prudential concerns need to remain central to the operation of these funds, there must be some attention paid to the distribution of assets to ensure, as much as possible, that investment choices have a positive impact on capital formation. In defense of the Investment Funds, however, the range of local instruments for investment are limited. Nevertheless, over time, effort needs to be made to increase the range of potential domestic financial assets in these portfolios and, most importantly, these need to be instruments that have a high probability of financing capital formation. If some of the suggestions made above are implemented, new instruments such as bond and debentures from the Development Bank (and possibly the BDF) and Small Business Investment Companies, and deposits and equity in the new Agricultural Bank and National Cooperative Bank will provide opportunities for portfolio diversification that also have an impact on capital formation – and influence domestic saving more directly.

In the short term there is one area in which these funds can have an impact. Given their size, these funds have significant leverage in negotiating both the terms and rates of return on bank deposits. That leverage can be used to encourage banks to engage in more long-term lending by insisting on longer-term time deposits (more than two years and preferably more than five), thus creating maturity mismatches that may have the effect of encouraging banks to engage in more long-term lending - an area of intermediation that is poorly served in Rwanda (NBR, 2018). Notably, however, this would have to be supported by clearly articulated government policy and, perhaps, additional government action as mentioned above.

Recommendations (Section 9.5)

More Specific Mandates for Investment Funds – Funds should be given specific mandates to support domestic investment by devoting a minimum proportion of their portfolios to domestic financial instruments that have a high probability of financing domestic fixed capital formation. The requirement should be modest at first, to reflect the current limitation in the range of domestic instruments, but it should be increased as the range and quantity of domestic instruments increase.

9.6. The Rwanda Personal Pension Scheme

9.6.1. General Analysis

The Rwanda Personal Pension Scheme is not an established scheme but one that is in the process of being rolled out. It is a voluntary pension scheme that has, as two of its main objectives:

- To include Rwanda's large informal sector in a long-term and retirement saving program;
- To increase the domestic (and financial) saving rate by encouraging more Rwandans, at all income levels, to engage in more consistent saving behavior.

Retirement saving is not new to Rwanda, the country has had a social security scheme for a very long time, but that program has been confined to the formal sector, which employs only a small fraction of Rwanda's working population.

There are many attributes that are commendable about this scheme. These include the fact that:

- The prescribed contributions and the nature of matching government contributions vary across income (Ubudehe) categories. Thus, low-income workers are required to contribute less but receive more in matching government contributions;
- These personal pension schemes may be activated at (and contributions made at) a wide range of financial institutions (including microfinance institutions);
- Subscribers can choose both the amount and frequency of their contributions (above certain minimums);
- Subscribers can use a portion of their contributions as collateral for loans (including mortgages) if they have a good payment record.

There are, however, attributes that seem problematic from the perspective of attracting and retaining participants in the scheme.

- The strict limits on withdrawal from retirement savings before 60 seems counterproductive. Even if additional incentives for saving for children's education are included in the scheme (as is anticipated but not included in the initial proposition), the ability to "borrow" from the scheme (within limits) for the payment of school fees should

be included in the scheme with or without those additions. The fact that education is one of the country's most important forms of investments should not be lost sight of. Moreover, the ability to implicitly use this facility to save for future children's education would likely be one of its greatest attractions.

- Beyond payment of school fees, it is very likely that low-income participants, who are credit constrained, will encounter challenges during their lives that could be alleviated by access to credit. This can easily be accommodated by allowing participants to "borrow" from their retirement fund up to a certain limit (in terms of frequency and amount). Distinct from retirement-age withdrawal, such borrowing would have to be repaid over an agreed time period. Adding this advantage will allow the scheme to meet precautionary savings needs as well as asset accumulation needs – making it attractive to a wider range of potential clients.[26]
- The inclusion of a 5% index to the scheme seems perplexing. In the first instance this presupposes that inflation will never exceed 5 percent. This seems an overly optimistic (and unnecessary) assumption at this stage in Rwanda's development. Secondly, if inflation is below 5%, it is doubtful that wages will grow at 5%. In that context, the 5% index would amount to increasing the contribution amount relative to real wages. It seems both simpler and less problematic to index the contributions to inflation.
- The proposed format and structure for investing the scheme's funds seem both perplexing and counterproductive. Choosing private fund managers introduces two immediate problems: (1) In a low-financial-literacy society it is a tall order to expect scheme participants to be able to choose fund managers based on any reasonable criteria; (2) This introduces variability in rates of return that, from the point of view of scheme participants, will seem quite arbitrary (a matter or luck). While the record may suggest that private pension managers do better than public pension funds (Vitttas,

[26] To reduce the risk of nonrepayment borrowing should be allowed only from own contributions and government contributions held in escrow until repayment. Borrow should be limited to a few clearly defined emergencies.

1996), in the Rwandan context, rates of return on investment should be secondary to certainty (for clients) and domestic investment requirements (for the country).

9.6.2. Suggestions Going Forward

The suggestions above are meant to make the scheme more viable and efficacious but, in the view of this consultant, do not bear critically on the effectiveness of the scheme as a tool for increasing domestic saving. The aspect of the scheme that speaks most directly to that issue is the proposed formula for investing the funds resources. The use of private fund managers goes even further down the path earlier discussed, with respect to the large Investment Funds. Such an arrangement is unlikely to be as attractive as it might appear to be (in the context of Rwanda) nor does it have good implications for intermediation.

Firstly, I would submit that the low-income clients of this scheme are more likely to be comforted by a fixed (and, therefore, assured) rate of return that guarantees them a predictable amount of accumulated saving at retirement than the prospect of potentially high but uncertain rates of return. The scheme can choose, instead, to set such a return relative to a specific interest rate as Singapore has done (such as the average return on one-year time deposits). This would, of course, require a government guarantee. However, doing so also creates a poor incentive structure for private fund managers – suggesting that this approach would best be implemented by a public investment fund arrangement.

Secondly, the objective of private fund managers will be to secure the best rate of return within a particular risk profile. In that regard, the distribution of assets in investment portfolios – across real assets (land and buildings), fixed capital, financial instruments, government bonds and foreign assets – will have to do with prudential concerns and will be unrelated to the impact on domestic capital formation. Thus, there is no reason to believe that such an arrangement would necessarily lead to increased financing for domestic investment and, therefore, an appreciable effect on the domestic saving rate. If one of the main objectives of the Pension Scheme is to increase the domestic saving rate (along with the provision of future pension support for informal

sector workers) more attention needs to be paid to how the resources provided by the scheme are intermediated within the economy.

If the resources generated by the Pension Scheme are to have a maximum impact on capital formation, a preference for investments that have a high probability of generating fixed capital formation must be part of the mandate of the fund and accommodated by the chosen institutional arrangements. The simplest arrangement would be to create a single agency to manage the schemes' resources (or assign it to an existing one like the Rwanda National Investment Trust). Such an agency should be mandated to invest certain proportions of these resources in domestic institutions and instruments that have a high probability of financing domestic capital formation (perhaps starting at a moderate proportion and increasing over time as more instruments become available). This may include government bonds, if those bonds are highly likely to finance government investment, or to finance agencies that are mandated to support domestic investment (such as the Development Bank, the Agricultural Bank, the National Cooperative Bank, Small Business Investment Companies etc.

The suggestions for modification to the scheme are therefore:

(i) Add a facility for education saving and borrowing for education;

(ii) Allow limited borrowing from the scheme for emergencies;

(iii) Index payments to inflation but no more;

(iv) Fix and guarantee the rate of return on contributions;

(v) Use a single fund-management approach rather than multiple privately managed funds;

(vi) Place mandates on the investment choices for the fund to ensure that a substantial amount of the saving mobilized will indeed be used to finance domestic capital formation.

Recommendations (Section 9.6)

Modify the current design of the Personal Pension Scheme to:

- Allow for borrowing for education and emergencies;
- Fix the rate of return on contributions;
- Index contributions to inflation and no more;
- Us a single-fund management approach to avoid incentive incompatibility;
- Impose mandates concerning a minimum level of financing of domestic capital formation from fund resources.

10. The Road Map

The efficacity of the recommendations above are not dependent on a particular sequencing. We therefore do not consider it useful to specify interventions in terms of specific dates going forward. The urgency of expected results, the amount of fiscal and policy space, the timing of the expected results, the availability of required expertise, and the net impact of the intervention should be the main determinants of the timing of policy interventions. In terms of the institutional aspects, two issues are notable and need to be emphasized:

- Most actions will require the contribution of more than one institution and it will be important that these institutions agree on the objective, the respective actions to be taken and the timing of such action;
- For almost all interventions the government (and we presume that to mean, in most cases, the Ministry of Finance) will be involved at some level. This should come as no surprise. The government is the main coordinating institution in the economy as well as the one with the greatest capacity to change laws, rules, regulation etc. In the context of engendering rapid growth (a central objective of Rwanda's development plans) that role is magnified because rapid growth demands quick correction of bottlenecks and coordination failures rather than allowing these to resolve themselves over time.

Table 13 below describes the suggested actions coming out of this report, the agencies involved, the timing of said action, the expected speed of results, the expected costs (in categorical terms), and the complexity in terms of human resource requirements.

