

Financial Intermediation and Economic Growth in Economic and Monetary Union: The case of SACU and CMA ⁺

By

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Abstract

The increasing international interest in economic integration and monetary union has spawned new regional initiatives in every continent, including Africa. As a result global financial markets are becoming increasingly integrated. A major question that arises from this is whether domestic financial institutions will become irrelevant. This paper attempts to examine this question using the experience of the Southern African Customs Union (SACU) and the (Rand) Common Monetary Area (CMA), which are often cited as examples of successful integration in Africa. The empirical evidence shows that domestic financial intermediation is still relevant in such financially integrated markets. However, the evidence also indicates that for the smaller countries of the SACU with less developed financial institutions, to derive the optimal gains from financial intermediation, they would need to take steps to strengthen their weak financial system and resolve the institutional and structural problems in their economies. An obvious lesson for countries contemplating forming or entering economic integration, in particular a monetary union is that the development of their financial system and addressing other institutional and structural problems will be a necessary precondition for deriving optimal gains from this integration.

1. Introduction

In the last two decades the link between financial intermediation (FI) and economic growth has generated a great deal of interest among academics, policy makers and economists around the world. Several theoretical and empirical studies have addressed the potential links between financial development and economic growth. However, despite the rapidly growing literature, the debate concerning the role played by the development of financial intermediaries in economic growth is far from settled. Moreover, much of the empirical evidence on the links between financial development

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and economic growth comes from a period when cross-border capital movements were very limited and as such were ignored in most analyses.

Also, as globalization and economic integration are increasingly becoming the dominant features of the world economy, international capital mobility has exploded. For instance, private capital flows to emerging market economies have grown from close to nothing in the 1970s, to \$US170 billion in the 1980s, and to \$US1.3 trillion by the late 1990s (Friedman 1999). Orthodox economists and international financial institutions have argued that by carefully following a proper sequence of internal and external financial liberalization developing countries would be able to access these capital flows to enhance welfare and development. Indeed, the promise of higher growth and welfare combined with conditions imposed by international financial institutions, has led to the widespread of financial liberalization in developing countries.

In the light of these developments, the question of whether national financial markets still matter for growth once domestic agents have access to foreign markets has become very important from the perspective of policy makers. This paper assesses the relevance of national financial intermediaries in an increasingly integrated financial market using the case of the Southern African Customs Union (SACU)¹ countries. SACU, a customs union that dates back to 1889 is the oldest regional attempt at economic integration. The CMA², a parallel development of SACU, forms an essential building block of the customs union.

The SACU and the CMA arrangements have been cited as examples of successful economic integration in Africa (Jenkins and Thomas, 1998: 145). Studies have shown that as a result of these arrangements, the financial sectors of member countries are highly integrated (see for example Jenkins and Thomas 1998: 167). Hence, if local financial development matters for the growth of SACU countries, it could be concluded that such financial development alongside regional financial integration will continue to influence future national growth rates.

Following this introduction, the paper presents the mainstream theories and evidence on the potential links between financial development and economic growth. This is extended to include the effects on economic growth of cross-border financial transactions and intermediation. Next, the links and background of the SACU countries is briefly highlighted. Analytical framework is then presented and empirical results discussed. The last section provides the conclusion.

2. Financial Intermediation and Economic Growth: Theory and Evidence

¹ The memberships of SACU are Botswana, Lesotho, Namibia, South Africa and Swaziland.

² The CMA comprises of all members of SACU except Botswana.

The theory

The alternative views on the links between financial intermediation and economic growth focus on the key functions of financial systems in the saving-investment-growth nexus. These include acting as an effective conduit firstly for channeling funds from surplus to deficit units by mobilizing resources and ensuring an efficient transformation of funds into real productive capital. Secondly, financial intermediation transforms maturity of the portfolios of savers and investors, while providing sufficient liquidity to the system as the need arises. The third effect is reducing risks from the system through diversification and techniques of risk sharing and pooling (Nissanke and Stein 2003).

Schumpeter (1934) in 1912 was among the first to point out that banks facilitate technological innovation in their role as financial intermediaries. His argument focuses on the ability of banks to allocate savings more effectively. This they do by assembling savings, evaluating investment projects, monitoring managers and facilitating transactions. Because of economies of scale banks can achieve these at lower costs. On the other hand authors like Goldsmith (1969), McKinnon (1973) and Shaw (1973) emphasize the role of financial intermediation in supplying the capital accumulation required in economic growth. By lowering financial market frictions, domestic savings are increased and attract foreign capital attracted.

Recent theoretical studies have tried to establish precise mechanism through which financial systems influence economic development. For example, Greenwood and Jovanovic (1990) developed a model in which both financial development and growth are endogenously determined. With respect to the growth effects of financial development, they demonstrated that by pooling idiosyncratic investment risks and eliminating *ex ante* downside uncertainty about rates of returns, financial development can lead to faster growth. In the model proposed by Bencivenga and Smith (1991), it was shown that the development of banks increases economic growth by channeling savings to the activity with high productivity but offering risky and illiquid assets, while allowing individuals to reduce the risk associated with their liquidity needs. Roubini and Sala-i-Martin (1992) have developed a model showing that financial repression reduces the productivity of capital and lowers savings, thus hampering growth. To summarise these theoretical studies it is reasonable to claim that financial development will lead to stronger economic growth.

By extending these lines of arguments spatially to cross-border financial transactions and intermediation, it can be shown theoretically that the effects of financial integration on economic growth can be positive. For instance, under certain neoclassical conditions such as the existence of perfectly competitive markets, no information friction and absence of transaction cost and externalities, and once impediments to free capital mobility are removed, funds are expected to flow

from low marginal product to high marginal product countries. Since developing countries are believed to have high marginal product of capital due to their being capital poor, it is claimed that financial integration and globalization will help allocate increase resources to developing countries as the capital market works to equalize risk-adjusted marginal products of capital across borders (Nissanke and Stein 2003). Baldwin (1991) identifies five main channels, which foster economic efficiency in an economic and monetary union and consequently may have beneficial effects on output growth. These are:

- (i) Elimination of transaction costs;
- (ii) Improved allocation of common market capital;
- (iii) Intensified cross-border competitive pressures;
- (iv) Higher efficiency of corporate ownership; and
- (v) Increased output as a result of reduced and converged inflation rates.

Also, using the theoretical basis of an intertemporal borrowing / lending model as applied to cross-border capital trading it has been demonstrated that financial globalization/ integration can be beneficial especially to developing countries. The argument is that as financial integration allows capital to seek out its highest rewards, it provides developing countries opportunities for higher investment as well as consumption smoothing and insurance against shocks (Obstfeld and Rogoff, 1996). A similar line of argument based on the model of global portfolio diversification is used to emphasize the welfare gains associated with global risk sharing and shifting which is made possible from portfolio diversification through internationally integrated markets. The model predicts that international asset trading allows each country to hold a globally diversified portfolio of risky investments, resulting in substantial risk reduction through sharing. This is claimed to lead to an increase in world economic growth and national welfare (Nissanke and Stein 2003).

