Exchange Controls and SADC Regional Integration: Measuring SADC Restrictiveness

Ellyne, Mark and Chater, Rachel

University of Cape Town

May 2013

Exchange Controls and SADC Regional Integration: Measuring SADC Restrictiveness

By Dr. Mark Ellyne and Rachel Chater [*]

Abstract

This paper addresses the issue of foreign exchange and capital controls in the context of the Southern African Development Community's goal of regional integration. It reviews the theory and evidence surrounding current and capital account liberalisation and argues that there is a lack of sufficiently refined *de jure* measures of capital account openness. A new index for measuring exchange control restrictiveness is created based on data from the International Monetary Fund's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) for the 15 SADC member states. It identifies substantial variation in the exchange control regulations across SADC countries that other existing, more indices fail to account for. The new index illustrates the considerable range of variation of exchange restrictiveness within SADC, as well as illustrating SADC's relative exchange restrictiveness compared with other countries, inside and outside of Africa. The new index also correlates with several measures of financial development, certain balance of payment items, and some measures of institutional development, which makes it a useful measure for SADC integration. The paper highlights the challenges for SADC monetary union in the sphere of exchange control.

JEL Categories: F19, F55

Key Words: Exchange controls, SADC, capital controls, regional integration

---

[*] Dr. Mark Ellyne is an Adjunct Associate Professor in the School of Economics at UCT and Rachel Chater is a post-graduate student at the University of Cape Town

1. Introduction

Financial integration has been intensifying across the world over the past three decades (Binici, Hutchinson & Schindler, 2010: 666). This can be seen in the lower levels of regulation on foreign exchange transactions, less restricted flows of capital and higher volumes of cross-border asset holdings (Prati, Schindler & Valenzuela, 2009: 3). While substantial evidence exists showing that free trade and low tariffs for goods are favourable for growth and development, there is a lack consensus on the benefits of free trade in services and capital. Most countries have liberalised current account transactions and the focus is now shifting to the debate surrounding capital account liberalisation.

The motivation for this paper is two-fold: 1) In the context of increasing Southern African Development Community (SADC) regional integration, consistent controls across member countries of the regional block are important and thus an exchange control index of restrictiveness is created and presented here as a measurement tool to help assess SADC progress toward regional integration. 2) The creation of an exchange rate restrictiveness index provides a mechanism to revisit the relationship between exchange controls and macroeconomic performance in a more scientific manner.

Capital account liberalisation is generally on the rise but the associated benefits and risks of international financial integration are still heavily contested, as is the efficacy of capital and exchange controls. Despite this, capital account restrictions and exchange controls are still widely used policy tools in monitoring and regulating international financial transactions. In the context of developing nations, the efficacy of exchange controls is an especially important debate as questionable macroeconomic stability, implementation capacity, financial sector depth and a susceptibility to domestic and international financial shocks create a potentially precarious economic environment.

The SADC has shown particular interest in this issue as one of its goals for the 15 member state block is to form a monetary union with a common currency and a regional central bank by 2018 (SADC Secretariat, 2003a). Evaluating the costs and benefits of exchange controls, as well as the desirability of increased financial integration, is therefore clearly important. While many studies have looked at these subjects, there are limited robust empirical answers available. As Prati et al (2009: 3) identify, among "the many possible reasons for the lack of stronger results, two factors are likely to be important: the use of

aggregated data in many studies, and the lack of sufficiently refined *de jure* measures of capital account openness."

In order to facilitate examination of the feasibility of SADC regional integration and assess the potential for capital account harmonisation, this paper aims to address the mentioned deficit by creating a new index capturing the exchange control restrictiveness of SADC member states. The index is based on data from the International Monetary Fund's (IMF) Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) and includes scores for sub-categories that reflect the major components affecting the openness of a country's current and capital external account transactions. It is designed to capture the substantial variation in the regulation and effects of capital and exchange controls across the countries that other existing, more aggregated capital control indices fail to account for.

Section 2 looks briefly at SADC regional integration to provide the context of the study. Section 3 reviews the literature on exchange and capital controls, going into definitions, measurement, history and trends as well as the costs and benefits of liberalisation and the related empirical evidence. Section 4 presents the new restrictiveness index – its construction, relevance, strengths and limitations, correlation with other existing indices and some observations. Section 5 explores the correlation of the new index with a number of macroeconomic variables and political economy measures and discusses the results. Section 6 looks at some policy implications and concludes.

2. The Goal of SADC Regional Integration

Over the last three decades, a resurgence of interest in regional integration has been witnessed (Gibb, 1998: 295). The African Union (AU), seeing monetary unification as a symbol of strength and political solidarity as well as a way of perfecting a single market and stimulating economic development[1], has shown interest in creating a pan-African monetary union (MU) (Tavlas, 2008: 5). As a way of working towards this end, the AU is encouraging each of the continent's regional blocks to look into the viability of full regional integration. SADC has adopted this goal and aims to create a MU by 2018. The idea was first captured by the SADC Treaty in Articles 21[2] and 22[3] as well as in the Finance and Development Protocol (FIP) in 1992 and 1996 respectively.

SADC's road to a MU is outlined in the Regional Indicative Strategic Development Plan (RISDP[4]), the 15-year regional integration framework based on SADC's vision, mission, common agenda and principles that provides strategic direction for achieving SADC's long-term social and economic goals (SADC Secretariat, 2003b). The SADC recognised that the transition to a full MU would need to be gradual and set five key milestones to mark its transition (Table 2.1). While some progress has been made[5], the RISDP started late due to human resources' constraints. The Member States' implementation is also currently behind schedule as the majority of member states did not possess, or set aside, the necessary capacity to coordinate and implement the RISDP programmes at the national level (SADC Secretariat, 2010). For example, the free trade area targets have only been achieved in 2012.

Analysing SADC member states' current foreign exchange and capital restrictions is an important element of this transition process. Before a common market can be formed with free movement of factors of production, there needs to be capital account liberalisation between the SADC countries so that capital can flow freely within the region. In order to achieve a full MU, all member states need to be internally liberalised. While external liberalisation is not a requirement, each member state would need to make sure their policies were harmonised in regards to other member states' policies. This condition would also need to hold for the member states' respective currencies to be at a fixed convertible rate and for monetary policy to be coordinated across the SADC region. The creation of an exchange control restrictiveness index helps facilitate the necessary analysis of member states' current position and subsequent progress towards regional integration.

Table 2.1. 5-Stage Transition Framework to a Full Monetary Union for the SADC				
1	Free Trade Area	FTA	Absence of tariffs on intra-SADC trade	2008
2	Customs Union	CU	Common tariffs on imports from non-member states	2010
3	Common Market	CM	CU with free movements of factors of production	2015
4	Incomplete Monetary Union	IMU	Irrevocably fixed exchange rates and coordination of monetary policy	2016
5	Full Monetary Union	MU	Single currency and one regional central bank	2018

Source: RISDP (SADC, 2003a) and Tavlas (2008).