Table 13A: Assessment of Timing, Results, Costs and Complexity of Proposed Actions

Initiative	Implementing Agency	Timing	Speed of Results	Costs	Complexity
Increasing the Government saving rate	Government of Rwanda (MINECOFIN)	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Creating incentives for greater use of trade/supplier credit	Government of Rwanda (MINECOFIN and other agencies)	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Creating incentives for long-term lending by commercial banks	Government of Rwanda National Bank of Rwanda Social Security Board Agaciro Development Fund National Development Trust	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Creating tax incentives and disincentives to shift preferences away from saving in real assets (and high-end luxury consumption) and toward financial saving and fixed capital investments	Government of Rwanda National Bank of Rwanda Commercial Banks Rwanda Cooperative Agency NBFIs	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)

Table 13B: Assessment of Timing, Results, Costs and Complexity of Proposed Actions

Initiative	Implementing Agency	Timing	Speed of Results	Costs	Complexity
Developing and implementing templates for linking Umurenge SACCOs with informal financial institutions	Government of Rwanda (MINECOFIN) National Bank of Rwanda Rwanda Cooperatives Agency Umurenge SACCOs	Immediately (Within 1-3 years)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Creating a National Cooperative Bank for Umurenge SACCOs and workplace savings and loan cooperatives	Government of Rwanda (MINECOFIN) National Bank of Rwanda Rwanda Cooperatives Agency Umurenge SACCOs	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Setting up an Agricultural Bank	Government of Rwanda (MINECOFIN) National Bank of Rwanda	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Developing the institutional and legal framework for Small Business Investment Companies	Government of Rwanda (MINECOFIN and other agencies) Capital Markets Authority	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)

Table 13C: Assessment of Timing, Results, Costs and Complexity of Proposed Actions

Initiative	Implementing Agency	Timing	Speed of Results	Costs	Complexity
Further development of the commercial paper market	Capital Markets Authority Government of Rwanda (MINECOFIN) National Bank of Rwanda	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Encouraging and providing assistance to investment clubs	Capital Markets Authority Rwanda Stock Exchange Government of Rwanda (MINECOFIN)	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Providing technical assistance, a regulatory framework, and standardization for workplace savings and loan cooperatives	Rwanda Cooperative Agency Government of Rwanda (MINECOFIN) National Bank of Rwanda	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Expanding the charter of the Development Bank to allow it to self-finance	Government of Rwanda (MINECOFIN and other agencies) National Bank of Rwanda Capital Markets Authority Development Bank of Rwanda	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)

Table 13D: Assessment of Timing, Results, Costs and Complexity of Proposed Actions

Initiative	Implementing Agency	Timing	Speed of Results	Costs	Complexity
Broaden the mandate and the financial capacity of the Business Development Fund (BDF)	Government of Rwanda (MINECOFIN and other agencies) National Bank of Rwanda Capital Markets Authority Development Bank of Rwanda Business Development Fund	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Develop more specific mandates for the major investment funds (with respect to investment in domestic assets). • Social Security Fund • Agaciro Development Fund • FNIT Iterambere Fund	Government of Rwanda (MINECOFIN with other agencies) National Bank of Rwanda Capital Markets Authority	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)
Modify the design of the Personal Pension Scheme	Government of Rwanda (MINECOFIN) National Bank of Rwanda	Immediately (Within a year)	Rapid (Immediate Results)	Low Costs	Simple (Requires little expertise)
		Short –term (Within 1-3 years)	Moderate (Within 2 years)	Moderate Costs	Moderately Complex (Requires some expertise)
		Long Term (Beyond 3 years)	Slow (Over 2 years)	High Costs	Very Complex (Requires much expertise)

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Appendix 1: Measures of Saving

A1.1. Gross National Saving

Gross national saving (GNS) is typically derived and subdivided as follows:

$$GNDI = C + I + G + CA = C + I + G + NT_P + NT_G + NFIA + EX - IM$$

$$GNS = GNDI - C - G \ = I + CA$$

$$GNS = (GNDI - C - NT_G - T) + (T + NT_G - G) = I + CA$$

$$GNS = S_P + S_G = I - S_F$$

$$I = S_P + S_G + S_F$$

Where:

GNDI = Gross National Disposable Income
C = Private Consumption (consumption of all units except government)
I = Gross Domestic Investment
G = Government Consumption Spending (current expenditure excluding interest payments)
CA = Current Account Balance
NT_P = Net Transfers from Abroad (Private Grants and remittances)
NT_G = Net Transfers from Abroad (Government Grants)
NFIA = Net Factor Income from Abroad
EX = Exports
IM = Imports
GNS = Gross National Saving
T = Government Revenue (net of grants) from the public sector accounts
S_P = Private Saving
S_G = Government Saving
S_F = Foreign Saving

A1.2. Gross Domestic Saving

Gross domestic saving (GDS) is typically derived as follows:

$$GDP = C + I + G + EX - IM$$

$$GDS = GDP - C - G \ = I + EX - IM \ = I + TB$$

Though the concepts of public (or government) saving and private saving (as typically measured) are components of gross national saving, domestic saving versions of these measures can be derived. These are not in general use in the saving literature but, where the measure of interest is gross domestic saving,

the "domestic saving versions" of these measures can allow for the assignment of saving to the public and private sector *within* the definition of domestic saving.

$$GDS = (GDP - C - T) + (T - G)$$

$$GDS = S_P^d + S_G^d$$

$$GDS = S_P^d + S_G^d = I + TB$$

$$I = S_P^d + S_G^d - TB$$

Where:

GDP	= Gross Domestic Product	S_P^d	= Private Portion of Domestic Saving[27]
TB	= Trade Balance	S_G^d	= Government Saving Portion of Domestic Saving

The relationship between the two measures of private and government saving can be derived as follows:

$$GDS = (GNDI - NT - NFIA) - C - G = GNS - NT - NFIA$$

$$GDS = (GNDI - NT_G - C - T - NT_P - NFIA) + (T + NT_G - G - NT_G)$$

$$GDS = S_P - NT_P - NFIA + S_G - NT_G$$

$$S_P^d = S_P - NT_P - NFIA$$

$$S_G^d = S_G - NT_G$$

[27] In the case of Rwanda, the saving of public sector firms is included in private saving measures rather than added to government saving to make up public saving. Thus "private" saving, as measured, is not strictly private and government saving is not equivalent to public saving.

Appendix 2: Panel Saving Equation Estimates

Table A2: Additional Saving Equation Specification for Ten East and Southern African Countries

Explanatory Variables	Gross Domestic Saving	Private Domestic Saving		
	With Financial Depth	With Financial Depth	Without Per Capita Income	Without Youth Dependency Ratio
Lagged private domestic saving rate		0.292*** (4.37)	0.292*** (4.55)	0.347*** (5.28)
Lagged gross domestic saving rate	0.428*** (5.42)			
Government saving rate	-0.73 (-0.61)	-0.913*** (-7.35)	-0.916*** (-7.85)	-0.822*** (-6.57)
Per capita income growth (lagged)	0.190 (1.43	0.198 (1.50)	0.220* (1.86)	0.189 (1.43)
Per capita income (000s of $PPP)	0.493 (0.48)	0.952 (0.94)		-0.454 (-0.48)
Youth dependency ratio	0.267* (1.83)	0.353** (2.56)	0.280*** (2.75)	
Old age dependency ratio	-1.615 (-1.12)	-2.177 (-1.62)	-1.106 (-1.53)	-0.189 (-0.17)
Urban population (%)	0.466* (1.82)	0.582** (2.37)	0.513** (2.23)	0.411* (1.67)
Terms of trade	0.071*** (3.75)	0.087*** (4.78)	0.097*** (5.69)	0.085*** (4.59)
Inflation rate (lagged)	-0.024 (-0.54)	-0.023 (-0.52)	-0.013 (-0.31)	-0.019 (-0.43)
Private sector credit			0.023 (0.30)	-0.046 (-0.44)
Financial Depth (M3/GDP)	-0.082 (-1.04)	-0.078 (-1.01)		

Source: Author's calculations using World Development Indicators (World Bank) and African Statistical Yearbook (ECA)
Figures in brackets are z-statistics. *, **, *** indicate 10%, 5%, and 1% significance levels respectively.

Appendix 3: Mauritius

A3.1. Introduction

When Mauritius became independent in 1968 it was still, largely, a single-product economy – dependent on sugar exports. That single-sector dependence meant that saving, investment and growth were almost solely determined by the fortunes of the sugar industry. Beginning in the 1970s, Mauritius instituted an export-oriented strategy largely based on the export of textiles and the expansion of tourism. Both schemes paid huge dividends in the 1980s, when the tourism sector took off, and Mauritius became the favoured destination of Hong Kong textile producers seeking to hedge against the unknowns of the pending Chinese takeover of the colony. The result was a largely growth-induced, but permanent, increase in saving and investment propensities that propelled Mauritius into a virtuous cycle of growth that would last until the 2000s.

A3.2. Industrial Policy

Even before its independence (in 1968), Mauritius had recognized the vulnerability (and limited income growth potential) that came from its nearly exclusive reliance on sugar exports. Following the recommendations of a committee, taxed with plotting a viable economic development program for the island, (the 1961 Mead Report) Mauritius instigated a scheme for import-substituting industrialization (ISI) called the Industrial Development Scheme. The scheme was implemented through the issuance of "development certificates" which gave firms the right to: apply for protection from foreign competition, obtain duty free imports of capital goods (for three years) and apply for exemptions from duties on imported raw materials (Wellisz & Saw, 1993). These certificates were distributed across a wide range of industries, from food processing to the production of plastics and paint. Whatever successes may have been scored by the ISI scheme, in terms of diversification, it did not have a significant impact on employment rates. Throughout the 1960s and into the 1970s Mauritius continued to suffer from high unemployment rates (YeungLamko, 1998). Wellisz & Saw (1993) argue, in fact, that part of the reason for the low employment impact was the capital-intensive nature of production in the import-substituting

industries – incentivized by the low relative cost of capital that resulted from of the removal of import duties.