The following quotation sums up the theoretical predictions about the financial intermediation gains from economic integration:

“As a result of cross-border transactions, therefore, a nation’s resident can enjoy a higher standard of living-a time path of consumption that is higher, better adapted to their particular preferences, and not rigidly tied to the peculiarities of their geographical circumstances-than would otherwise be possible. What is true for the individual nation is equally true for the world as a whole. Cross-border transactions among countries permit a more efficient allocation of world resources than could otherwise occur and thereby increase world consumption possibilities” (Bryant, 1987: 88).

This statement though primarily applies to gains from trade, has equal applications to cross-border financial intermediation. Despite the theoretically suggested gains from cross-border financial transactions, Bryant (1987) was quick to add that:

“Not that each resident in each nation invariably benefits. Practical observation and economic theory agree that particular individuals... can be harmed. Nor can it be justifiably claimed that each nation, on balance, invariably benefits from all the international transactions conducted by or with its residents”(Bryant (1987: 89).

Indeed, several possible sources of harm from financial integration and monetary union can be identified. Chief among such costs are adverse consequences for the autonomy of national economic policies and the controllability of national economies. The autonomy of a nation's economic policy can be defined as the effectiveness of the nation's policy instruments in influencing national target variables such as inflation, output growth etc (Bryant 1987). With monetary and economic unions, which bring about greater interdependence and coordinated policies, the ability of a national government to achieve its economic goals by changing its monetary and fiscal policies is reduced because of possible spillover effects. These occur when a nation adopts a policy change and some of the consequences of the policy action spill across the nation's boundaries into the rest of the world (in particular to other members of the union) rather than influencing the ultimate target variable of the home government. In the same way the openness of nation's economy means that policy actions taken by foreign governments and non-policy shocks originating abroad spill over into the home nation. In the events of inefficiencies or when governments choose policies to maximize domestic objectives and ignore the externalities imposed on other countries, this possibility of spill-over can generate sub-optimal equilibria in the other nations.

As noted by Rogoff (1985: 210) gains from cooperation are only ensured when the appropriate domestic institutions are in place. In their absence or, in particular, when the level of development of such institutions varies across countries in a financial and economic union, this results in asymmetric distribution of the gains, with the highest gains (in terms of financial flows) accruing to the nation with most developed institutions. In these circumstances too, the possible adverse effects of foreign domestic policies or shocks noted above are further exacerbated in nations with poor institutional development.

Empirical Evidence

The vast majority of the empirical literature on the relationship between financial intermediation and economic growth has focused on domestic aspects – that is, intermediation where the lenders, borrowers, and the intermediating parties are all residents of a single nation and the asset-liability relationships are assumed to be denominated exclusively in the national currency unit. Also, the focus of most recent empirical studies has been to determine whether there is a significant causal link running from financial development to economic growth.

Goldsmith (1969), using data from 35 countries between 1860 and 1963 examined the correlation between financial intermediation and economic growth. He concluded that: ‘a rough parallelism can be observed between economic and financial development if periods of several decades are considered’. Similarly, McKinnon (1973) and Shaw (1973) reported close association between financial development and economic growth in a number of countries. In recent years, voluminous empirical researches have further been published which have shown that there is a relationship between financial intermediation and economic growth.

A trend among the empirical literature is to examine the relationship in a number of countries using either cross section or panel data techniques (see, for example Jung (1986), Roubini and Sala-i-Martin (1992), Demetriades and Hussein (1996) and Luintel and Khan (1999)). Another trend in the empirical literature is to examine the issue for a particular country using time series techniques, as for example, Odedokun (1989) for Nigeria, Lyons and Murinde (1994) for Ghana, Murinde and Eng (1994) for Singapore, Agung and Ford (1998) for Indonesia and Wood (1993) for Barbados. Levine (1997) provides a comprehensive review of the pre-1997 literature. Based on this review Levine concluded:

‘The preponderance of theoretical reasoning and empirical evidence suggests a positive, first-order relationship between financial development and economic growth. A growing body of work would push even most sceptics toward the belief that the development of financial markets and institutions is a critical and inextricable part of the growth process and away from the view that the financial system is an inconsequential side show, responding passively to economic growth and industrialization. There is even evidence that the level of financial development is a good predictor of future rates of economic growth, capital accumulation, and technological change’ (Levine, 1997: 688-689).

From this statement one would almost be tempted to conclude that the debate on the relationship between financial development and economic growth has been laid to rest. However, there are emerging bodies of evidence that oppose this view. The bulk of this opposing literature consists of time-series country-specific studies on the subject. Examples of such studies are Demetriades and Hussein (1996), Neusser and Kugler (1996), Berthelemy and Varoudakis (1998), Ram (1999), Sinha and Macri (2001) and Shan, et al. (2001).

Motivated by these conflicting results, Bloch and Tang (2003) using both time-series country-specific and cross-country methodologies provided further evidence on the issue for 75 countries. The majority of those studied was developing countries with emerging market economies. Using simple correlation coefficients between the ratio of private credit to GDP and GDP growth for individual countries, their results show a lack of robustness in the relationship between financial development and economic growth. Specifically, Bloch and Tang found that only 26 countries out of

75 showed a positive correlation with only one country having a significant relationship at 5% level; whereas, 49 countries showed a negative correlation, out of which 21 were statistically significant at the conventional 5% level. This further cast doubt on the conclusion that there is a positive correlation between financial development and economic growth. Even when a different measure of financial development was employed in the test, the results were not different. However, when the authors employed cross-country regression, they obtained a highly significant coefficient of the financial indicator-private credit to GDP- as explanatory variable of growth in GDP per capita. The coefficient was equally significant when a balanced panel data approach was used. Thus, there is contradiction between time-series studies, on the one hand and cross-country and panel data studies on the other.

In trying to explain the possible causes of this contradictory results, Bloch and Tang (2003: 250) suggested five reasons, three of which are relevant to this current study. The three reasons put forward were:

- 1) the cross-country approach involves taking averages of the key variables over lengthy periods, which ignores the evolution of the key variables and how they interact over time
- 2) the cross-country approach gives all countries, either small or large, an equal weighting since they are assumed to be homogeneous
- 3) even if a significant causal relationship is observed in a large sample of countries, it represents only an average relationship, which may or may not apply to individual countries in the sample.

With respect to economic and monetary union, despite the expected convergence in some aspects of the economies (e.g monetary and financial policies) due to policies coordination, the economies can still differ in many respects. This many include among others, the geographical size, population size, socio-cultural diversity, political stability and level of institutional development. All of these may cause heterogeneity in the pattern of development. It is therefore important that attempt is made to account for such heterogeneity among the countries.

The question of whether domestic financial markets will still matter in an integrated market has become a very important policy issue, especially since the emergence of the European Monetary and Economic Union (EMU). However, only very few attempts have been made to empirically examine the issue. These include, Jayaratne and Strahan (1996), Dehejia and Lleras-Muney (2003) and Guiso, Sapienza and Zingales (2003). These studies focus on within-country differences of the

effects of financial intermediation in an integrated market and they all show that local financial development matters.

Jayaratne and Strahan (1996) used the de-regulation of banking in different states of the United States between 1972 and 1991 as a proxy for financial development. They show that annual growth rates increased by 0.5 to 1.19 percentage points a year after a state deregulated its banks. Dehejia and Lleras-Muney (2003) study the impact of changes in banking regulation on financial development between 1900 and 1940. Guiso, Sapienza and Zingales (2003) study the effects of financial development within Italy, which has been unified from both political and regulatory point of view for some 140 years. They found that in the most financially developed regions per capita GDP grew 2% per annum more than in the least financially developed one. Also, they show that the chance of an individual starting a business increases by 5.6 percent if he moves from the least financially developed region to the most financially developed one; and the individual is able to do so at a younger age. As a result, on average entrepreneurs were 5 years younger in the most financially developed region than in the least developed one.