3. Exchange Controls: Theory and Evidence

Exchange controls are presented below as non-tariff barriers that act somewhat like a quota restriction. Their nature must be understood to confront the challenge of harmonizing or removing them. The role of exchange controls is discussed in terms of their impact on monetary policy, the current account balance and the capital account flows.

3.1 Definitions and Measurement

Current and capital account restrictions may include: 1) quantitative restriction of payments for balance of payments transactions; 2) reporting requirements; 3) timing requirements; and 4) permission (or license) requirements.

There are three key characteristics common to most controls: 1) they are linked to a specific line item within the BoP, 2) they distinguish the type of transactor, usually residents or non-residents, but also individual, company or financial institution, and 3) they take into account the direction of flows "in" or "out" of the country.

Table 3.1 shows a breakdown of exchange and capital transactions that are typically subject to controls. The examples are based on the AREAER.[6] The AREAER is a unique database published by the IMF tracking exchange and trade arrangements for all 187 member countries since 1950 (IMF, 2010)[7].

Table 3.1. Types of Exchange and Capital Transactions Possibly Subject to Controls

Trade Payments and Proceeds

IMPORTS	Goods	EXPORTS
Foreign exchange budget		*Repatriation & surrender requirements*
		Surrender to central bank
		Surrender to authorized dealers

Financing requirements

IMPORTS	EXPORTS
Minimum financing requirements	Minimum financing requirements
Advance payment requirements	Advance payment requirements
Advance import deposits	Advance export deposits

Documentation requirements

IMPORTS	EXPORTS
For release of foreign exchange for imports	
Domiciliation, preshipment inspection, letters of credit	Domiciliation, pre-shipment inspection, guarantees, letters of credit

Licenses

IMPORTS	EXPORTS
Import licenses and other non-tariff measures	Export licenses with & without quotas

Taxes and/or tariffs

IMPORTS	EXPORTS
Collected through exchange system	Collected through exchange system

Table 3.1. Continued

Capital Transactions

<u>**INFLOWS**</u>   <u>**OUTFLOWS**</u>

Capital and Money Markets

Shares or other securities of a participating nature

  Purchase locally by nonresidents   Sale or issue locally by nonresidents
  Sale or issue abroad by residents   Purchase abroad by residents

Bonds or other debt securities
  Purchase locally by nonresidents   Sale or issue locally by nonresidents
  Sale or issue abroad by residents   Purchase abroad by residents

Money market instruments
  Purchase locally by nonresidents   Sale or issue locally by nonresidents
  Sale or issue abroad by residents   Purchase abroad by residents

Collective investment securities
  Purchase locally by nonresidents   Sale or issue locally by nonresidents
  Sale or issue abroad by residents   Purchase abroad by residents

Direct Investment

Inward direct investment   Outward direct investment
                                                Controls on liquidation of direct investment

Personal capital movements: deposits, loans, gifts, endowments and inheritences

To residents from nonresidents   By residents to nonresidents

Residency

<u>**RESIDENTS**</u>   <u>**NON-RESIDENTS**</u>

Foreign exchange account permitted?

  Held domestically   Held domestically
  Held abroad

Domestic currency accounts

  Account in domestic currency held abroad   Domestic currency accounts held locally
  Convertible into foreign currency?   Convertible into foreign currency?

Source: Compiled by authors.

There are many subtle overlaps and interactions between exchange controls, trade restrictions, capital controls and prudential measures. For our purposes, exchange controls will relate to restrictions connected with cross-border payments and cover all elements of Table 3.1. Thus exchange controls do not directly restrict trade but effectively act as generalised non-tariff trade barriers, more like a quota than a tariff. We refer to exchange controls in general, which may affect both the current and capital accounts, whereas capital controls restrict capital transactions only. Prudential measures, on the other hand, involve the discretionary use of instruments and regulations designed specifically to protect the financial system and macro-economy of a country (Korinek, 2011). Some exchange controls can be prudential measures.

When trying to measure the relationship between capital account liberalization and international financial integration, there is a debate as to whether the best indicators are *de facto* or *de jure* measures. *De jure* or rule based measures reflect the existence of regulations but fail to address how effective they are at attracting or deterring transactions in practice through successful enforcement. *De facto* measures, on the other hand, capture the actual capital flows but say little about the policies or desires of the country. Some countries, especially advanced economies, have managed to obtain high levels of financial integration in terms of both measures whereas others show very different results depending on whether the measure uses *de facto* or *de jure* data (Prasad et al, 2003: 6). The relationship between the two measures for a country can provide some interesting insights on the efficacy of its controls (Edison, Klein, Ricci & Sløk, 2002: 4). The index developed herein is a *de jure* measure, which we feel provides a better indication of the institutional framework of a country rather than its capacity to implement rules.

Table B.1 (Appendix B) presents a summary of some of the existing measures and indices created using various *de jure* and *de facto* indicators. Notably, there are very few indices that cover a wide range of countries and those that do frequently face trade-offs between coverage and detail. Also, many measures fail to indicate the *intensity* of controls, often relying on binary variables that hide the subtle but important variations within regulations (i.e. saying that a country imposes a control does not indicate how rigid or restrictive that control is). Tamirisa (1999), Schindler (2009) and Chinn and Ito (2010) all create indices from

the AREAER showing exchange and capital control restrictiveness for 40, 91 and 182 countries respectively (see Section 4 below).

Measures that show actual capital movements, either from balance of payments or from financial markets data, attempt to provide a measure of *de facto* liberalisation (Table B1, rows 11-15).[8]

3.4 Exchange Controls and Monetary Unions

Exchange controls are important for monetary unions because they have to be either harmonized or removed within the monetary union, in order to create a consistent monetary policy within the region. The impact of exchange controls on monetary policy can be highlighted by reference to the famous 'Impossible Trinity Hypothesis' (ITH). The ITH is an outcome of the Mundell-Flemming model of open-economy macroeconomics, which suggests that an economy cannot maintain (1) exchange rate stability, (2) free capital movement, and (3) an independent monetary policy simultaneously—although any two are possible (Figure 3.2).

Of the 3 potentially desirable policy goals, the choice is usually understood as being between monetary policy independence or a fixed exchange rate, given the existence of capital mobility (Aizenman, et al., 2011). In this situation, the free movement of capital prevents a country from both maintaining a constant exchange rate and freely controlling its interest rates, as deviation of interest rates from that of its partners causes capital flows that strengthen or weaken the exchange rate.

For SADC countries, the goal to achieve a monetary union means achieving some level of exchange rate stability with capital mobility, while sacrificing domestic monetary independence.

There is some nuance here as to the degree of capital mobility required for a monetary union. Within a SADC monetary union there must be unrestricted capital mobility, but there could be a common wall of exchange and capital controls for the region. Thus, the common currency might not be subject to free capital mobility. Such is the case for the rand and the Common Monetary Area.