Mauritius sought to move into first-phase export-oriented industrialization (EOI) with the promulgation of the Export Processing Zone (EPZ) Act of 1970. Industries located in the export-processing zone (and producing solely for export) were offered a range of incentives including:

- Exemption from import duties on machinery, equipment and raw materials;
- A ten-year exemption from the payment of income tax on dividends and profits;
- Subsidized, fully serviced, factory buildings;

In the early 1970s, the number of establishments and workers in the export processing zones grew quite briskly (Table M1). Though these new establishments were typically launched with significant amounts of foreign involvement and financing, nearly 50% of the investment capital came from the profits of the booming sugar industry (Wellisz & Saw, 1993). Mauritius was an attractive location, due to its well-developed infrastructure from its years as a transhipment hub during the colonial period; while for textile manufacturers, it offered access to the European market through the Yaoundé II convention until 1974 and the Lomé convention from 1975 onward. However, though the number of EPZ firms and employees continued to grow through the latter half of the 1970s the pace of growth slowed (Table M1).

Table M1: Evolution of the Export Processing and Tourism Industries

Average Annual Quantities	1972-75	1976-79	1980-83	1984-87	1988-91
Number of new (EPZ) establishments	22.5	7	13	96	-1
Number of new (EPZ) employees	2,691	2,334	1,196	12,131	2,001
Number of tourist arrivals (000s)	66	108	120	165	274
Number of tourist nights (000s)	677	1,090	1,365	1,882	3,365

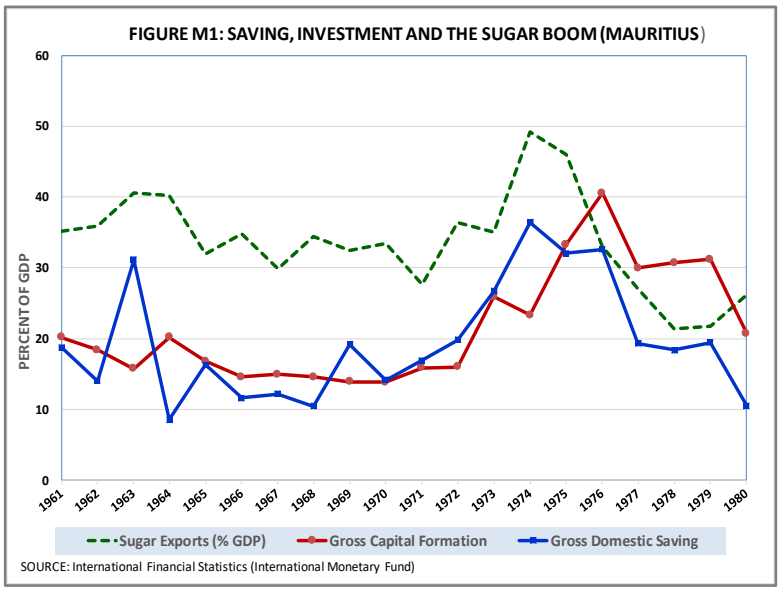
Source: YeungLamko (1998)

Tourism had been expanding from the pre-independence era, but the industry received both formal acknowledgement of its importance and a boost in incentives when the EPZ zone advantages were extended to tourist establishments (Wellisz & Saw, 1993). Given its relatively well-developed infrastructure, the island's comparative advantage as a tourist destination could

be realized almost immediately. Average annual tourist arrivals and stay-overs increased continuously from 1972 to 1991 (Table M1).

A3.3. Boom and Bust

In the 1970s, the immediate post-independence ear, Mauritius's efforts at diversification were in their infancy. A prime example of this is the sugar boom and bust of that period. A rise in sugar prices in the early 1970s, and the rise in export output and income that resulted, caused the gross domestic saving rate to increase from below 20% of GDP to above 30% (Figure S1). The rate of investment rose as well. However, as export income fell (due to a fall in both sugar prices and output) the saving rate returned to previous levels and, in 1980, fell to 10% of GDP as the island suffered the effects of cyclones and floods.

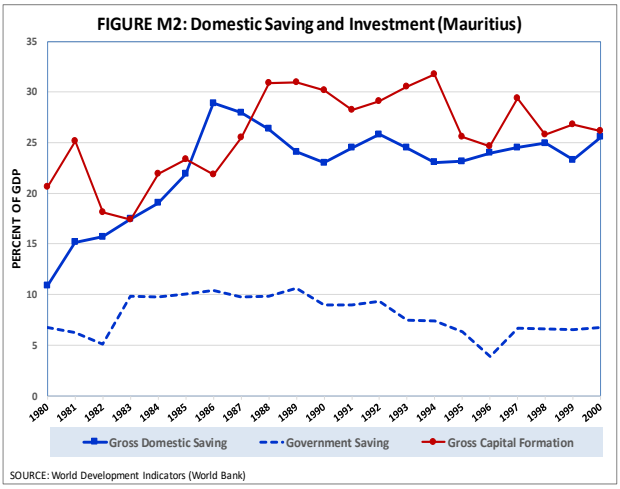


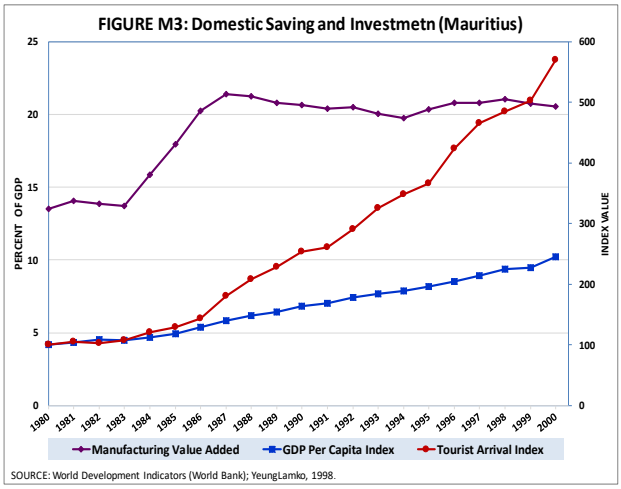
The sugar boom encouraged increased government social spending in health, education, water and sewage, and low-income housing (Wellisz & Saw, 1993). That spending was maintained after the fall in sugar exports and the resulting government deficit was financed by government borrowing. By 1979, the high debt service payments forced the government to turn to the International Monetary Fund (IMF) and World Bank (WB) for assistance. The result was a series of stand-by arrangements and a structural adjustment programs, which included a currency devaluation, reduced social program spending and economic liberalization. Liberalization included the removal of price controls and most quotas and subsidies and partial relaxation of quantitative credit restrictions. The tax system was also overhauled to reduce dependence on trade taxes. However, the government was able to reduce the redistributive effects of the stabilization and adjustment programs by imposing a 75% surcharge on the sugar export tax to

capture any windfall profits from the devaluation, and by preventing real wages from falling (Wellisz & Saw, 1993).

A3.4. A New Era of Growth

After the disasters of 1980, with a resumption of per-capita growth, gross domestic saving was expected to return to at least the immediate pre-1980 levels (between 15% and 20% of GDP) and it had done so by 1981. Investment also recovered but fell again in 1982 (Figure M2). However, starting in 1983, several factors served to change the trajectory of domestic saving (and investment). First, there was a near doubling in the government saving rate in 1983 - from 5% of GDP to near 10%, and this level of saving was sustained until 1989. Second, with world economic recovery (after the 1979-82 recession), tourist arrivals began a steep upward climb that would be sustained into the 21st century (Figure M3). Third, with the signing of the agreement for the return of Hong Kong to China in 1983, Hong Kong textile manufacturers began looking for new manufacturing locations to reduce perceived risk (as well as to avoid quota restrictions imposed by the US and EU). Mauritius was a favoured location (made more attractive, no doubt, by the already substantial Chinese population on the island) (Wellisz & Saw, 1993). As a result, the average annual increase in the number of establishments jumped from 13 in 1980-83 to 96 in 1984-87 and the average annual increase in employment rose more than tenfold, from just under twelve hundred to twelve thousand (Table M1). This induced a dramatic change in the productive structure of the economy as the contribution of manufacturing to GDP jumped from just under 14% in 1983 to 21% by 1987 (Figure M3).

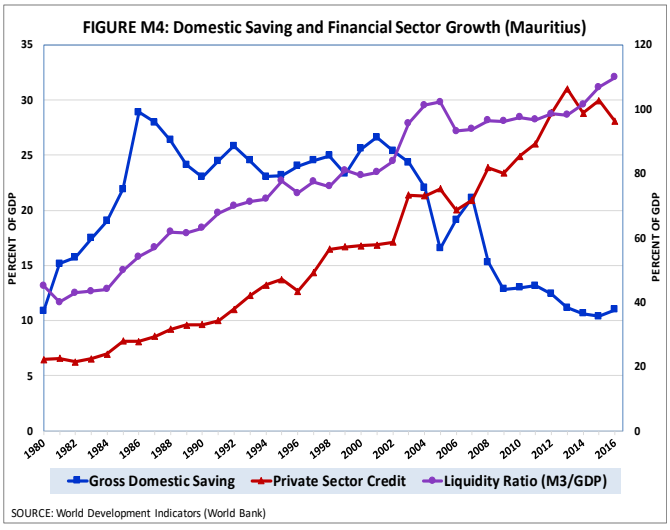




This dramatic change in government behaviour, in economic fortunes, and in the structure of the economy, generated permanent changes in saving propensities (Rodrik, 2000). The gross domestic saving rate continued to increase beyond 1981 and peaked at 28% in 1986. After 1983, the investment rate followed the saving rate increase and reached 31% in 1988. These high rates of both domestic saving and investment was sustained into the 2000s (Figure M2).