Evidence from developing countries is however very slim. An attempt to examine the role of Southern Africa financial intermediation in an economic union was made by Allen and Ndikumana (1998). Using four indicators of financial intermediation and three different panel techniques-simple OLS regressions; regressions including country-specific fixed effects; and regressions including a high-income dummy, they found a positive correlation between financial development and the growth of real per capita GDP for the Southern Africa Development Community (SADC). However, their study suffers from two major weaknesses as far as the question of the relevance of domestic financial intermediation is concerned. First, it fails to take into consideration the heterogeneous nature of the economies concerned. In other words, the study suffers from the same pitfall of most cross-country analyses as noted earlier. Second, studies have shown that the degree of financial and monetary integrations among the SADC countries is still very weak (See for instance, Jenkins and Thomas, 1998: 153-156; and ADB, 2000: 152-154). By contrast, it has been shown that the financial sectors in the SACU countries are highly integrated because of the monetary union among most member countries.

3. Background to the Economies of Botswana, Lesotho, Swaziland and South Africa (the BLSS countries)

In this section we review the link among the economies in SACU. A brief overview of their performance is provided highlighting some of the differences among the economies.

Official Integration Arrangements and Implication for the BLSS Countries

The two main links among the economies of Botswana, Lesotho, South Africa and Swaziland (BLSS) are: their membership of Southern African Customs Union (SACU) and except for Botswana, the Common Monetary Area (CMA). They are also members of the Southern African Development Community (SADC), besides being intimately linked by geographical location.

The first formal agreement, which laid the foundations for the SACU, was signed in 1910 when the Union of South Africa was formed. This agreement has been amended and renegotiated in 1911-13, 1969 and 1975. The major objectives of the 1910 agreement required the free flow of goods among the member countries, a common external tariff, with the smaller countries agreeing to maintain a custom duty structure similar to that in South Africa at all times. Also, there was to be free movement of labour³ among member countries (World Bank, 1996)⁴.

When the agreement was re-negotiated in 1969, South Africa agreed to compensate the partner countries for the loss of fiscal discretion, the price increasing effect of the customs, the implicit protection provided for South African industry, and the industrial polarization of the tariff structure⁵. The compensation agreed upon in 1968 was set to 42 percent of the respective share of customs revenue (Guillaume and Stasavage, 1999). In addition, since 1977, SACU has also included a stabilization factor to counteract variations in payment. As a result, SACU transfers represent an important government's receipts for the smaller countries, in particular Lesotho and Swaziland. The two countries also receive large remittances from migrant labour working in South Africa (mainly in the mines).

A second arrangement among BLSS, which closely links them together, is the Common Monetary Area (CMA). This was formalized in 1974 and then known as the Rand Monetary Agreement (RMA). Hitherto, particularly, between 1910 and 1960 there were no restrictions on the transfer of money and capital within the area encompassing South Africa, Swaziland, Lesotho and Botswana because the common currency in use was the pound sterling. This was replaced in 1961 by the South African Rand (World Bank, 1996). Among other things, RMA provided for Botswana, Lesotho and Swaziland (BLS) to issue their own currencies, which would be legal tender each within own territory only and were to circulate side by side with the South African Rand. Each currency was to be backed by the South African Rand and was to be pegged at par with the South African

³ This mainly exists in principle, but in practice several official barriers still prevent free movements of labour among member countries.

⁴ Namibia joined the union after political independence in 1990

⁵ It has also been suggested that the financial linkages of the SACU were used as tool by the apartheid regime to strength the positive collaboration between South Africa and its small, dependent neighbours after these countries gained political independence from Britain in the mid 1960s.

Rand (CBL, 1996). The agreement also provided for the countries to establish their own central banks. Swaziland established an independent monetary authority in 1974, converted to the Central Bank of Swaziland in 1979, and issued its own currency, the lilangeni, pegged at par to the South African Rand. The monetary authority of Lesotho was established in 1979 and converted to Central Bank of Lesotho in 1982. The Lesotho government introduced the loti in 1980, which was fixed at par with the South African Rand.

Botswana on its part exited the RMA in 1976, and issued its own currency, the pula. The pula was initially linked to the US dollar at a rate, which maintained parity to the rand. Beginning in 1980, the pula was pegged to a basket of currencies including the rand, the Zimbabwe dollar, and the SDR as a proxy for trade with the rest of the world (Guillaume and Stasavage, 1999). Since the 1990, the pula has been floated, but in practice, it has been informally pegged to the rand. Other main departures from the CMA involved the imposition of strict capital controls and the obligation to keep all reserves within the central bank rather than with commercial banks (Guillaume and Stasavage, 1999).

In 1986, the RMA was replaced by the Common Monetary Area (CMA) Agreement. This was a set of three agreements. There was a Trilateral Agreement and within the context of that Trilateral Agreement were two Bilateral Agreements, one between the RSA and Lesotho and another between the RSA and Swaziland (CBL 1996). Among the features of the Agreement were:

- (i) Issuing of national currency (whilst the rand remained legal tender);
- (ii) The freedom for each member country to manage its gold and foreign reserves;
- (iii) Free flow of funds for current and capital account transactions within the contracting parties.

Of crucial importance is item (iii), which is incorporated in Article 3 of the Agreement. By acceding to this clause, members indicated that they subscribe to the principle that capital should flow to any country where it would earn the highest returns. It rejects, again by implication, the notion that their national interests can be best served by attempting to control long-term capital flows. Consequently, returns will dictate the general direction of movement of long-term capital among members. Thus, instead of attempting to administratively control movements of capital the viable alternative would be for members to seek to eliminate distortions that could lead to long-term capital outflow or lower than optimal capital inflows.

By being members of the SACU/CMA has further strengthen the financial and economic integration that existed among the BLSS countries. However, the level of development of financial systems among the countries is comparatively different, with South Africa having the most

developed and most sophisticated financial system. This asymmetry could cause imbalances in financial flows and also have serious implication for the contributions of domestic financial intermediation to economic growth. The imbalances in financial flow could further be exacerbated by domestic institutional, structural and economic policies, which may be unfavorable at the home front.

Economic Performance among the BLSS

The information in table1 reveals wide disparities in economic performance of these countries. South Africa is the largest economy in the Southern African region, and perhaps the largest in the sub-Saharan Africa. Her per capita income in 1996 was second only to Mauritius in the whole of sub-Saharan Africa. From a level of \$770 in 1970, the per capita income of South Africa rose to a level of \$3520 in 1996 and \$3310 in 1998, which places her among the upper middle-income countries of the world. Most of the neighbouring economies (particularly the SACU countries, and to a large extent other SADC countries) depend on South Africa in the area of trade.