Figure 3.2 Impossible Trinity

Closed financial markets
And pegged exchange rate;
e.g. Bretton Woods system

Monetary Independence   Exchange Rate Stability

Floating exchange rate   Monetary Union or
Currency Board
Financial Integration/   e.g. Euro system
Capital Mobility
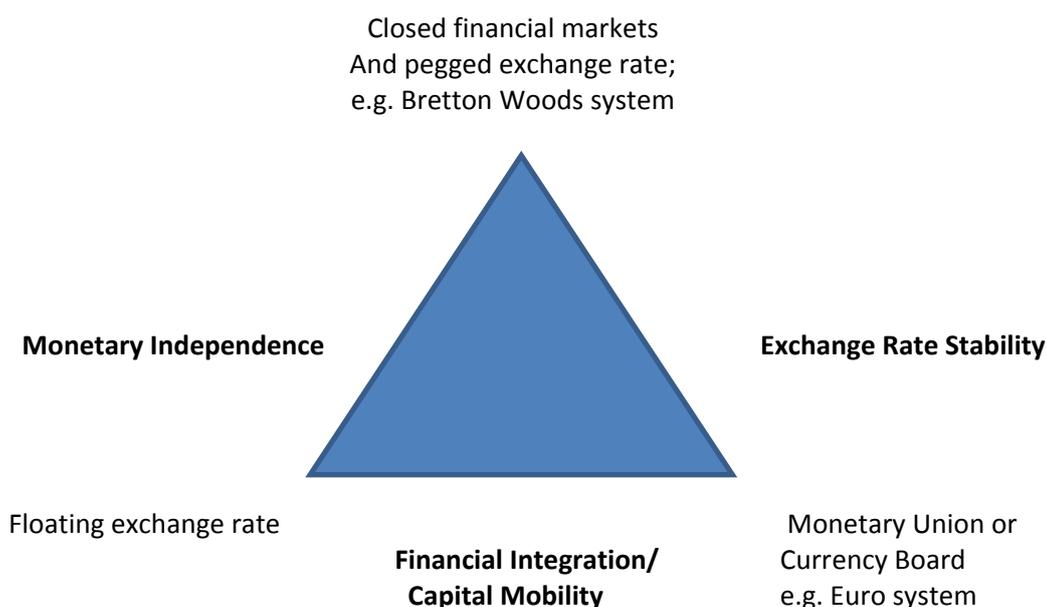
Source: Aizenman, Chinn and Ito (2008).

3.5 Current Account - arguments for and against liberalisation

The economics literature has a general consensus that the benefits outweigh the costs of a liberalised current account. Unrestricted payments for current account transactions have been an underlying requirement for IMF members, broadly known as Article VIII status (see Appendix C for a discussion on the IMF Articles of Agreement and its effects on exchange controls).

Many studies, some noted below, argue that exchange controls are highly inefficient and do more harm than good. Exchange controls introduce a variety of distortions in the economy and undermine proper pricing and exchange rate valuation (Stockman & Hernandez, 1985). As many exchange controls are designed to restrict imports, a non-tariff barrier to trade is essentially created, which acts as a quota restriction on some or all imports (Greenwood & Kimbrough, 1987). Such restrictions also impact exports and the value of the real exchange rate in addition to its designed effect on import volumes. The implicit appreciation that often occurs with import restrictions makes exports less competitive, potentially requiring exporters to compensate by increasing productivity or reducing labour costs. If the latter strategy is followed, exchange controls can create an implicit tax on the labour content of exports. Exchange controls also lead to a reduction in international trade, especially if

partner countries simultaneously restrict imports through exchange controls (Tamirisa, 1999). As freer trade is widely considered beneficial for growth and development, this reduction caused by exchange controls would have negative effects for a country's social welfare.

Liberalising current account restrictions and removing exchange controls also acts as a positive signal of a country's commitment to good policy and economic governance (Bartolini & Drazen, 1996). This builds investor confidence and encourages an increase in capital flows and investment into the country as well as helping to reduce the amount of capital flight from the nation. Further, the administrative costs of exchange controls can be significant and, depending on the country's economic position, it is debatable whether these are justified.

Traditionally, current account controls were defended as a mechanism to conserve scarce foreign exchange and protect the foreign reserves of the country. Implicitly, this argument implied that there was some underlying policy creating disequilibrium in the exchange rate and reducing foreign reserves, which justified the use of protective administrative measures. In such a case, this implied a more appreciated exchange rate than the equilibrium level. Currently, the main justification for current account controls is to prevent illegal capital leakages, especially through the service account.

Exchange controls are also purported to facilitate balance of payments data collection and help reduce tax evasion and money laundering. Today there are more efficient, effective and less costly ways of collecting data, including real time clearing systems operated by central banks. While tax evasion can often be a real problem, the modern view is that it is a tax administration problem and should not be addressed through exchange controls. Money laundering and the financing of terrorism are modern problems and often include some elements of exchange control systems. However, most countries have established "financial intelligence units" to fight money laundering and the financing of terrorism.

3.6 Capital Account – arguments for and against liberalisation

Forbes (2006) makes a fitting analogy likening capital account liberalisation to the advent of the automobile. Cars come with a plethora of advantages and opportunities. They speed up the ways of getting from one point to another and create the potential for increased

productivity and growth. Similarly, open capital accounts allow many opportunities for different economic actors and provide faster avenues to achieve growth and development. However, with both cars and capital account liberalisation there is the risk of crashes, which needs to be considered and mitigated. Despite the risks Forbes notes, it is hard to imagine a developed country without cars and their associated benefits for development.

There is still considerable debate regarding the cost-benefit of capital account liberalisation. An important question is "whether the theorems on the gains from free trade in goods, extend to free trade in financial capital" (Edwards, 1999: 2). The theoretical arguments in favour of capital account liberalisation suggest that they do. Free capital mobility allows for a more efficient global allocation of resources, increases capital flows for investment financing, creates opportunities for risk diversification, increases the efficiency of domestic financial sectors, promotes financial development, helps raise productivity and growth and signals a country's commitment to good economic policies.

The traditional argument for international allocative efficiency is based on resource flows from capital-rich countries with low rates of return to capital-scarce countries providing higher rates of return. This process can permanently raise the poorer country's standard of living and general level of welfare. Open capital markets also help promote financial development in the home country (Edison, Klein, Ricci & Sløk, 2002: 20). The increase in the efficiency of the country's financial sector then allows for a more efficient national allocation of capital as well as global allocation (Quinn & Inclan, 1997: 772). Financial openness is also beneficial to governments faced with low domestic saving rates, as the, which allows increased investment and consumption smoothing.

Capital account liberalisation also provides opportunities for risk diversification (Edison, Klein, Ricci & Sløk, 2002: 1). As countries' economic climates are not necessarily on the same cycles, open capital markets allow investors to insure themselves against volatility in their domestic markets by accessing international capital in countries experiencing different shocks at different times. This reduces volatility in income and consumption and raises welfare (Dooley, 1996: 640). Other possible externalities include the benefits from increased competition and technology improvements.