A3.5. Financial Liberalization and Saving

The liberalization of the financial sector in Mauritius began with partial liberalization during the structural adjustment period. This included partial relaxation of quantitative credit restriction and reduced interest rate controls (Wellisz & Saw, 1993; Jankee, 2006). By 1988 interest rates were fully liberalized. The liberalization process was completed in the 1990 with the removal of most of the remaining banking controls (including credit ceilings, cash and liquid asset ratios) and the removal of exchange controls (Jankee, 2006). Indicators of increased financial saving and intermediation (the liquidity ratio and private sector credit) both increased with increased liberalization (Figure M4). However, there is no indication that these movements had any direct impact on overall saving behaviour. In fact, the initial increase in domestic saving from 1981 to 1984 took place while the financial sector was still moribund, and financial sector growth continued well past the period of rapid growth in domestic saving (Figure M4). Jankee (2006) did find, however, that financial sector deepening and income growth shared a bi-causal relationship (meaning that financial sector development did have an impact on output growth as well as vice versa). It is noteworthy that, in the case of Mauritius, most of that financial sector growth occurred *after* the permanent rise in domestic saving – which suggests that any effect of financial sector development on growth did not likely operate through an increase in the domestic saving rate.

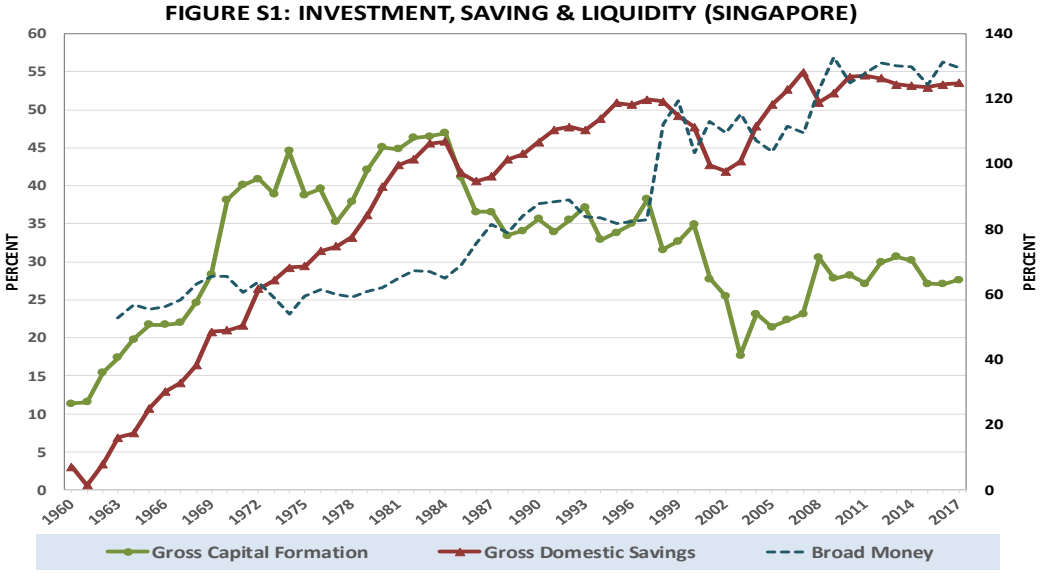


Appendix 4:Singapore

A4.1. Introduction

From an essentially zero domestic saving rate in 1961, Singapore experienced continuous increases in its domestic saving rates until 1984 (Figure S1). That saving rate was able to support a similar – but not continuous – increase in the rate of investment, from 11% in 1960 to 47% in 1984. Through that period (1960-84), Singapore's financial depth (as measured by the broad money to GDP ratio) was already high, but not increasing. However, financial depth started on an upward trajectory in 1985, just as the trend rate of growth of domestic saving slowed. Thus, Singapore's remarkable saving achievement was not the consequence of financial deepening. However, it is almost certainly related to the rapid growth that took place from 1960 to 1984, particularly the increasing employment (and later wages) that it generated, and the active participation of the government in resource mobilization.

FIGURE S1: INVESTMENT, SAVING & LIQUIDITY (SINGAPORE)



SOURCE: World Development Indicators (World Bank)

A4.2. Development within a Unique Institutional Structure

Singapore is sometimes referred to as "Singapore Inc." because of its institutional structure which some have compared to a giant corporation (Peebles & Wilson, 1996). At the apex of this

institutional structure is the government which, though it is nominally a multi-party democracy, has been run by a single party since independence. Beyond the ministerial arms of government are a large number of Statutory Boards, that are responsible for the implementation of a significant amount of government policies and programs. These Statutory Boards were established through an act of parliament. Some are funded by grants from the government and others, working on commercial principles, earn their own income. However, they all operate outside the government budget. There were 70 of these statutory boards in 1988 (Carling, 1995). There are an even larger number of government-linked companies (GLCs). These are corporations in which the government owns a majority or minority stake. These corporations are typically involved in activities more characteristic of private-sector firms. Some are carryovers from the colonial ear, but most have been created to meet specific government objectives (such as high technology ventures, where it was judged that the private sector required a lead firm) (Carling, 1995). In that regard, they also act as instruments of government policy. In 1988 there were 142 firms that had government as the majority shareholder and 500 with government as minority shareholder. While most statutory boards and GLCs can be considered to have been an integral part of the development strategy, notably two of those agencies had lead roles in implementing the country's industrial strategy on the one hand and the financial development strategy on the other.

The Economic Development Board (EDB) has been one of the most important (and powerful) of the statutory boards. Created in 1961, the board was given primary responsibility for implementing Singapore's industrial policy (Elkan, 1995). The EDB oversaw the implementation of that policy through four main phases:

The Import-Substituting Phase (1959-65) – This was a period during which the economy was engaged in classic import-substituting policies (including the use of tariff protection and quotas) to protect the local market for domestic products. The country even entered into an ill-fated federation with Malaysia in order to expand the domestic market. That strategy resulted in modest growth but unemployment remained above 10% (Elkan, 1995).

The Export Promotion Phase (1966-73) – With the demise of the federation, the small size of the market and chronic balance of payments problems made import substitution unsustainable. The EDB switched to courting export-oriented firms by providing tax and other incentives to firms choosing to locate production in Singapore. This phase proved enormously successful. Output growth rates average 12.6% from 1966 to 1973 and unemployment virtually disappeared (Elkan, 1995).

The Industrial Restructuring Phase (1974-84) – The tight labour market that resulted from the success of export promotion meant rising wages, which meant that Singapore was losing its advantage as a low-wage producer. The EDBs chosen solution was to shift from encouraging foreign (and local) investment in labour-intensive industries to high-technology industries. The new enterprises courted were high-technology firms and existing enterprises were offered incentives to upgrade (Elkan, 1995). Business and financial services also began to grow during that period. Growth during that interval remained high at an average of over 8%.

The Economic Diversification Phase (1985 to present) – Having reached close to the technological frontier (in manufacturing) in the region, opportunities for internal productivity growth was slowing. The EDB chose to exploit Singapore's comparative advantage in skill-intensive production by encouraging local firms to develop and take advantage of regional supply chains by relocating labour-intensive production elsewhere in the region while retaining headquarters and skill-intensive activities in Singapore. Though growth has gradually slowed since 1985, Singapore has now joined the ranks of advanced economies.

The Monetary Authority of Singapore (MAS), founded in 1971, is Singapore's central bank and financial regulator. In that capacity, it also had responsibility for implementing the financial policy that would lead, ultimately, to Singapore's development as one of the world's major financial centres.

Once it was determined that Singapore would pursue the objective of becoming a major financial centre, steps were taken by the MAS to liberalize the financial system. By 1975, most restrictions on financial intermediation, such as credit guidelines and interest rate restrictions, had been

removed and the financial system was fully liberalized (Carling, 1995). Capital market liberalization followed in 1978. However, neither of these changes had a major impact on financial ratios that were already high. It was not until implementation of specific initiatives, aimed at encouraging more offshore banking, in the early 1980s, that financial ratios began a clear upward trajectory (Figure S1). Foremost among these initiatives was the designation of Asian Currency Units (ACUs). These were financial institutions, run by resident banks, that could engage in all types of banking transactions in foreign currencies, but could not incur assets or liabilities in Singapore dollars (Rumbaugh, 1995). In effect, these were the MAS's way of institutionalizing the division between onshore and offshore banking activities. The ACUs faced a lower tax on profits (than their bank parents) and were exempt from reserve and liquidity requirements. Other initiatives included the development of the international monetary exchange (SIMEX) in 1983 for trading in futures and options (Rumbaugh, 1995) and further development of the market that had been in existence since 1973.