Botswana, Lesotho and Swaziland gained political independence about the same time with similar socio-economic background. However, the passage of time has witnessed a divergence in the rate and pattern of their growth and development. For instance, while Botswana has experienced a remarkable steady growth of per capita income from \$140 in 1970 to \$3210 in 1995 and \$3070 in 1998, Lesotho on the other hand, has recorded a weak growth for the same period with per capita income growing from \$100 in 1970 to \$660 in 1996 and fell to \$570 in 1998. The growth records of Botswana place her among the upper middle-income countries of the world, while Lesotho remains among the low-income countries. Swaziland has experienced a moderate growth over the years, from per capita income of \$230 in 1970 to \$1210 in 1996 and rose further to \$1390 in 1998, placing Swaziland among the lower middle-income countries of the world.

Table 1: Per Capita GNP (current US \$ and % compound annual growth rate)

Country	1965	1970	1975	1980	1985	1990	1996	1998
Botswana	70	140	430	1020	1120	2490	3210 ^b	3070
% growth		14.86	25.16	18.85	1.88	17.32	5.21	
Lesotho	60	100	250	440	380	550	660	570
% growth		10.75	20.11	11.97	-2.88	7.67	3.08	
South Africa	530	770	1590	2490	2100	2860	3520	3310
% growth		7.75	15.60	9.38	-3.35	7.87	3.52	
Swaziland	180	230	570	910	760	1110	1210	1390
% growth		5.02	19.90	9.81	-3.53	7.87	1.45	

Source: World Bank, *World Development Indicators* 1998 in Allen and Ndikumana (1998) and African Development Bank, *African Development Report 2000*

GNP is in current US\$, World Bank's Atlas method.

^b For Botswana, GNP for 1996 is missing; the value reported here is for 1995

Table 2 provides country-specific values of the mean and standard deviations of selected macroeconomic and financial indicators for the period 1980 to 2000. From the table one can see that using four indicators South Africa has the highest level of financial intermediation, which is closely followed by Botswana, while Swaziland and Lesotho lagged behind in that order. The table also reports the values for growth in GDP, inflation rate, exchange rate and the interest rate differential (the difference between lending and deposit rates). Basically, on average the inflation rates for South Africa, Swaziland and Lesotho were the highest (in that order), and they have tended to converge. The mean inflation rate was lowest in Botswana. Similarly, the mean exchange rate was the same for Lesotho, South Africa and Swaziland, since they are members of the CMA. The mean exchange rate was lower in Botswana than the rest of the countries. Also, there was greater variability of the rand and its associated currencies than the Botswana pula as reflected by their standard deviations. According to theory, the interest rate spread, which represents the cost of financial intermediation in a competitive environment should fall as the level of financial intermediation increases. As shown in table 2, Botswana has the lowest spread, closely followed by South Africa, with Swaziland coming next, while Lesotho recorded the highest spread. Also, Lesotho shows a higher variability on the spread as reflected by its standard deviation.

It is apparent that South Africa and Botswana have a comparable level of FI, far higher than the rest of the SACU countries. Swaziland lies in the middle, while Lesotho is at the bottom. A question that emerges is, to what extent is the observed disparity in growth patterns explained by the differences in their financial development? Also, have the likely effects of their financial intermediation on growth been influenced by being members of the monetary union?

**Table2: Selected Macroeconomic and Financial Variables (1980:1 – 2000:1
Balanced Sample)**

Country	FI1		FI2		FI3		FI4	
	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.
Botswana	46.63	7.45	79.54	15.08	72.30	10.92	117.00	15.17
Lesotho	17.83	3.85	34.28	4.11	66.77	11.29	99.52	11.47
South Africa	57.76	9.50	49.72	6.26	89.05	2.16	117.15	12.31
Swaziland	20.80	4.12	28.13	3.59	79.99	2.46	100.54	10.06
Country	GY		INF		ER		IDR	
	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.	Mean	Std.D.
Botswana	3.59	1.27	2.53	0.89	3.08	0.95	3.26	1.73
Lesotho	3.54	1.81	2.61	1.49	4.05	1.22	7.19	2.59
South Africa	3.03	2.18	2.73	5.20	4.05	1.22	4.46	1.04
Swaziland	3.67	2.74	2.62	1.53	4.05	1.22	6.80	0.90

Note: FI1 is the ratio of credit extended to the private sector by commercial banks to GDP; FI2 is the ratio of liquid liabilities of commercial banks to GDP, where liquid liabilities equals demand deposit plus time and savings deposits; FI3 is the ratio of commercial bank assets to the sum of commercial banks and central banks' assets; and FI4 is a composite index computed from the combination of the other three indexes.

Source: Aziakpono (2003)

4. Framework for the Analysis

Variables and data sources

Two indicators of financial intermediation are employed in this study. This follows most previous empirical studies. The first indicator is the ratio of private credit to nominal GDP (FIC), where private credit is the credit extended to the private sector by commercial banks. This ratio indicates the importance of the role played by the financial sector, especially the deposit money banks, in the financing of the economy. It isolates credit issued to the privates sector from credit issued to governments, government agencies, and public enterprises. Also, it excludes credits issued by the Central Bank ⁶ (Levine, et al 2000). The underlying assumption is that credit provided to the private sector generates increases in investment and productivity to a much larger extent than do credits to the public sector. It is also argued that loans to the private sector are given under more stringent conditions and that the improved quality of investment emanating from financial intermediaries' evaluation of project viability is more significant for private sector credits⁷ (Levine and Zervos, 1998, Levine 1998).

The second indicator of financial intermediation is the ratio of liquid liabilities of commercial banks to nominal GDP (FIL). Liquid liabilities equal demand deposit plus time and savings deposits. This method, which is also very commonly referred to in the literature (e.g. Demetriades and Hussein, 1996; and Luintel and Khan, 1999) provides an alternative to a broad money ratio especially when dealing with developing countries. The argument is that in developing countries, a large component of the broad money stock is currency held outside the banking systems. Therefore, in principle a rising ratio of broad money to income may reflect the more extensive use of currency than an increase in the volume of bank deposits. Following this argument, bank deposit liabilities, which excludes currency in circulation from the broad money stock have been used as a better measure of financial depth and thus of the overall size of the financial intermediation. This indicator however has been criticized in a number of ways (see Aziakpono, 2003).

⁶ A general finding is that Central Banks lose relative importance as one moves from low to high-income countries, and other financial institutions gain relative importance. Thus, by excluding Central Bank Credit, Private Credit provides a measure of relative size of financial intermediaries (Beck et al 1999).

⁷ However, where private loans are politically influenced, this ratio may not be efficient.

Economic performance is estimated using the natural log of real GDP and growth in real GDP. The nominal GDP of each country was deflated using their respective consumer price index (CPI) at 1990 base year.

Other variables were added to control for the possible effects of other growth determining factors. These include, inflation, size of government, a measure of openness to trade and exchange rate variable. A very important variable that is commonly added in empirical studies (Levine 1997: 707), but could not be included in the present analysis due to data limitation is human capital accumulation often measured by level of educational attainments of the population. Growth theory suggests a positive relationship between education and economic growth (see Barro 1991)

The inflation rate and size of government expenditure are commonly used as indicators of macroeconomic stability (Easterly and Rebelo, 1993; Fischer, 1993; Allen and Ndikumana, 1998 and Levine et al 2000). It is argued that high inflation distorts economic activity and reduces investment in productive enterprises. This reduces economic growth. Government expenditure could reduce economic growth because of the crowding out effect on private investment and the inflationary pressures it can lead to due to the need for monetary financing of fiscal deficits (Allen and Ndikumana, 1998). Inflation is measured in the analysis as the percentage change in CPI (at 1990 base year). The size of government is measured as the percentage share of government expenditure in GDP.