Liberalising the capital account, as with the current account, acts as a potential signal of a country's commitment to sound economic management and favourable future policies. If

governments allow free capital mobility, investors may believe that future impositions of controls are less likely to occur and therefore be more willing to invest.

In general, capital account openness is acknowledged to have benefits that exceed the associated costs. Controls are agreed to be welfare reducing unless, as Cardoso and Goldfajn (1998: 163) argue, "they are a 'second-best' policy that mitigates the effects of another market failure".

Capital controls are usually motivated by a country's desire to protect against the potentially harmful effects of fluctuations in international capital flows (Kose & Prasad, 2012). Placing restrictions on capital account transactions can decrease vulnerability to crises and reduce excessive macroeconomic volatility. This is especially relevant for 'hot money' or short terms flows and investments that can be easily and swiftly reversed. The resulting instability can have a negative effect on the real and financial economy, undermine investor confidence, lower domestic investment and hinder growth (Binici et al, 2010: 667).

In the presence of imperfect information, the volatility enabled by free capital mobility is exacerbated through "excessive risk-taking and moral hazard", increasing the likelihood of financial crises (Orlov, 2005: 80). The effect of any adverse macroeconomic shock is liable to be amplified by the swift reversal of short-term capital flows. Unregulated capital flows also tend to facilitate the spreading of currency crises, making a shock in one country affect a much wider group of actors (Edison, Klein, Ricci & Sløk, 2002: 1). Capital controls cannot fully protect a country against a crisis unless it has "sound policies in fundamentals" (Forbes, 2006), but are believed to be a good "second best" measure.

In light of the above, capital controls are simply often used to influence the composition of flows crossing borders, giving preference to longer-term inflows like FDI, and discouraging short-term flows like portfolio (Alfaro, Chanda, Kalemli-Ozcan & Sayek, 2004).

Studies looking at the effects of capital account liberalisation do not return conclusive findings (Tables B.2 and B.3, Appendix B). Theoretically, capital account liberalisation and increased global financial integration[9] are expected to directly or indirectly contribute towards growth; however the results are mixed. Of the 14 studies summarised in Table B.2, 4 show a statistically significant, positive relationship between capital account liberalisation and growth; 5 find no statistically significant relationship, and the remaining 5 present

mixed results. As usual with studies of this kind, even when significant links are identified, conclusions regarding the causal nature of the relationships cannot be reliably extrapolated. In particular, there may be instances where reverse causality is at work and capital account liberalization is a function of the growth (Edison, Klein et al, 2002: 21).

Moreover, the relationship between capital account liberalisation and growth (Table B.2) is not a simple linear one. Human capital, the depth of the domestic financial market and the quality of governance and macroeconomic policies together determine a country's "absorptive capacity" (Prasad et al, 2002: 29). The positive spill-overs associated with increased capital account liberalisation are likely to be better integrated into economies with higher absorptive capacities. As such, certain levels of development or absorptive capacity represent "thresholds" or turning points. For example, there is some evidence that "the effect of foreign direct investment on growth depends on the level of human capital in a developing country" (Prasad et al, 2002: 29).

Azman-saini, Law and Ahmad (2010) use a threshold regression model and find that the positive impact of FDI on growth "kicks in" only after financial market development exceeds a threshold level, before which its benefits are non-existent. Ding and Jinjarak (2012) also find evidence that the size of capital flows is positively correlated in a non-linear relationship with a country's income level. They identify a three-stage threshold effect: "for low-income countries[10], capital flight increases as the income level rises; and only after the economy passes a threshold band[11] does capital flight decline with income" (Ding & Jinjarak, 2012: 1). Artete, Eichengreen and Wyplosz (2001), however, argue that the sequencing of reforms is more important than a country's stage of financial development and find that capital account liberalisation only has a positive relationship with growth in countries that are already more open.

The studies reviewed in Table B.3 generally find that increased capital account liberalisation had no significant impact on the volatility of output, growth, consumption or investment. Capital controls were found to be associated with higher inflation and lower real interest rates in addition to acting as a significant barrier to trade. They are generally effective at influencing the volume and composition of flows in the short-run.

The IMF has recently nuanced its position on the sequencing for liberalisation of capital flows and the use of capital flow management measures. First, the appropriate degree of

liberalisation for a country depends on its specific circumstances and level of financial development. Second, liberalisation should be carefully planned and sequenced in an integrated approach, particularly in the cases of emerging market economies. Third, the use of "capital flow management measures" on outflows may be beneficial in crisis or near crisis conditions, but only as a supplement to more fundamental policy adjustment (IMF, 2012).

4. The New Restrictiveness Index

The new Exchange Control Restrictiveness Index (ECRI) is created to provide a data set aimed specifically at the member states of SADC in order to examine the effects of exchange controls in the region. This is especially relevant within the context of the current assessment of the viability of regional integration among the 15 countries. The index adds value by providing several scores reflecting the extent and intensity of exchange controls. While the index is focussed on the 15 SADC states for the years 2000-2010, indices for a number of other countries are presented for 2010 for comparison purposes.

Previous attempts at quantifying the level of *de jure* exchange and capital restrictions have relied on binary variables that tend to oversimplify the subtleties and range of restrictions. While quantifying the extent of *de jure* financial openness is a challenging task, it remains an important step in analysing the effects of the liberalisation process and the impact of restrictiveness within and across different countries. Here we have attempted to divide the restrictions published in the AREAER into elements of somewhat equal importance, and to assign ordinal scores to each restriction from 0-8 depending, based on the intensity and type of restriction imposed. This represents a significant departure from past attempts to treat all restrictions equally and by assigning each a 0/1 binary grading. We also provide breakdowns into separate categories to facilitate the analysis of different aspects of restrictiveness.

4.1 Constructing the Index

The index measures *de jure* capital account and exchange control restrictiveness of the 15 member states of the SADC for the years 2000 – 2010. Until 1995, the AREAER was presented using binary dummy variables to indicate restrictiveness[12] (Schindler, 2008: 224). Since 1995 however, the AREAER provides more in-depth information on openness to capital flows and contains summary tables with details on the restrictions in place for all IMF

member countries. The new index utilises this more structured and comprehensive approach.

A set of 75 key restrictions in the AREAER is coded to create an aggregate score.[13] The selection was done to reflect the major components that affect, with an equal weight, the exchange restrictiveness of a country. These 75 restrictions can be grouped into 5 broad categories, each of which forms its own sub-index (Table 4.1).

Table 4.1. Categories and Number of Coded Restrictions

Category of restriction	Number of restrictions
Goods	12
Services	10
Capital account	14
Financial sector only	12
Applies to all	27
Total	**75**

If identified key restrictions are not relevant for a particular country or they are not reported by the country, then those restrictions are ignored. Thus, of the maximum 75 restrictions to be coded, the minimum number of coded restrictions for any country was 63. The final score given to the country is relative to the number of coded restrictions.