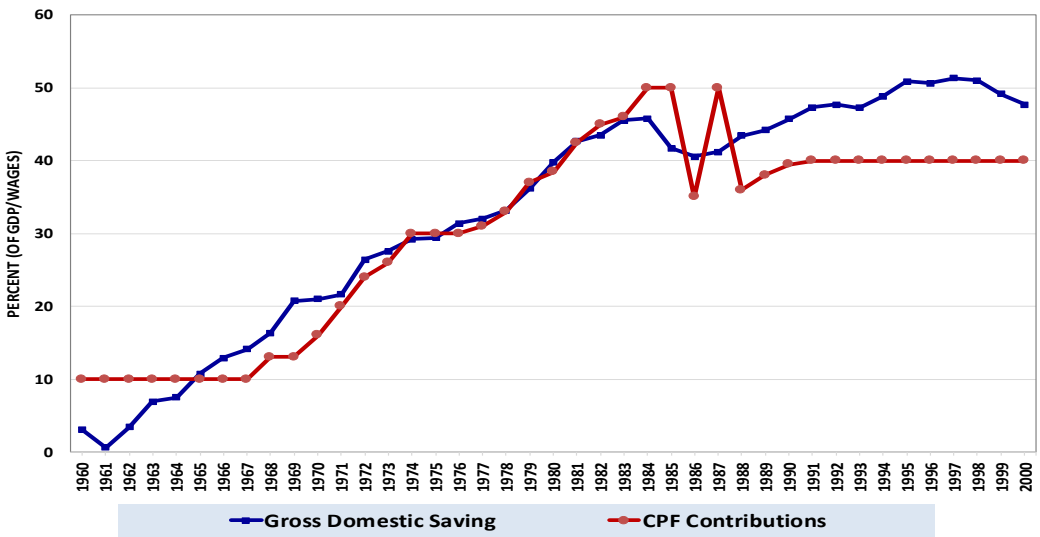
A4.3. Saving and Investment in Singapore Inc.

As noted earlier, and indicated by Figure S1, Singapore's rising saving rate from 1961 to 1984 bears no relationship to financial sector growth. This is not surprising because Singapore's annual saving, uniquely for a capitalist economy, has been, since the 1960s, intermediated mostly outside the financial system. In 1984 for example, government saving accounted for the largest portion of gross domestic saving at 37%, compulsory saving via the country's Central Provident Fund accounted for 30%, saving by the statutory boards and government linked companies (the non-government public sector) accounted for 27% and only 6% of gross domestic saving was accounted for by voluntary saving (Peebles and Wilson, 1996).

The year 1984 was not in any way unusual. In the period 1972 to 1999, government saving averaged 36.6% of gross domestic saving. Most of government saving is used for investment in infrastructure, public housing etc. but a significant proportion is lent to statutory boards and GLCs or used to purchase domestic or foreign assets. In the 1972 to 1999 period government net lending averaged 9% of GDP.

The Central Provident Fund (CPF), managed by yet another statutory board, the Central Provident Fund Board, accounts for most of Singapore's private saving. The fund, established under the colonial administration in 1955, mandates a compulsory contribution (into the fund), per employee, by all employers and employees. That requirement is binding for most sectors of the economy and self-employed persons may opt in (Peebles and Wilson, 1996). Contributors are guaranteed an interest rate on contributions that is the simple average of the one-year deposit saving rate of the four largest local banks. The required contribution was 5% (of wages) for employees and 5% (or wages) for employers until 1967. It has since risen and reached as high as 25% (of wages) for both employers and employees (implying a total contribution of 50% of wages) but total contributions have settled closer to 40% since 1991. As Figure S2 indicates, except for the early 1960s (when unemployment was high), the evolution of the total contribution rate into the CPF closely matches the evolution of gross domestic saving. It is thus hard to argue that this compulsory saving scheme is not a big part of the explanation of Singapore's phenomenally high saving rate.

FIGURE S2: DOMESTIC SAVING AND CPF CONTRIBUTIONS (SINGAPORE)



SOURCES: Bercuson (1996) and World Development Indicators (World Bank)

More than 90% of CPF contributions are used to purchase government securities. The proceeds of these purchases are channeled, by the government, into statutory boards to be used for

investment in public housing, infrastructure and other forms of asset accumulation. In effect, this form of saving is also intermediated by the government rather than the financial sector.

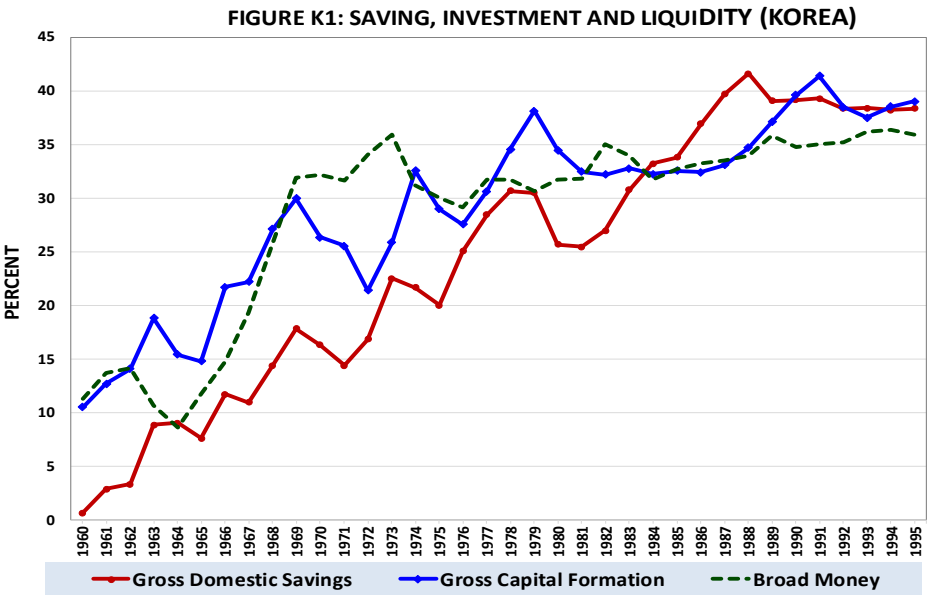
It is likely that part of the savings of the non-government public sector (statutory boards and government linked agencies), which is substantial, make their way into the financial system to be intermediated by private financial institutions, but it is also likely that a significant proportion of these savings are invested by the agencies themselves – further reducing the role of the private finance in resource allocation. Thus, ironically, one of the world's major financial centres determines most of its resource allocation outside the financial system.

Appendix 5: South Korea

A5.1. Introduction

As Figure K1 indicates, from 1961 to 1988 South Korea experienced almost continuous increases in its domestic saving propensity as the domestic saving rate rose from nearly zero in 1960 to 42% by 1988. Correspondingly, the country's investment rate increased from just over 10% in 1960 to 41% in 1991. Additionally, in the 1965-73 interval, the country also experienced a rapid increase in financial depth; as the broad money (M3) to GDP ratio increased from less than 10% in 1964 to over 35% in 1973. With respect to all three of these variables, while we can recognize transitions as they moved from lower levels (relative to GDP) in the early 1960s to higher and sustained levels by 1980, the transitions were not uniform. First, while investment and domestic saving were moving nearly in harmony until 1979, the gap between them first increased and then narrowed – suggesting that the role of foreign finance varied over time. In fact, after 1984, domestic saving often exceeded domestic investment as South Korea moved into an era of trade surpluses. Second, though the period of rapid financial deepening largely corresponded with increasing saving, it was preceded by a period (up to 1965) during which the saving rate was increasing while financial depth remained shallow and stagnant, and was followed by a period (1973 to 1988) when the domestic saving rate continued to increase even though financial depth had levelled off (Figure K1).

In the context of Rwanda, all these features of the co-evolution of saving, financial deepening, and investment are relevant. It is important to understand why South Korea was able to finance an increasing proportion of its investment from domestic saving and eventually save more than it needed for investment. Similarly, given that Rwanda has carried out financial sector reform aimed at increasing the role of finance in savings mobilization, it is important to understand how and why financial deepening in South Korea coincided with an increasing domestic saving rate, whereas this has not held true so far in Rwanda. It is also important to understand why the domestic saving rate continued to increase long after financial deepening (as conventionally measured) had levelled off (Figure K1).



SOURCE: WORLD DEVELOPOMENT INDICATORS (WORLD BANK)

A5.2. Increasing saving in the context of shallow finance

In the period immediately after the Korean War (1954-60), growth was modest despite the need for post-war reconstruction. This was, in part, because investment rates remained low; incidentally, that low rate of investment was financed mostly by foreign aid inflows because the domestic saving rate was low and sometimes negative (Kuznets, 1980). This situation changed in 1961 with the arrival of the Park regime. In the period from 1961 to 1964 the domestic saving rate was set on an upward trajectory and, with it, domestic investment (Figure K1). In the 1961-65 period the growth rate of output was 6.6% compared to the 4.8% average of the previous seven years.

The change in the trajectory of domestic saving (and investment) was the result of a series of deliberate actions taken by the government to increase resource mobilization.

- Government domestic saving which, which had been negative, became positive and increasing after 1962 (Figure K2). This was accomplished by both reducing the rate of growth in expenditure and by increasing the rate of growth in revenues through an improved tax effort (Kuznets, 1980).