The effect of international trade on growth is captured by the openness variable, which is measured as the sum of imports and exports as a percentage of nominal GDP (Levine et al 2000). Theoretically, the effects of trade can be negative and positive; as such the net effects can only be determined empirically. The exchange rate variable has been introduced to capture the price distortion effects it may have on the economy. The nominal exchange rate is used.

In order to avoid the problem of simultaneity bias, following the practice in most empirical studies, the lagged values of the variables, including that of the indicator of financial intermediation, were used. Since the series are quarterly, the fourth lag was employed for most variables, except for the exchange rate and openness variables where preliminary experiments indicated that the first and second lags respectively performed better. Contemporaneous values of the dependent variables were used. All the data came from IMF International Financial Statistics 2001 and earlier issues.

Econometrics Techniques

A panel data econometric technique was adopted for the analyses. The objective of the econometric technique is to overcome two major weaknesses of most cross-country approaches. As

note earlier, these approaches give all countries, either small or large, an equal weighting since they are assumed to be homogeneous; and the coefficients represent only an average relationship, which may or may not apply to individual countries in the sample (Bloch and Tang 2003: 250). To this end the econometrics analysis applied the Zellner seemingly unrelated regressions estimation (SURE) method following Murinde (1996). The distinguishing features of SURE as a method for pooling time-series and cross-sectional data are: the assumption of contemporaneous correlation in the disturbances, and that each cross-sectional unit has a different coefficient vector (Judge et al 1988)⁸. The Zellner method according to Murinde (1996) takes the system of ‘seemingly unrelated regression equations’ (SURE) as a single large equation to be estimated. Following Hsiao (1986:12) we start by postulating a separate regression for each individual country thus:

$$y_{it} = \alpha_i^* + \beta_i' x_{it} + e_{it} \quad \begin{matrix} i=1, \dots, N \\ t=1, \dots, T \end{matrix} \quad (1)$$

where y_{it} is the measure of economic performance and x_{it} is the vector of explanatory variables including the measure of financial intermediation. The idea is to estimate each equation simultaneously for Botswana, Lesotho, South Africa and Swaziland. The underlying assumption of the Zellner method is that though equation (1) has four variants, the four equations are related through the non-zero covariances associated with the error term. Thus, while it is assumed statistically that the errors for each country taken separately conform to the standard linear regression model⁹ each country’s errors may also correlate with the contemporaneous errors of the other countries. There is reason to believe that common factors may influence macroeconomic and financial data from the SACU countries¹⁰ and therefore increase the chances of the presence of contemporaneous correlation in the model.¹¹

In addition to the potential for contemporaneous correlation, the varying degrees of economic and financial development across a cross-section of the countries, besides other distinct structural differences that can endogenously determine their financial intermediation development and economic performance, is likely to lead to variations in the coefficients of the model and as such the residual variances that differ in a predictable way. However, to justify the use of the method, the analysis commenced by testing these assumptions following the steps outlined below:

⁸ For a detail description of the SURE method see Judge et al (1988: chapter 11)

⁹ See Judge et al (1988: 145-146) for a detail list of this assumptions

¹⁰ Apart from belonging to Customs Union, three of the countries-Lesotho, South Africa and Swaziland are members of the Common Monetary Area (CMA), which require convergence in their monetary and financial policies. The SACU and CMA allow for free movement of goods, labour and funds. Also, the CMA arrangement mean single exchange rate, with the currencies of the other countries pegged at par to the South African rand, and the rand freely circulating in the other economies. Thus the SACU countries may be affected by the same shock (Aziakpono, 2003)

¹¹ Contemporaneous correlation occurs when the disturbance terms in a set of equations are correlated at a point in time.

In the first step the presence of contemporaneous correlation was tested for, following the procedure outlined in Judge et al (1988: 456). In the context of the four-equation system (1) above, the null and the alternative hypotheses for this test are:

$$H_0 : \sigma_{12} = \sigma_{13} = \sigma_{14} = \sigma_{23} = \sigma_{24} = \sigma_{34} = 0$$

$$H_1 : \text{at least one covariance is non-zero} \quad (2)$$

where $\sigma_{ij} = E[e_{it}e_{js}]$ and $t = s$ (3)

According to Judge et al (1988) an appropriate test statistic is the Lagrange multiplier statistic suggested by Breusch and Pagan (1980). In the four-equation case, this statistic is given by:

$$\lambda = T(r^2_{21} + r^2_{31} + r^2_{41} + r^2_{23} + r^2_{34} + r^2_{42}) \quad (4)$$

where r^2_{ij} is the squared correlation:

$$r^2_{ij} = \frac{\hat{\sigma}^2_{ij}}{\hat{\sigma}_{ii}\hat{\sigma}_{jj}} \quad (5)$$

Under H_0 , λ has an asymptotic χ^2 - distribution with 6 degrees of freedom. If the λ is greater than the critical value at the specified significant level, then we reject the null hypothesis.

In the second step, following Hsiao (1986) and Kuh (1963) the analysis of covariance is used to test the hypothesis of homogeneity of the countries. The question of whether the countries have homogenous coefficients is examined by testing two separate hypotheses, namely: (1) that the slopes and intercepts are simultaneously homogeneous among individual countries; and (2) that the regression slopes are collectively homogeneous. For simplicity we limited the tests to variations across countries, while variations over time are assumed constant¹².

Following Hsiao (1986:12-16) in order to test the sets of hypotheses, two restrictions are imposed on equation (1):

H_1 : Both slope and intercepts are the same. That is,

$$y_{it} = \alpha^* + \beta' x_{it} + u_{it} \quad (6)$$

H_2 : Regression slope coefficients are identical, and intercepts are not. That is,

$$y_{it} = \alpha_i^* + \beta' x_{it} + u_{it} \quad (7)$$

Equation (1) is the unrestricted model, (6) is the pooled regression and (7) is the individual-mean or cell-mean corrected regression model. Using least squares the three models were estimated

¹² Although there are reasons to believe that over time variations among the parameters are possible. The change in the political environment in South Africa since 1994 is an example.

and the corresponding residual sum of squares (S_1 , S_2 and S_3) were obtained. Under the assumption that the u_{it} are independently normally distributed over i and t with mean and variance σ^2_u , F tests can be used to test the restrictions postulated by (6) and (7). In effect, equations (6) and (7) can be viewed as (1) subject to different types of restrictions. For example, the hypothesis of overall homogeneity can be viewed as (1) subject to $(K+1)(N-1)$ linear restrictions:

$$\begin{aligned} H_1 : \alpha^*_1 &= \alpha^*_2 = \dots = \alpha^*_N, \\ \beta_1 &= \beta_2 = \dots = \beta_N. \end{aligned} \quad (8)$$

On the other hand, the hypothesis of homogeneous slope and but heterogeneous intercept can be viewed as equation (1) subject to $(N-1)K$ linear restrictions:

$$H_2 = \beta_1 = \beta_2 = \dots = \beta_N. \quad (9)$$

This implies that, application of the analysis-of-covariance test is equivalent to the ordinary hypothesis test based on sums of square residuals from linear-regression outputs.