Whereas most existing indices use binary dummy variables, the new index is created using a graded scale of even numbers from 0 (no restrictions) to 8 (maximum restrictiveness). Table 4.2 below describes the level of restrictiveness associated with each number.

Table 4.2. Coding Key

The index is contructed so that a higher number indicates greater restrictiveness		
0	No restrictions	Totally liberalised/open.
2	Low restrictiveness	Reporting required or issue of timing
4	Medium restrictiveness	Permission or high level of reporting required, significant timing restriction, license
6	High restrictiveness	Quantity restriction, but limits may not be very binding
8	Maximum restrictiveness	Binding quantity restriction or total prohibition

The sub-index percentages are calculated by dividing the sum of the numbers assigned to each individual field in the category by the total possible sum that could have been awarded (number of fields multiplied by maximum score). The overall index score for a country is then calculated as the aggregation of the sub-indices. For all scores, the index indicates the percentage of total possible restrictiveness that a country's policy suggests.

4.2 Strengths and Limitations of the Index

Common to all exchange control indices is the trade-off presented between broad coverage (country and years) and detail. While only covering the 15 SADC member states for 10 years, the index's main strength is its specificity in coding. The more detailed grading allows for a greater accuracy in reflecting the subtle distinctions between the restrictiveness of the countries included. This is further complimented by the break down into categories where the sub-components[14] can be individually utilised or assessed at an aggregated level.

One of the key shortcomings of the index is the bias created by missing information. This arises when countries fail to report on certain categories. Information that is not available, applicable or reported is removed from the count, which lowers the base and consequently affects the restrictiveness score. If a country is liberalised in the unreported field, the score will be higher than it should be. On the other hand, if the country is more restrictive in the unreported field, the missing information will result in a lower score being achieved, which creates a false impression of exchange control openness. This is particularly prevalent in 2000, where a lot of fields were missing information[15].

While the index creates a measure of the intensity of exchange controls in a given SADC country, a substantial limitation is its failure to capture differences *within* the value of quantitative restrictions. A maximum score of 8 in any field indicates a binding quantitative restriction but does not distinguish between countries with generous (but still binding) quantitative restrictions and those with severe limits. A country like South Africa, whose strategy is to increase the amounts allowed within a particular restriction, would receive the same score in the index regardless of the progressive relaxation of its limits. Despite this, the index still allows for a comprehensive scoring that captures much of the subtleties between different countries' external account transaction restrictiveness.

4.3 Correlation with Other Indices

We check the ECRI against other existing measures and find that it correlates quite highly (Table 4.3). There are two other main *de jure* exchange control and capital account openness indices frequently cited in literature (Schindler and Chinn-Ito), each with its own distinct strengths and limitations. While the ECRI focuses on detail at the expense of a broad year and country coverage, others have more simple measures with an extensive coverage.

Table 4.3. Correlation Coefficients with Other Indices

	2000	2005	2010
Chinn-Ito*	-0.89	-0.92	-0.95
Schindler	0.84	0.87	N.A

* The negative correlation arises because higher values in the Chinn-Ito index reflect a country that is more open to cross-border capital transactions.

The Chinn-Ito Index captures data for 182 countries spanning the time period from 1970-2010 using binary dummy variables where a 0 value is given to a restricted component. This means that higher values reflect a country that is more open to cross-border capital transactions (Chinn & Ito, 2008: 5).

The Schindler Index spans 91 countries from 1995-2005. While it still uses some binary coding (e.g. for resident versus non-resident restrictions), it uses information at a disaggregated level with different sub-indices.

4.4 Some Observations of the Index

The index displays a significant range of restrictiveness between SADC countries (on average a difference of 47%). This makes sense given the substantial differences in economic growth and prosperity, governance regimes, and institutional quality within the region. Figure 4.1 shows the variation in the range of the ECRI across all 15 SADC countries for 2010. The index totals for all 15 countries for 2000-2010 can be found in Appendix A as well as the complete breakdown for each country for 2010.

Figure 4.1. ECRI - SADC 2010
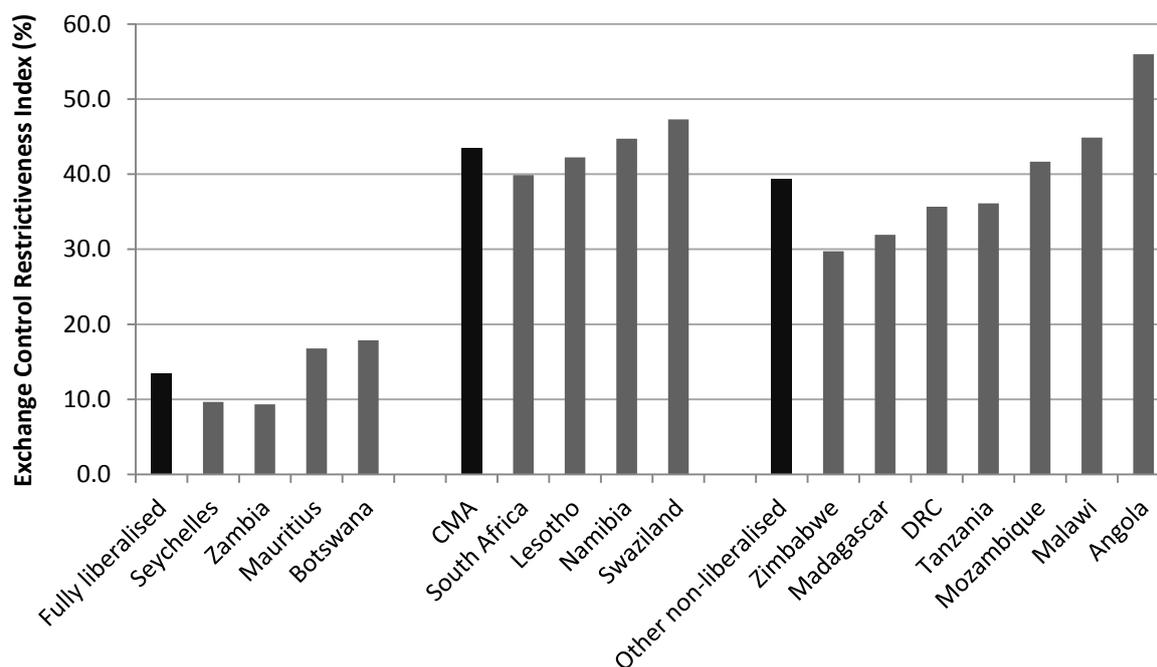
Table 4.4 shows the 2010 ECRI component values as well as their averages and liberalisation rank for all SADC member states. On average, the majority of exchange controls are concentrated on the capital account – the most restrictive component.