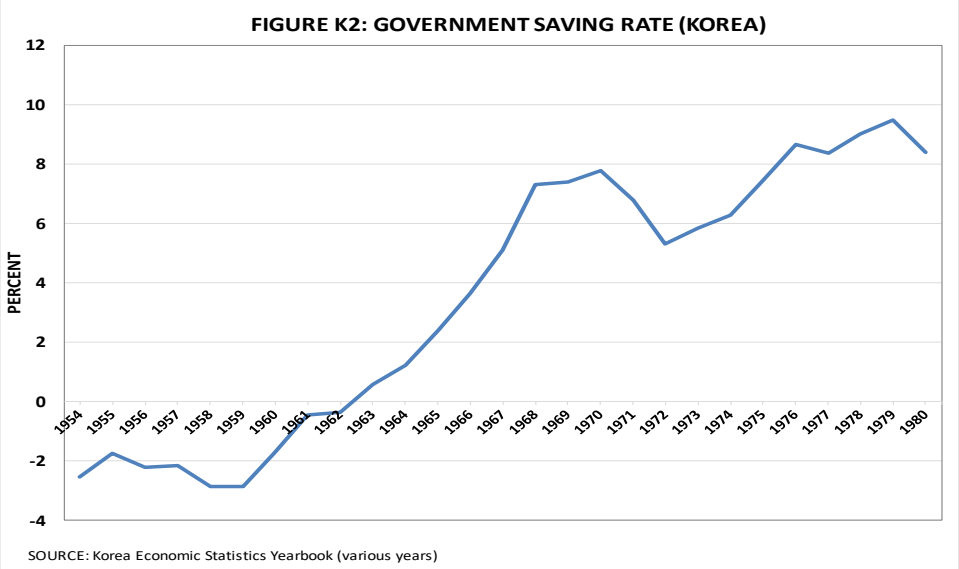
- In 1961 and 1962 the government created a new set of financial institutions which, together with the Korean Development Bank (KDB)–which had been established in 1954–were mandated to provide credit to specific sectors of the population. These included: The National Agricultural Cooperatives Federation (NACF) for agriculture, The Medium Industry Bank (MIB) for the small and medium enterprises, and the Central Federation of Fisheries Cooperatives (CFFC) for the fishing industry. Though all of these institutions, except the KDB, accepted deposits from the public, they were also financed from the government budget and/or the Central Bank and, moreover, lent out much more than they received in deposits (Table K1). The KDB in particular, was financed almost exclusively by the Central Bank.
- In October of 1961 the government repossessed the private commercial bank (which it had divested itself of a few years earlier) and pushed them to increase loans to the private sector.
- In 1962 the Central Bank was put under the control of the Ministry of Finance.
- Starting in 1962, an investment guarantee scheme was developed through which the Central Bank, working in conjunction with commercial and other banks, provided guarantees for foreign loans taken by local corporations (Park & Chul, 1983).

All of these factors, combined, led to an increase in investment and, with it, domestic saving. However, this increased saving came mostly from increased government saving and from forced saving through the inflation tax (since much of the domestic lending was achieved through money creation). Not surprisingly, this led to high inflation levels which the government attempted to solve (unsuccessfully) with a currency reform. The initial increase in saving and investment rates was therefore threatened, and the government responded with a series of financial reforms in 1964-65 (and additional initiatives in 1967). These initiatives sought both to increase voluntary saving rate, to increase saving propensity more broadly, and to financialize savings by drawing savings away from a then vibrant (and highly profitable) informal financial sector.

Table K1: Distribution of Bank Lending by type of Bank (1960-78)

	Year	Commercial Banks	Special Banks	Korea Development Bank
Deposits (% of Total)	1960	79.2	16.9	3.9
	1965	69.0	28.8	2.2
	1970	63.3	35.3	1.4
	1975	68.7	30.6	0.7
	1978	62.9	35.9	1.2
Loans (% of Total)	1960	28.6	31.8	39.6
	1965	34.4	31.8	33.8
	1970	51.9	33.0	15.1
	1975	53.9	29.5	16.6
	1978	52.7	29.4	17.9
Loan to Deposit Ratios	1960	0.4	1.9	10.2
	1965	0.5	1.1	15.4
	1970	0.8	0.9	10.8
	1975	0.8	1.0	23.7
	1978	0.8	0.8	14.9

Source: Table 7 in Cole & Park (1983).



A5.3. Increasing saving in the context of financial deepening

The financial sector reforms consisted of a series of initiatives aimed specifically at increasing the proportion of saving, intermediated by the formal financial system. This was to be achieved by making financial saving instruments (particularly time and saving deposits) more attractive to

savers, keeping credit relatively cheap, and increasing both the accessibility and reach of the formal financial sector. The main policy initiatives were:

- A currency devaluation and unification of the multiple system of exchange rates in 1964;
- An increase in the official ceiling on nominal time and saving depots from 15% to 30% (in 1965) combined with a significantly lower adjustment in maximum lending rates;
- A shift in the manner of central bank control of domestic credit from direct control (using reserve ratios) to indirect control, using a stabilization fund at the Central Bank (and control of credit through changes in bank deposits into the fund or sale of stabilization bonds) in 1965;
- The passage of laws regulating the holding of real estate (in 1967);
- The creation of an additional set of banking institutions in 1967 that included;
    - The Korean exchange Bank – a wholly owned subsidiary of the Central Bank involved mostly in providing foreign loan guarantees;
    - Korea Trust Bank – a consolidation of the trust departments of the commercial banks;
    - The Korea Housing Bank – created to finance housing for low-income families;
    - Local banks – to provide commercial banking services in the provinces;
- The granting of permission for a limited number of foreign bank branches in South Korea.

The effect on both financial saving and measured domestic saving was immediate and spectacular. The increase in deposit rates, combined with lower inflation, resulted in increases in deposit rates ranging from 11% for demand deposits to 26% for time deposits. As a result, bank deposits rose from 10% to 30% of GDP between 1965 and 1969, and bank loans increased at a similar pace (Park & Chul, 1983). In line with the increase in deposits, broad money (M3) rose, relative to GDP, from 12% in 1965 to 32% percent by 1969 (Figure K1). Domestic saving resumed the increasing trend that had stalled in 1964-65 and had reached 18% by 1969. Boosted, not only by the increase in domestic saving but by an increasing amount of foreign finance through the continuation of the foreign-loan guarantee scheme, investment increased even faster than saving – rising from 15% in 1965 to 32% by 1969.

These changes represented a clear shift in the both the volume and composition of asset accumulation of saving units (households) and spending units (corporations). As Table K2 indicates, households and unincorporated businesses (mostly farms) increased the real value of (recorded) asset holdings more than threefold from 1963-64 to 1970-71. Just as important, their asset composition shifted from mostly real assets (real estate, housing etc.) to mostly financial assets. Correspondingly, Korean corporations increased their average annual investment financing more than threefold and shifted from 52% internal financing in 1963-64 to 28% in 1970-71. These corporations also invested more in financial instruments (as opposed to fixed investments and inventories) – increasing the proportion of financial instruments in firm investment from 4% in 1963-64 to 18% in 1970-71. The rate of capital formation (domestic investment) still rose because the size of firm investment portfolios increased sufficiently to allow the amount devoted to fixed capital to increase despite its reduced preference relative to financial assets.

Table K2: Asset Allocation of Households and Unincorporated Businesses (1963-78)

Asset Accumulation	1963-64	1970-71	1977-78
Total Assets (Billions of 1980 won)	634.0	2312.1	5965.3
%Real Assets	63.1	38.1	38.9
%Financial Assets	36.9	61.9	61.1
Index of Real Values			
Total Assets	*100.0*	*364.7*	*940.9*
Real Assets	*100.0*	*216.9*	*585.1*
Financial Assets	*100.0*	*617.8*	*1550.1*

Source: Table 8 in Cole & Park (1983).

Table K3: Sources of Finance for Korean Corporations (1963-78)

Sources of Finance	1963-64	1970-71	77-78
Average Annual Financing			
Billions of 1980 won	825.1	2,979.1	8,109.9
Index of real values	100	361	983
Sources of Financing			
% Internal	51.2	27.8	29.9
% External	48.8	72.2	70.1
% Bank Borrowing	14.8	31.4	26.0
% Non-Bank Financial Institutions	14.6	13.4	16.1
% Foreign Borrowing	11.0	27.4	8.5
% Equity & other sources	8.5	0.0	19.5

Source: Table 7 in Cole & Park (1983).

Table K4: Investment Spending by Korean Corporations (1963-78)

Firm Investment	1963-64	1970-71	1977-78
Billions of 1980 Won	825.1	2,977.5	8,109.9
%Real Assets	95.7	81.9	63.3
%Fixed Assets	*76.1*	*70.8*	*62.7*
% Inventories	*19.6*	*11.1*	*0.6*
% Financial Instruments	4.3	18.1	36.7
Index of real values			
All Assets	100.0	360.9	982.9
Real Assets	100.0	308.9	650.6
Fixed Assets	*100.0*	*335.9*	*810.0*
Inventories	*100.0*	*205.1*	*32.1*
Financial Instruments	100.0	1513.6	8354.4

Source: Table 7 in Cole & Park (1983).

A5.4. Increasing Saving in the Context of Deeper Finance

After the rapid growth of 1965-69, the ratio of broad money to GDP grew more slowly and, after reaching 36% in 1973, settled at or slightly below that ratio well into the 1990s (Figure K1). This does not mean that real money holdings were not growing. It simply means that it was no longer growing faster than GDP. However, the slowdown in the rate of broad money growth was not

mirrored by the domestic saving rate. That rate continued to increase (with a few short interruptions) until it peaked at 42% in 1988. The trend investment rate also continued to grow (though more slowly) into the 1990s. This suggests that, in the period after 1969, the main driver of the increasing saving propensity was no longer the increasing financialization of saving. This is supported by the data relating to the behaviour of banks, households and corporations.