The corresponding F statistics and their degrees of freedom are:

$$F_1 = \frac{(S_2 - S_1)/[(N-1)(K+1)]}{S_1/[NT - N(K+1)]}. \quad (10)$$

with $(N-1)(K+1)$ and $N(T-K-1)$ degrees of freedom, and where S_1 and S_2 are the residuals sum of squares for equations (1) and (6) respectively;

and

$$F_2 = \frac{(S_3 - S_1)/[(N-1)K]}{S_1/[NT - N(K+1)]}. \quad (11)$$

with $(N-1)K$ and $NT-N(K+1)$ degrees of freedom and S_3 is the residual sum of square for equation (7). Given the degrees of freedom, if the F_1 statistic is significant it means the parameters are not homogeneous, the reverse is the case if it is not significant. If the hypothesis of overall homogeneity is rejected then, one can proceed to test whether there is slope heterogeneity, the second hypothesis. If given the degrees of freedom, F_2 is significant, then the hypothesis of homogeneous slopes is rejected. When this occurs, it would seem reasonable to allow variations in parameters across cross-sectional units to take account of the interindividual heterogeneity (Hsiao, 1986: 128).

4. Empirical Results

The empirical analysis begins with the tests of contemporaneous correlations among the error terms and the hypotheses of homogeneity among the cross section of the countries. This was

followed by the Zellner estimation results of the alternative models. All the estimations were carried out following the routine performed in E-Views software. Two sets of the model were estimated. In the first set, the growth in real GDP was used as the dependent variable in line with growth theory; while in the second set, the log of real GDP was used as the dependent variable. Also, two variances of each set of models were estimated, with each including the alternative indicator of financial intermediation as the explanatory variable.

By applying the test procedure outlined in equations (2) to (5) in testing for contemporaneous correlation, we obtained from the least squares residuals the following λ values corresponding to the alternative models estimated:

Eq1a: GRY (FIL) $\lambda = 45.0$

Eq1b: GRY (FIC) $\lambda = 32.77$

Eq1c: LRY (FIL) $\lambda = 28.5$

Eq1d: LRY (FIC) $\lambda = 68.9$

The 1% critical value from the χ^2 - distribution with 6 degrees of freedom is 16.81 (Gujarati, 2003: 817). Since the computed values of λ are greater than the critical values we reject the null hypothesis and conclude that contemporaneous correlation does exist.

The results of the analysis-of-covariance techniques, as discussed above, for testing the overall homogeneity and slope homogeneity across cross-section of the countries are reported in table 3. From the statistics, in all the alternative specifications, the tests failed to accept the hypotheses of overall homogeneity and slope homogeneity. The hypotheses were rejected even at 1% level of significance. Thus, neither the intercept nor the slope coefficients can be assumed to be the same across the cross-section of the countries. In such a circumstance, as noted by Hsiao (1986) it would be appropriated to use an estimation method that allows the coefficients to differ across the cross-sectional units.

Table 3: Covariance tests for regression-coefficient homogeneity across-sectional countries

Equation / Hypothesis	F-Stat	Degrees of Freedom		F _(table-value)	Decision
		Numerator	Denominator		
Eq1a: GRY (FIL)					
H ₁	8.05	15	216	2.13	Reject
H ₂	2.87	27	216	1.29	Reject
Eq1b: GRY (FIC)					
H ₁	8.45	15	216	2.13	Reject
H ₂	2.94	27	216	1.79	Reject
Eq1c: LRY (FIL)					

H ₁	592.4	15	216	2.13	Reject
H ₂	9.16	27	216	1.79	Reject
Eq1d: LRY (FIC)					
H ₁	381.66	15	216	2.13	Reject
H ₂	12.05	27	216	1.79	Reject

Note: H₁ is the hypothesis of overall homogeneity and H₂ is the hypothesis of slope homogeneity. The tests were based on the estimated model (1) using least squares method. Eq1 uses growth in real GDP as the dependent variable, and FIL and FIC were included among the explanatory variables in the option (a) and (b) respectively; while in the same vein Eq2 uses the log of real GDP as the dependent variable.

In what follows we highlight the Zellner estimation results, which account for the variable-coefficients. The results corresponding to each model are presented in tables 1-4 in the Appendix. In estimating the model using the Zellner SURE method, we employed the system approach instead of a single equation approach. This is because Zellner (1962) has shown that the regression coefficients obtained by a joint estimation approach were asymptotically more efficient than by the equation-by-equation least squares approach. Zellner, further noted that the gain in efficiency by the joint estimation method as compared to the single equation least squares approach can be quite high if the explanatory variables are less correlated and the disturbances are highly correlated (Aziakpono, 2003).

In general the explanatory variables demonstrated a high explanatory power, especially in the model using the log of real GDP. The explanatory power of the models with growth of real GDP as the dependent variable ranges from 0.364 to 0.546, with an average of 0.468 adjusted R². This shows that some growth determining variables must have been omitted from the model. One such variable as noted earlier is human capital, which theory predicts to have positive effect on growth (see Barro 1991). This has been confirmed by Levine et al (2000) who obtained a highly significant positive coefficient of average years of secondary schooling as an indicator of human capital development. Thus it would be appropriate that efforts should be made in subsequent studies to search for other growth-determining factors and incorporate these as control variables in the model.

The adjusted R² in the model with log of real GDP ranges from 0.7806 to 0.9536, with an average of 0.903. Thus in this model, the included variables explained about 90 percent of the systematic variations in the log of real GDP. This is reasonably high. Comparing the models with alternative indicators of financial indicators also reveal some differences in their explanatory powers. Such difference was more pronounced in the growth in real GDP model than it is in log of real GDP model.

Effects of financial intermediation indicators

Table 4 provides a summary of the effects of financial intermediation on economic performance in each of the countries. In general the signs of the coefficients of financial intermediation obtained among the countries and across the models were mixed. Using liquid liabilities of commercial banks as indicator of financial intermediation in the growth in the real GDP model, we obtained positive coefficients for Lesotho and South Africa, while Botswana and Swaziland have negative signs. Only South Africa was however significant (at one percent). Using credit to private sector as the indicator of financial intermediation also produced similar signs in the growth in real GDP model, except that the coefficient in Botswana became very significant. This implies that the development of the financial sector in Botswana and Swaziland have not promote economic growth as theory suggests. But in South Africa it does appear that there is a significant positive influence of financial intermediation on growth. In Lesotho, while the development of financial intermediation has the potential to positively influence economic growth, however such impact is not significant.

In the model using the log of real GDP the coefficient of liquid liabilities was positive for Botswana and South Africa and significant at the one percent level. In Lesotho and Swaziland, the coefficient was negative, but only in Lesotho was it significant (at one percent). On the other hand, the coefficient of credit to private sector was positive for Botswana, Lesotho and South African with the coefficient being very significant (at one percent) in Botswana and South Africa. This coefficient was however negative and insignificant in Swaziland.

Overall, using both indicators the evidence on the positive effects of financial intermediation on growth within the SACU is weak. This finding agrees with an earlier study by Allen and Ndikumana (1998) for the SADC countries of which SACU is a part. They argued that the weak link between financial intermediation and economic growth might reflect pervasive inefficiencies in the credit allocation mechanism. They then suggest the strengthening of financial sector legislation and banking system supervision as one way of enhancing the financial sector efficiency. However, since their study did not provide country-specific results, it would be difficult to generalize their conclusions. A country-specific result as shown in the analysis indicates some variation across the countries of SACU in terms of the gains from financial intermediation.