The ECRI also indicates that while some SADC countries have become on average (slightly) more restrictive between 2000 and 2010, the biggest changes in restrictiveness came from those member states becoming more liberalised (ranging from an approximate 4.5% decrease in restrictiveness from Namibia and South Africa to a 27% decrease from Zimbabwe). Figure 4.2 presents the standard deviation and average of the ECRI for each year 2000-2010 across all SADC countries. A noteworthy trend is the declining average from 2005 onwards. This could in part reflect the liberalisation effort that came about after SADC began pushing its member states to become less restrictive.

Table 4.4. ECRI - 2010

	Goods Restrict	Service Restrict	Capital Account	Financial sector only	Applies to all	Overall	Rank
Angola	47.9	72.2	68.2	41.7	56.7	**57.1**	**15**
Botswana	14.6	0.0	28.6	29.5	16.0	**18.1**	**4**
DRC	41.7	27.5	48.2	41.7	26.9	**35.7**	**7**
Lesotho	39.6	55.0	61.5	29.2	35.2	**42.2**	**10**
Madagascar	20.8	11.1	44.6	45.0	36.0	**32.3**	**6**
Malawi	39.6	60.0	53.6	41.7	38.0	**44.9**	**13**
Mauritius	27.1	0.0	28.6	25.0	9.3	**17.0**	**3**
Mozambique	39.6	50.0	48.2	52.1	38.0	**44.0**	**11**
Namibia	41.7	65.0	57.7	47.5	30.8	**44.7**	**12**
Seychelles	12.5	0.0	5.4	10.4	10.6	**8.4**	**1**
South Africa	39.6	55.0	55.4	52.1	20.2	**39.9**	**9**
Swaziland	39.6	70.0	55.4	56.3	33.7	**47.3**	**14**
Tanzania	37.5	15.0	53.6	47.7	28.0	**35.7**	**8**
Zambia	20.8	0.0	5.4	8.3	13.5	**10.5**	**2**
Zimbabwe	22.9	10.0	62.5	33.3	16.0	**28.1**	**5**
Average	**32.4**	**32.7**	**45.1**	**37.4**	**27.2**	**33.7**	

Source: Compiled by authors.

Figure 4.2. Standard Deviation and Average of ECRI for SADC (2000 - 2010)
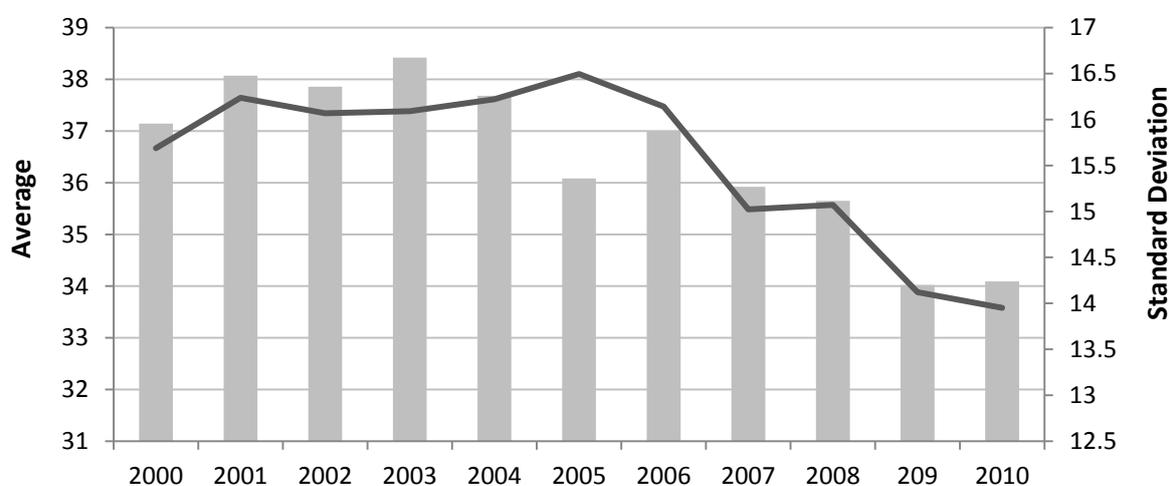
By international comparison, SADC is not very liberalised in terms of exchange controls. Figure 4.3 shows the ECRI for a number of industrial nations; emerging markets and other African countries in comparison to SADC (see Appendix A for details). While the fully liberalised SADC member states average out to a similar level compared with the industrial nations, the rest of SADC is far behind.

Figure 4.3. ECRI - Comparison among Nations
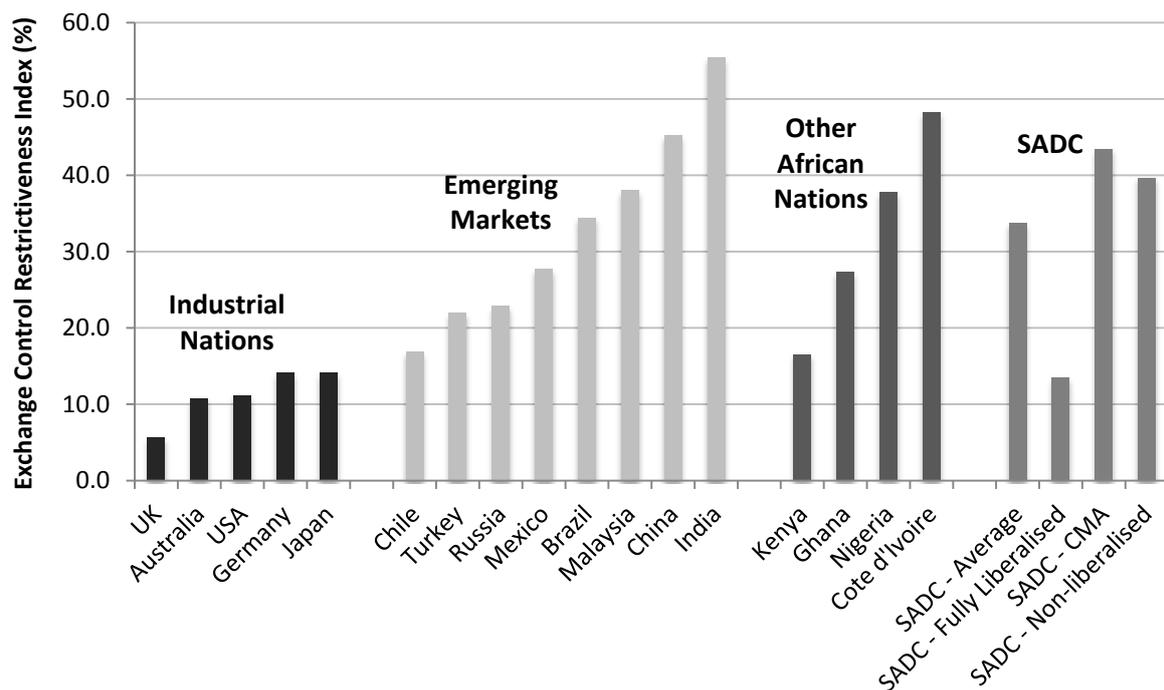
5. Applications of the Exchange Control Restrictiveness Index

The correlation values shown in this section (Table 5.1 and Appendix D), while in no way conclusive, provide some interesting exploratory findings using the new restrictiveness index and offer avenues for potential future studies. It is important to note that the following analysis was focussed only on SADC and has no implications outside of the region.