As Table K1 indicates, after the rapid increase of the 1960, the commercial bank proportion of total lending did not increase after 1970. Similarly, the proportion of financial assets in the asset accumulation of households (and unincorporated enterprises) remained stable at just over 60% during the 1970s. The rapid rise in the proportion of financing for Korean corporations coming from external finance also stabilized at around 70% but its composition changed. By 1977-78 the importance of bank borrowing had declined modestly and foreign borrowing had decreased sharply. These changes were offset by the increasing importance of non-bank financial institutions and the use of securities and other financial instruments (which increased from virtually zero (net) to nearly 20% of total external financing) (Table K3). Though the proportion of investment finance allocated to fixed assets continued to decline, the absolute amount more than doubled between 1970-71 and 1977-78 (Table K4). Financial assets continued to account for a smaller part of firms' asset allocation but that proportion continued to increase.

These changes indicate that the intermediation effort and outcome continued to improve, but the tools of intermediation were changing. After 1969, a variety of new non-bank financial institutions (NBFIs) were developed. These included (but were not limited to):

- Insurance companies
- Investment Finance companies – who where heavily involved in the market for commercial paper besides engaging in other investment banking activities;
- Mutual saving and Finance Companies – who attracted savers from the unregulated market and provided loans
- The National Investment Fund – created to provide financing to heavy industry;

- The Korean Development Finance Corporation (KDFC) – which provided long-term financing and equity participation, as well as managerial and consulting services for new enterprises.

Some of these agencies, such as the KDFC, offered financing through the purchase of securities; but a significant part of the increasing importance of securities financing came from the development of the stock market. A new capital markets law was promulgated in 1968 and the government provided initiatives for firms to go public through tax incentives and other policy instruments.

Appendix 6: Three Examples of Formal-Informal Linkage

A6.1. Commercial Bank and Informal Saving Groups in Tanzania

Stillman (2018) describes a United Nations Capital Development Fund (UNCDF)-Microlead project that tried to link a formal sector bank with informal savings groups (SGs) in Northern Tanzania between 2013 and 2017. The bank was Mwanga Community Bank (MCB), a regional bank serving the Kilimanjaro region. The informal savings groups were developed according to the CARE franchise model, consisting mostly of women (and thus nearly identical to the village saving and loan associations (VSLAs) of Rwanda) as well as savings and credit cooperatives (SACCOs), solidarity groups (consisting of five to eight micro-entrepreneurs) and village community banks (similar to SILCs).

A6.1.1. The Linkage Process

CARE hired a group of entrepreneurs and trained them as community-based trainers (CBT) grounded in CARE's savings group methodology. The CBTs were then tasked with finding existing savings groups or forming new groups; and then helping them with the process of linking to the MCB. The formal process of linking (which could be completed in the field) involved:

(i) Financial education (for the group) covering saving, budgeting, and recordkeeping provided by the CBT and an MCB team; also

(ii) Guiding the group's financial representatives (signatories) through the multi-step process of opening a group bank account (which included filing forms, providing a copy of the SGs constitution, a letter of introduction from a village official, passport photos etc.);

A6.1.2. Banking Services

Once a group account was opened, the savings group could deposit or withdraw funds as they wished by visiting a bank branch, using mobile money, or visiting an agent banking site. After one year, the group became eligible to apply for group loans. Individual members had the options to open their own bank account later on (an offer that was not often taken up). The group also paid

no bank fees (except for late loan repayment fees) and received a free ATM card with no transaction limits. The bank officers and the CBTs also continued regular visits to the group – every two to three months – to conduct additional training, answer questions, discuss borrowing options, and ensure that proper protocols were being followed.

A6.1.3. The Intermediaries

Both the initiation and execution of this formal-informal link involved, and depended on, two important intermediaries.

The Community-Based Trainer (CBT) – was responsible for initiating the link, and sometimes forming, the savings group. They were rewarded by receiving 0.5% of the amount deposited by the groups that they brought to the bank. (An earlier payment system that involved a flat-rate payment proved to be incentive-incompatible because it encouraged exaggeration and the creation of ghost groups). CBTs were also given the opportunity to apply for bank loans for their purposes and this proved to be a major incentive.

The Banking Agent – the creation of banking agents was an innovation developed toward the end of the project, when it was recognized that the two initial options for accessing bank accounts (direct visits and mobile money) were problematic. There were not enough bank branches for convenient access for most groups, and mobile money options had some costs and lacked transparency. The banking agents were initially trained by the banks (they were typically shopkeepers), and furnished with a point-of-sale device (approved by the Central Bank) that allowed customers to access their accounts and to engage in both saving and lending activity. The Agents were also furnished with a substantial "float" (liquidity) that allowed them to meet cash payout requirements. Agents were paid, by the bank, based on the number of transactions handled but customers payed no fee to the agents. The introduction of banking agents significantly reduced the problem of accessibility.

A6.1.4. Successes and Challenges

The project ended in 2017 but the MCB has continued to link savings groups. In that regard the project has been successful in creating a model for informal-formal finance linkage that continues to be used. Some of the more specific successes of the project include:

- The successful linkage of 1000 savings groups (representing about 24,000 individuals) to the MCB.
- Loan repayment rates were nearly perfect, especially for village savings and loan associations (VSLAs), even though these loans were unsecured (they relied on shared group responsibility in the manner of the Grameen Bank model);
- The bank (MCB) has been able to sell additional banking services to groups and group members;
- Other banks have recognized the advantages and are now competing with MCB for savings group clients.

However, some challenges remain:

- The linkages did not prove profitable at the onset but were expected to become profitable as per-unit costs were brought down in time;
- The new competitors into the market do not emphasize training and education as much as the MCB did (and continues to) and this may increase loan default rates down the road.
- Trust of banks and bank officials (by savings group members) still remains a challenge to be overcome.

A6.2. Commercial Banks and SUSU Groups (tontines) in Ghana.

In Ghana informal rotating savings and credit associations (ROSCAs) are called *susu* groups, the equivalent of *tontines* in Rwanda. Jones *et al* (2000) describe ways in which three formal financial institutions established links with ROSCAs in Ghana. One of these was a commercial bank based in Accra (The Metropolitan and Allied Bank), another was a non-bank financial institution (CITI

Savings and Loans Company) and the third was a rural bank (Ahantaman Rural Bank).[28] Though there were some common features in these linkages, there was significant variation in both the detail and the level of importance of these linkages across institutions.

A6.2.1. Common Features

All of the formal institutions offered group savings accounts to the ROSCAs and potential access to loan facilities for the group. They all required some indication of a governance record to qualify for a group account and regular (weekly or fortnightly) contact with the group after registration. These institutions also offered the possibility of individual accounts for group members.

A6.2.2. Differences

The ease, cost and maturity of credit varied by institution. CITI Savings and Loans Company (CITI) required both a saving record and guarantors for groups to qualify for loans. Metropolitan and Allied Bank (M&A) required only a good saving record, while the Ahantaman Rural Bank's (ARB) requirements remained unclear. The interest rates on both deposits and loans varied. CITI offered 15-20% on deposits and 38-42% on loans (in an environment of 15-17% inflation).[29] M&A offered 0% or 15% on saving deposits, depending on whether the group had an outstanding loan, and 65% of the market rate on loans. ARB offered 21% on deposits but loan charges were not disclosed. CITI offered loans of up to 2-year loan period, M&A offered loans of up to one year, and ARB offered loans of up to one year. The treatment of individual group members was also different. CITI required all members to have individual accounts. The other formal finance institutions did not impose that requirement.

[28] Rural Banks are a special set of banks introduced and established by the Government of Ghana in 1976. The intent was to inculcate the habit of banking among the rural population, provide banking services to the rural population, mobilize funds, and channel those funds into productive ventures in the rural areas (by providing credit to small-scale farmers and rural businesses and supporting development projects). The intent was similar to that of the Umurenge SACCOs in Rwanda – though, perhaps, somewhat broader and on a larger scale.
[29] Banking data are relevant to 1998.

A6.2.3. Advantages for ROSCAs and Formal Institutions

The primary advantage of these links for ROSCAs was the possibility of borrowing arrangements that allowed them to receive payouts earlier in the payment cycle (and probably larger) than would have been the case without access to a loan facility (Jones *et al*, 2000). For group members, there was also the prospect of graduating to an individual relationship with the formal financial institution.

The greatest advantage for the formal financial institutions was the savings that they were able to mobilize through these linkages. For CITI, for example, the savings mobilized accounted for 26% of its deposit liabilities. The relative importance was less for the two other institutions but still substantial. On the lending side, these institutions were able to charge high interest rates on loans and yet experience near perfect repayment rates (99% for CITI, 100% for M&A, and 99% for ARB).

A6.3. Formal Financial Institutions and *SUSU* Collectors in Ghana.

Jones *et al* (2000) also describe linkages developed between *susu* collectors and formal financial institutions. Susu collectors are an informal financial institution unique to West Africa. These collectors are essentially independent agents who facilitate saving by collecting (typically) fixed amounts from their clients on a daily basis and return the accumulated amount (less one day's saving as commission) at the end of the month (Jones *et al*, 2000). Their clients are predominantly women. They also offer their clients shot-term loans or advances. Their client base is typically between 200 and 850 but it has been known to reach 1500 (Osei, 2007). Informal links have existed between *susu* collectors and formal institutions for a long time because many *susu* collectors hold bank accounts in formal financial institutions. However, the links initiated by CITI Savings and Loans Company (CITI) and Ahantaman Rural Bank (ARB) were significantly deeper and more formal, but their approaches were very different.