In all, it is evident that South Africa enjoys the highest gain from financial intermediation among the SACU countries. From all the indications, it is shown that deposits mobilized within the economy are used to finance private investment with high level of efficiency which then help to boost economic performance in the economy. It is also possible that in the quest for higher returns, deposits mobilized in the other economies are invested in South African economy which further

helps to boost the performance of the economy. This is made easier because of the SACU and CMA arrangements.

As for Botswana, the results show that the country gains from financial intermediation, however the evidence is not strong. While there are indications that financial development promotes economic performance in general, its effect on the growth of the economy is rather disappointing. One would have expected that given the high level of financial development in the country (closely following South Africa), its effects on growth should be strong and positive. One possible explanation of this outcome, is that given the dependence of the economy on export of diamond, which is controlled by the Government, and the obligation to keep all reserves within the central bank rather than with commercial banks (Guillaume and Stasavage, 1999), it is possible that the economy is then driven by the efficiency of government management of these resources rather than the efficiency of bank financing of private sector investment. This seems to be supported by the results on the coefficient of the ratio of government expenditure to GDP, which exerts a positive and highly significant effect on economic performance in all the models. This is in sharp contrast to other countries of the SACU, except South Africa where in some case the variable exerts a weakly significant positive effect on economic performance. Thus, it would seem reasonable to regard Botswana's case in Patrick's (1966) term as "demand following finance" rather than 'supply leading finance'. Since it would appear that the development of the financial system is merely responding to the growth of the economy generated from other sectors of the economy and not actively promoting growth¹³.

Lesotho on its part demonstrates some positive effects of financial intermediation on the economic performance. However, the effects are not significant. As the results indicate, a major problem lies with the use of the deposits mobilized in the economy. It is apparent that the bulk of the deposit resources (liquid liabilities) of the commercial banks are not used for financing private domestic investment. This confirms the findings of Aziakpono (2003) that economic growth negatively imparts on financial intermediation in Lesotho. Thus, as income increases the level of financial intermediation falls. As he argues this pattern may be due to the fact that as income of individuals and firms increase many tend to operate dual accounts-one with South African Banks across the border and the other with domestic banks. It is possible that the larger part of their funds are held across the border and most of their financial transactions are carried out there rather than at

¹³ It has been suggested that in Botswana, the availability of income to the government from the exports of the diamond producing sector allowed the state to 'but off' the demands of politically important and right groups in the economy, while continuing to increase social services benefiting the poor. This has allowed Botswana to retain political stability and widely accepted rule by the same party since independence (See Johnson and Martin, 1986)

home, given the better services and higher interest rates offered in South Africa. Besides, in the light of the findings of the present study, it is also possible that the commercial banks may have been investing the larger part of the customers' deposits (liquid liabilities) with them outside the economy.

This should not post any difficulty. Apart from the CMA arrangement which makes capital mobility easy, all the banks in the economy are branches of banks from South Africa, with obligations and incentives to obey directives from their headquarters as well as the laws governing their domestic operations.

Apart from the above argument, other possible explanations for the poor contribution of financial intermediation to growth in Lesotho are: poor institutional capacity- a weak legal system to enforce contracts and debt repayment, confusion on property rights (Hernando de Soto, 1999), the weak banking institutions themselves, and poor entrepreneurial capacity. The specific impacts of these factors on the development of financial intermediation in Lesotho however need to be investigated for appropriate policy recommendations.

Despite the foregoing, there is hope that Lesotho could improve its gain from financial intermediation. As can be seen from the table 4, the coefficient of credit to the private sector is positive though not significant. This means that there is some efficiency in the few private investments financed by the banks, with a potential to stimulate growth of the economy. The implication for policy is that efforts geared towards promoting domestic investment (such as building domestic entrepreneurial capacity) and encouraging banks to finance investments within the economy will be desirable. In this regard, the recent efforts by the Central Bank of Lesotho in encouraging greater financial intermediation through creating postal banking arrangements in the rural areas that presently have almost no access to banking facilities, is a step in the right direction.

The case of Swaziland looks gloomier than in the other countries in terms of gains from financial intermediation. As the results show (table 4), all the coefficients of financial intermediation have negative signs though none was significant at the standard levels of significance. This indicates that the developments in the financial system are actually prohibiting growth of the economy. Even more worrying is the fact that the efficiency of domestic investments financed by banks seems doubtful, as shown by the negative coefficients of private credits across all models used. This result seems to echo the concerns raised in the World Bank (1996) studies of the Swaziland financial system. The study observed a declining trend in the level of performance of the financial system- especially the commercial banking system- and predicted further decline in the future. The problems are similar to those in Lesotho. However, it seems to be more pronounced now when the gains the

Swaziland economy used to enjoy during the economic instability and political uncertainty in South Africa, have now ceased to flow to Swaziland since the end of the apartheid in South Africa. As noted by the World Bank (1996), economic instability and political uncertainty in South Africa in the 1980s led to increase in corporate investment in Swaziland, which serves as an outlet to investors from South Africa. With the end of apartheid in South Africa, new investment opportunities in Swaziland have declined which in turn affected banking activities.

Table 4: Financial Intermediation and Economic Performance- SURE Estimation Results

Country / Variable	Model 1 (GRY)	Model 2 (LRY)
Botswana		
FIL	-0.042 (-0.49)	0.02 (9.05)a
FIC	-1.71 (-7.32)a	0.019 (3.48)a
Lesotho		
FIL	0.017 (0.84)	-0.011 (-6.89)a
FIC	0.297 (1.34)	0.0004 (0.19)
South Africa		
FIL	0.51 (4.8)a	0.01 (14.69)a
FIC	0.018 (1.79)a	0.002 (6.13)a
Swaziland		
FIL	-0.41 (-.41)	-0.005 (-0.97)
FIC	-0.57 (-1.57)	-0.001 (-0.14)

Note: a-significant at 1% level of significance, b-significance at 5% level of significance and c-significance at 10% level of significance.

Effects of the controlled variables

Tables 1 to 4 in the Appendix report the regression results with all the controlled variables. Overall openness to trade has a negative impact on growth in most countries of the SACU. Apart from South Africa where the coefficient of openness to trade was positive and significant, in the remaining three countries the coefficient was negative and significant. This implies that openness to trade has only stimulated growth in South Africa, while indeed it has inhibited growth in the other countries. A possible explanation is that since imports dominate the trade in these countries, except for South Africa, and apparently most imports are consumer goods, this may tend to crowd out domestic production, thus inhibiting growth.

The empirical results on government expenditure are mixed. In Botswana the coefficient was positive and significant throughout the entire models. This may reflect a high level of prudence in the management of the resources of the economy by the government. In the remaining countries, the negative coefficient dominates and was significant in most cases. The results also show that inflation

has the potential to inhibit the growth of the economies as indicated by the negative coefficients of inflation variable, but it was not significant. Allen and Ndikumana (1998) obtained similar result for all the SADC countries. As noted by them, this may be due to the fact that the countries experienced only a moderate inflation. Thus, it does appear that the inflation control measures among SACU countries are yielding the desired results. Lastly, the coefficients of the exchange rate were positive and significant in most of the equations. A one-period lag of the exchange rate variable was used, since preliminary experiments show the one-period lag performs better. This implies that the response of the economies to exchange rate movements is quite fast with a minimum lag. Thus the use of exchange rate management as a tool of macroeconomic management, and the smaller countries of the SACU will benefit as they continue to align their exchange rate policies to that of South Africa.