Table 5.1. Correlations with ECRI

		2000	2005	2010
1	**GDP Growth (%)**	-0.33	-0.32	-0.45
2	**Financial Sector Depth**			
	NCP/GDP	0.044	-0.037	0.002
	NCP/GDP excl outliers*	-0.321	-0.316	-0.356
	CIC/M2	0.468	0.291	-0.144
	CIC/M2 excl outliers**	0.525	0.667	0.541
3	**Balance of Payments**			
3a	**Net Foreign Assets/GDP**	-0.161	-0.424	-0.398
	NFA/GDP excl Zambia	-0.391	-0.626	-0.623
3b	**Errors & Omissions/GDP**	0.073	-0.071	-0.102

Notes: Growth correlation for 2005 excludes data on Angola

Data for CIC/M2 for 2010 uses 2009 data (2010 unavaliable for a large number of countries)

* South Africa & Zambia

** Angola, Seychelles, South Africa & Zambia

Source: Authors' calculations based on data from World Bank African Development Indicators (2010); IMF International Financial Statistics and ECRI.

5.1 Do Exchange Controls Hurt Growth?

The correlations of GDP growth and the restrictiveness index are fairly low (-0.33, -0.32 and -0.45 for 2000, 2005 and 2010 respectively) and all negative. This is in keeping with the theory that fewer exchange controls and more financial integration is beneficial for productivity and growth.

Figure 5.1 shows a scatter chart plotting the points of growth and restrictiveness for each of the SADC member states[16]. The linear trend lines indicate the negative relationship that exists.

Figure 5.1. Correlation between Growth & ECRI for SADC Countries
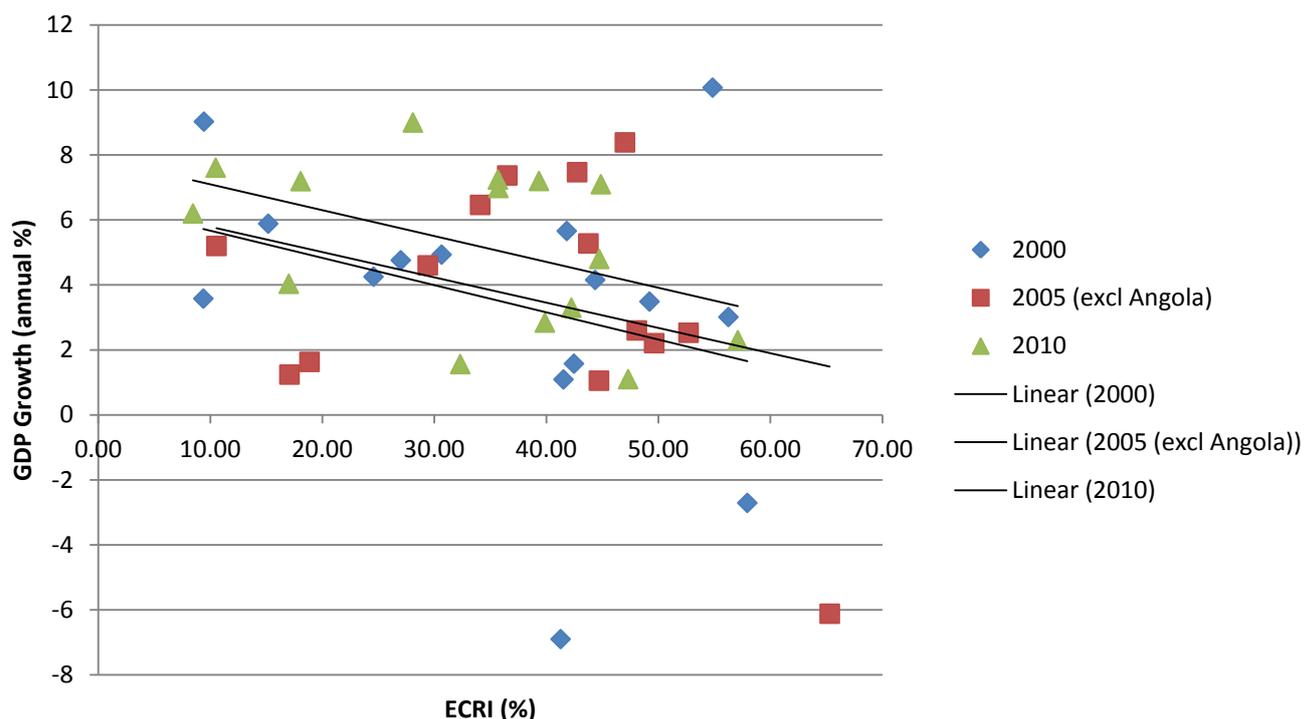
5.2 Do Exchange Controls Affect Financial Development?

As indicators for financial sector depth, net credit to the private sector (NCP) and total cash in circulation (CIC) as ratios of GDP and M2 respectively, are used. A higher NCP/GDP ratio indicates greater financial development (an expected negative correlation with the ECRI) while a higher CIC/M2 ratio implies a lower level of financial development (an expected positive correlation with the ECRI). Initially, the NCP/GDP correlation is negligible and the CIC/M2 correlation inconsistent. On further examination of the underlying data (Appendix B), this makes sense as a few countries skew the results[17]. The correlations (although still low) return more expected values when the outliers are omitted from the calculation (row 3 and 5 of Table 5.1). NCP/GDP correlations change from 0.002 to -0.356 in 2010 and CIC/M2 from 0.468, 0.291 and -0.144 to 0.525, 0.667 and 0.541 for 2000, 2005 and 2010 respectively, which fall within the anticipated range and relationship direction.

5.3 Exchange Controls and the BoP

a) Do Exchange Controls Protect Foreign Reserves?

Net Foreign Assets as a ratio of GDP (NFA/GDP) return an initially low negative correlation with the ECRI (-0.424 in 2005 and -0.398 in 2010). The correlations become more significant

when Zambia (a substantial outlier) is excluded, increasing to -0.626 in 2005 and -0.623 in 2010. The negative sign implies that greater restrictiveness is associated with a lower NFA/GDP ratio. This suggests that increasing foreign exchange restrictions may not protect or sustain high foreign reserves.

b) Do Exchange Controls Facilitate Effective Data Collection?

As the final line of correlations in Table 5.1 shows, there is no correlation between the errors and omissions data and the ECRI. This challenges the argument for using exchange controls to aid data collection.