A6.3.1. CITI Savings and Loans Company – Instrumenting *Susu* Collectors

CITI Savings and Loans Company went beyond offering *susu* collectors the possibility of opening deposit accounts at their institutions – a facility that was already available. They offered selected

susu collectors, those who had accumulated substantial savings with CITI, the opportunity to borrow from CITI in order to on-lend to their clients. This facility allowed these *susu* collectors to increase the average size of their loans from a range of (approximately) $10 to $320 to $40 to $430 and extend loan repayment periods from one month to 3-6 months. However, the interest rate on those extended loans increased from zero in the traditional setting to 3.5% to 5% a month. Despite this high cost for credit, the loan repayment rate was still extremely high at 98%.

A6.3.2. Ahantaman Rural Bank – Formalizing *Susu* Collecting

Unlike CITI, ARB did not formalize its link with existing *susu* collectors but, instead, created *susu* collectors of its own – essentially formalizing a traditional institution and embedding it into their banking model. The collectors were called *susu* clerks. They were required to have at least secondary school education and were provided with requisite training by the bank. This group of 26 *susu* clerks (in 1998) were able to develop a client base of 6,000 (an average of 230 clients per clerk) and mobilized the equivalent of $130,000 in deposits for the bank on a monthly basis. These *susu* clerks offered loans to group members in the range of $215 to $430 but interest rates, though high, at 40% annually, were lower than then rates offered by the CITI-linked *susu* collectors. Loan repayment periods were from 9 to 12 months. The loan repayment record was also excellent at 95%. In addition, to their indirect link to the bank through the *susu* clerks, the clients of the *susu* clerks were also encouraged to open individual deposit accounts with the bank. Ninety percent of them did, thus significantly expanding the client base of the bank.

Given the deposit mobilization, lending possibilities and the expansion of the client base, this formalization and embedding of a traditional institution can be considered to have been a success for ARB. Jones *et al* (2000) report that, as of 1998, the 26 *susu* clerks were responsible for mobilizing 18% of the banks deposit liabilities.

Appendix 7: The Agriculture Bank and SBICs.

A7.1. The Agriculture Bank

A7.1.1. Economic Justification

The Agriculture Bank is suggested for Rwanda to help solve financing problems particular to agriculture (and the rural sector at large). In Rwanda, agriculture, fisheries and livestock accounted for 1.5% of outstanding bank loans in mid-2018 though that sector accounted for 31% of GDP and 66.5% of total employment (NBR, 2018). While such a bank would be expected to lend predominantly to agricultural enterprises, it is presumed that it will also prioritize other rural-sector initiatives, such as forestry, fishery and any other primarily rural activity (except large-scale mining). Such a bank would help to solve three problems related to saving and investment in the rural areas.

Risk Diversification – If rural financial institutions were able to attract savings from the rural sector that were sufficient to finance all needed investment in agriculture (and the rural sector generally), savers would face a risk diversification challenge. With rural savings as the only source used to finance rural investment, the rural sector would bear all the risk related to agriculture. Given that, with its narrow base, economic fortunes in agriculture – and, by implication, the rural sector – are more volatile than the rest of the wider economy, this would be a very sub-optimal way to finance rural investment (and would be an indication of poor intermediation). One part of this problem of risk diversification can be solved by shifting some of the rural sector savings into other sectors that have different risk profiles (such as manufacturing, tourism etc.). In the case of Umurenge SACCOs, this would be achieved if the (proposed) apex institution, the **National Cooperative Bank**, shifted some of its deposits to other sectors by purchasing assets of institutions engaged in lending and investing in other sectors, or made loans directly to those sectors. However, if resources are shifted only from the rural sector to other areas, without a corresponding flow of saving in the other direction, there would continue to be a net flow of resources out of agriculture – as there is now. An Agriculture Bank can help

to correct that potential imbalance. Such a bank can be financed with both rural and non-rural saving (by some combination of deposits, sale of securities and capitalization). In that way it will be able to contribute to risk diversification in a way that does not deprive the rural sector of resources.

Large-scale Lending – Most saving institutions in rural areas are small and, thus, large-scale lending is not a practical option. Larger, mostly urban, financial institutions do have the resources to lend larger amounts to the agricultural sector, but (as is obvious from the data) there has always been a reluctance to lend. This is almost certainly caused, at least in part, by problems of (sectoral) knowledge and distance that make proper risk assessment difficult. A specialized institution would be able to overcome both of these hurdles by being able to assemble (and justify) its own in-house expertise, connect to local financial institutions, and develop constructive working relationships with other institutions in the agricultural sector (in addition to the development of a viable branch network). These attributes would allow the bank to more accurately assess risk and potential rates of return on investment. Therefore, if it is adequately resourced, large-scale lending to agricultural endeavours could become quite feasible and even attractive.

The Technical Knowledge Challenge – Small-scale lending in agriculture has to deal with the problem of specialized knowledge as well. What, for example, are the likely rate-of-return implications of the use of a particular new plant seed or animal breed for a small or medium-sized farm? Access to the technical knowledge needed for an appropriate assessment of many proposals may be unavailable, difficult to obtain, or too expensive. The presence of a specialized financial institution that can offer a stock of expertise – knowledgeable in both agriculture and finance – that can be readily accessed at low-to-moderate costs will make lending much more viable and attractive. The use of this expertise can be instrumentalized in several different ways, including direct advice to lending officers (of the Bank as well as client institutions) or through the provision of insurance instruments that reflect expert assessment of risk.

These are not the only missing-market and missing-institution problems that can be solved by an Agriculture Bank, but they are the most immediate ones. In addition, such an institution can be invaluable in helping Rwanda implement a coherent agricultural development and rural development policy, as the example below suggests.

A7.1.2. An Example: The Agricultural Bank of Taiwan

The Agricultural Bank of Taiwan opened in 2005 and was tasked with "building an integral, secure and autonomous system of agricultural finance" (Agricultural Bank of Taiwan, 2006). It was designed as an apex institution with the mandate of supporting the credit department of Taiwan's 1,150 farmers' and fishermen's associations (both prudentially and technically). It was also tasked with financing large-scale agricultural projects and supporting the government's agricultural policy more broadly.

More to the point, the Act establishing the Bank included the following mandates:

- To handle major agricultural construction financing and government agricultural project financing.
- To administer agriculture, forestry, fishery and livestock husbandry financing in line with government agriculture and fishery policies.
- To tutor the credit departments of the Agriculture and the Fishery associations on audit procedures of business operations and financial status.
- To handle businesses that have been approved by the competent authority of the central government in consultation with the Banking authority and other relevant authority (Law & Regulations Database of the Republic of Taiwan, 2018).

The government contributed 49% of the initial share capital for the Bank, with most of the remaining shares provided by farmers' and fishermen's cooperatives. The government's stated intent, at establishment, was to decrease its proportion of total shares to 20% over time (Law & Regulations Database of the Republic of Taiwan, 2018). In keeping with that intent, government

ownership of the Bank had fallen to 40% of total shares by 2017 (Agricultural Bank of Taiwan, 2017).

By most of the relevant measures, the Bank has been a success. In 2006 it held $10 million in deposits, had a loans-to-deposits ratio of 45%, nonperforming loans accounted for 8% of its loan portfolio, and it paid no dividends to its shareholders. By 2017 the Bank held $60 billion in deposits, had a loans-to-deposits ratio of 55%, nonperforming loans accounted for only 0.45% of its loan portfolio, and it paid 9 million in dividends to its shareholders. Perhaps more importantly, in 2006, 63 of its client farmers' and fishermen's associations had higher than 15% nonperforming loans in their loan portfolios. In 2017, not a single one did.

A7.2. Small Business Investment Companies (SIBCs) in the United States

A7.2.1. Definition

Small business investment companies (SIBCs) in the United States are, privately owned, investment finance companies that specialize in providing long-term investment to small businesses. These companies are licensed by the Small Business Administration of the US Federal Government. They provide both equity and debt financing to small businesses and provide that financing to both startups and established small businesses (Hamilton, 2018).

A7.2.2. History and Successes

The Small Business Investment Act, passed by the United States Congress in 1958, established the legal basis for the formation of small business investment companies. The intent was to bridge an institutional gap (and overcome an incomplete market problem) in small business financing. "It [Congress] realized that commercial banks are not able to furnish such long-term financing, that public sale of small issues of securities involved prohibitive costs, and that private placements had afforded no general solution to the problem" (California Law Review, 1959). It was hoped that the creation of these new intermediating institutions would help stimulate long-term investment in American small businesses. In that regard it has been successful. From its inception to the end of 2017, the act has facilitated the financing of more than 178,175 small businesses by small business investment firms, involving more than $91.5 billion in total funding.

Some former recipients of small business financing (from SBICs) include current household names such as: Apple Computers, Costco, Federal Express, Intel, and Whole Foods (Hamilton, 2018).

A7.2.3. The Financing Model

Small business investment companies obtain financing by issuing debentures (unsecured bonds). These debentures are, however, not offered directly by individual SBIC. Instead, the Small Business Administration pools the debentures from several SBICs and takes responsibility for selling these debentures to the public. In that way the Small Business Administration, as an arm of the federal government, is able to lend its credibility and creditworthiness to these instruments – resulting in lower borrowing costs. These debentures are always of 10-year maturity and sold at (implicit) interest rates only slightly higher than the United State Government's ten-year bonds. In September 2018, for example, the interest rate on these debentures represented only a small premium (0.59%) on the government bond rate (Hamilton, 2018).