5. Conclusion

This paper has examined for the SACU countries, whether domestic financial intermediation matters in an integrated financial market. Using two indicators of financial intermediation and the Zellner seemingly unrelated regression estimation method, which enable us to account for the variations across the countries and the fact that they are financially integrated, mixed evidence for the importance of domestic financial intermediation across the countries was obtained.

Within the SACU, South Africa, which is the dominant economy, demonstrated strong evidence of the relevance of domestic financial intermediation in promoting growth. The evidence was however, weak for Botswana and Lesotho. Since the financial system in Botswana is highly developed, the weak effects of financial development on growth may therefore be seen as supporting the 'demand following finance' hypothesis, rather than being the result of a negative externalities from belonging to the union. It is hoped that with passage of time and as the economy and the financial sector develop in Botswana the mutual positive effect may become more pronounced.

In the case of Lesotho, it does appear that the weak effect of financial intermediation on growth may partly be due to some negative externalities of belonging to the union, which might have been exacerbated by the weak domestic institutions. As theory suggests in an integrated market capital will seek higher returns and possibly greater security of investment. Thus, given the relatively weak financial systems, coupled with low returns and other institutional and structural problems, Lesotho may continue to lose the gains of financial intermediation to other members of the union, especially South Africa. Some drastic steps towards strengthening the weak financial system, and resolving the institutional and structural problems within the economy may avert this. For instance,

attention must be given to building domestic entrepreneurial capacity, strengthening the legal system and bank supervision. Also, the problems of property rights and titles deserve immediate attention. This will make it easier for individuals to access credits from the banks.

The case of Swaziland looks very gloomy. It appears that the role of domestic financial institutions, especially commercial banks, in stimulating growth is becoming less important, particularly now that political and economic stability has returned to South Africa. This however, does not diminish the importance of financial intermediation in the economy. It only underscores the need for some vigorous efforts to address the institutional and structural problems within the economy. The recommendations for Lesotho may equally be applicable.

From the foregoing, an obvious lesson for countries contemplating forming or entering an economic integration, in particular a monetary union, is that the development of their financial system along with addressing other institutional and structural problems in their economy would be a necessary precondition for them to derive maximum gains from financial intermediation.

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Appendix

Table 1 Seemingly Unrelated Regression Estimation Results for Growth in Real GDP

Equation (1)	Botswana	Lesotho	South Africa	Swaziland
Constant	-11.52 (-1.47)	24.2 (4.1)a	11.19 (1.8)c	24.56 (1.95)b
FIL (-4)	-0.042 (-0.49)	0.017 (0.84)	0.51(4.8)a	-0.41(-1.07)
OPN (-2)	-0.33 (-2.98)a	-0.44 (-5.13)a	0.15 (2.01)b	-0.22 (-1.44)
GEY(-4)	2.72 (4.96)a	0.175 (0.796)	-0.17 (-0.81)	1.06 (1.31)
INF(-4)	-1.75 (-1.5)	0.427 (1.03)	-0.18 (-2.87)	-0.26 (-0.48)
ER(-1)	3.77 (1.1)	0.77 (0.89)	0.59 (1.26)	-2.42 (-1.52)
SER	17.611	6.37	2.416	13.585
Adj.R2	0.491	0.494	.448	0.364

Note: a-significant at 1% level of significance, b-significance at 5% level of significance and c- significance at 10% level of significance.

Table 2 Seemingly Unrelated Regression Estimation Results for Growth in Real GDP

Equation (2)	Botswana	Lesotho	South Africa	Swaziland
Constant	0.35 (0.17)	17.79 (1.59)	15.44 (2.42)b	27.14 (3.14)a
FIC (-4)	-1.71(-7.32)a	0.297 (1.34)	0.018 (1.79)c	-0.57 (-1.57)
OPN (-2)	-0.41 (-3.97)a	-0.26 (-2.91)a	0.185 (2.45)b	-0.43 (-2.24)b
GEY(-4)	4.81 (8.61)a	0.64 (2.48)a	-0.38 (-1.75)c	1.57 (1.66)c
INF(-4)	-1.01 (-0.71)	0.93 (2.0)b	-0.19 (-2.96)a	-0.396 (-0.63)
ER(-1)	-1.54 (-0.86)	-1.79 (-2.16)b	0.137 (0.27)	-2.04 (-1.48)
SER	13.552	6.799	2.44	13.267
Adj.R2	0.495	0.501	0.546	0.402

Note: a-significant at 1% level of significance, b-significance at 5% level of significance and c- significance at 10% level of significance.

Table 3: Seemingly Unrelated Regression Estimation Results for log of Real GDP

Equation (3)	Botswana	Lesotho	South Africa	Swaziland
Constant	7.68 (17.29)a	9.71 (78.05)a	11.74 (96.77)a	8.65 (36.97)a
FIL (-4)	0.02 (9.05)a	-0.011 (-6.89)a	0.01 (14.69)a	-0.005 (-0.97)
OPN (-2)	-0.007 (-3.78)a	-0.012 (-9.64)a	0.003 (1.79)c	-0.012 (-3.9)a
GEY(-4)	0.016 (1.37)	-0.017 (-4.9)a	0.017 (4.49)a	-0.065 (-4.26)a
INF(-4)	-0.025 (-0.76)	-0.0009 (-0.14)	-0.001 (-1.0)	-0.004 (-0.72)
ER(-1)	0.36 (6.012)	0.098 (12.16)a	0.069 (12.5)a	0.21 (13.86)a
SER	0.2438	0.065	0.045	0.1137
Adj.R2	0.7806	0.9536	0.9335	0.9333

Note: a-significant at 1% level of significance, b-significance at 5% level of significance and c- significance at 10% level of significance.

Table 4: Seemingly Unrelated Regression Estimation Results for log of Real GDP

Equation (4)	Botswana	Lesotho	South Africa	Swaziland
Constant	7.96 (12.67)a	9.32 (54.42)a	12.182 (125)a	8.01 (84.02)a
FIC (-4)	0.019 (3.48)a	0.0004 (0.19)	0.002 (6.13)a	-0.001 (-0.14)
OPN (-2)	-0.007(-2.83)a	-0.008 (-9.5)a	0.003 (2.99)a	-0.01 (-2.99)a
GEY(-4)	0.029 (1.97)b	-0.18 (-8.16)a	0.002 (0.56)	-0.05 (-2.51)a
INF(-4)	-0.04 (-1.03)	0.005 (1.52)	-0.001(-1.62)	-0.007 (-0.61)
ER(-1)	0.41 (11.35)a	0.109 (14.66)a	0.05 (9.02)a	0.25 (25.16)a
SER	0.246	0.0688	0.0296	0.098
Adj.R2	0.784	0.945	0.945	0.949

Note: a-significant at 1% level of significance, b-significance at 5% level of significance and c- significance at 10% level of significance.