5.4 Are Exchange Controls a Good Measure of Institutions?

Table D.3 (Appendix D) correlates the areas and components of the Economic Freedom of the World (EFW) dataset with the ECRI. Areas 3 and 4, capturing 'Access to Sound Money' and 'Freedom to Trade Internationally', are significantly correlated with exchange and capital control restrictiveness. In particular, the sub-components 'Freedom to own foreign currency bank accounts' and 'International capital market controls' return high correlations of 0.84 and 0.755 respectively over the two years. This also gives further credibility to the quality of the ECRI as these EFW measures are constructed from different data to our index but still show significant correlations.

6. Conclusions and Recommendations

The perceived need of SADC to measure its regional integration initiative motivated this analysis of exchange controls in the region. There are few quantitative measures of exchange and capital controls that exist in the literature, and this paper took a new approach to the measurement issue, by using ordinal levels of measurement rather than simply a binary approach. The Exchange Control Restrictiveness Index (ECRI) that was created broke down exchange controls into 5 sub-categories, which addresses the lack of refined *de jure* measures of differing categories of controls and aids further analysis into the topics of regional integration and the effects of exchange and capital controls. The index showed that while at present there is substantial variation between the restrictiveness of the 15 SADC member states, all but 2 countries have made advancements in lowering restrictions over the past decade.

If SADC aspires to achieve monetary union, it will have to create a regional community with free movement of capital internally, although it could have a common set of external exchange controls. The variation in the ECRIs among SADC countries highlights the substantial variation among the restrictiveness of the 15 SADC member states, which would have to be harmonized. For analytical purposes, the authors grouped the SADC countries into 3 groups for exchange control purposes: (1) four liberalised countries; (2) the four CMA countries with the same regulations; and (3) the seven other non-liberalised countries. Moreover, SADC as a whole appears quite restrictive by international comparison. The differences in exchange controls highlight the potential regulatory hurdles in trying to create a monetary union.

Economic theory and research has been fairly consistent about the benefits of current account liberalisation for growth and development. In this respect, the ECRI for goods tended to be relatively low for most SADC countries, although still much too high for states aspiring for a free trade area. Moreover, the ECRI on services was relatively high, which came as a surprise. The rationale for many restrictions tends to emphasize the benefits to the national economic welfare while denying commercial agents the right to make their own decision.

The debate regarding the desirability and consequences of capital account restrictions is more open to debate. Economic theory says that liberalising the capital account allows for a more efficient global allocation of resources, increases capital flows for investment, creates opportunities for risk diversification, increases the efficiency of domestic financial sectors, promotes financial development, helps raise productivity and growth and signals a country's commitment to good economic policies. At the same time, research indicates that there can be substantial costs associated with volatile short-term capital flows that can have a negative impact on growth and development. This is particularly true for developing countries that have less developed financial sectors.

Whether countries that liberalise become increasingly vulnerable to financial disruptions or actually create the conditions for more rapid development and growth is unclear from reviewing the existing empirical literature. While the evidence suggests that there are likely

to be risks involved with pursuing greater financial integration, resisting liberalisation over an extended period of time may prove both futile and counterproductive.

Kose and Prasad (2012) argued that sound domestic policies and institutions, a solid regulatory framework promoting a strong and efficient financial sector, and effective monitoring systems for capital flows greatly improve the chances of maximising the benefits of liberalisation whilst minimising the associated risks and costs. As an important part of the process towards regional integration, SADC member states will need to pursue liberalisation with these fundamentals in mind, at the very least, they should be internally liberalised to achieve the proposed goal of monetary unification.

Finally, the paper attempts to suggest the potential impact of exchange controls on other financial, economic and structural variables, through a simple correlation analysis. This preliminary analysis indicated a negative relationship between growth and exchange restrictiveness. The ECRI was also found to be well correlated with several other structural measures of poor governance and low regulatory standards, which might explain its negative relationship with growth. The ECRI had a negative correlation with NFA, opposite to what was expected, and might therefore indicate that the direction of causality runs from reserves to exchange controls as opposed to vice versa. The measures of financial sector development seemed to indicate that greater financial sector development is associated with less exchange control restrictiveness.

Bibliography

ARTETE, C.; EICHENGREEN, B. and WYPLOSZ, C. (2001). When does capital account liberalisation help more than it hurts? *National Bureau of Economic Research,* WP8414.

ALFARO, L.; CHANDA, A.; KALEMLI-OZCAN, S. and SAYEK, S. (2004). FDI and economic growth: the role of local financial markets. *Journal of International Economics, 64: 89–112.*

AIZMAN-SAINI, W. N. W.; LAW, S. H. and AHMAD, A. H. (2010). FDI and economic growth: New evidence on the role of financial markets. *Economic Letters,* 107: 211-213.

AIZENMAN, J., Chinn, M., and Ito, H. (2008). Assessing the Emerging Financial Architecture MJeasuring the Trilemma's Configuration over Time. *National Bureau of Economic Research*, WP14533.

BARTOLINI, L. and DRAZEN, A. (1996). Capital account liberalisation as a signal. *National Bureau of Economic Research,* WP5725.

BELLE, M. (2010). Regional Integration in SADC: Progress, Prospects and Statistical Issues for Monetary Union. *Proceedings of the SARB/IFC Seminar on "Economic and Financial Convergence en Route to Regional Economic Integration: Experience, Prospects and Statistical Issues amidst Global Financial Turmoil".* Durban, South Africa: BIS: 85-95*.*

BEKAERT, G.; HARVEY, C. and LUNDBLAD, C. (2001). Does financial liberalisation spur growth? *National Bureau of Economic Research,* WP8245.

BINICI, M.; HUTCHISON, M. and SCHINDLER, M. (2010). Controlling capital? Legal restrictions and the asset composition of international financial flows. *Journal of International Money and Finance,* 29: 666-684.

BJERKSUND, P. and SCHJELDERUP, G. (1995). Capital controls and capital flight. *Public Finance Analysis,* 52(1): 33-42.

BUCH, C. M., DÖPKE, J. and PIERDZIOCH, C. (2005). Financial openness and business cycle volatility. *Journal of International Money and Finance,* 24(5): 744-765.

CÁRDENAS, M. and BARRERA, F. (1997). On the effectiveness of capital controls: The experience of Colombia during the 1990s. *Journal of Development Economics,* 54: 27-57.

CARDOSO, E. and GOLDFAJN, I. (1998). Capital flows to Brazil: the endogeniety of capital controls. *Staff Papers – International Monetary Fund,* 41(1): 161-202.

CHANDA, A. (2001). The influence of capital controls on long-run growth: Where and how much? Unpublished, Providence, Rhode Island: Brown University.

CHINN, M. D and ITO, H. (2008). A New Measure of Financial Openness. *Journal of Comparative Policy Analysis* 10(3): 307-320.
DE MELLO, L. (1999). Foreign Direct Investment-led growth: evidence from time-series and panel data. *Oxford Economic Papers,* 51: 133-151.

DING, D. and JINJARAK, Y. (2012). Development thresholds, capital flows and financial turbulence. *North American Journal of Economics and Finance,* doi:10.1016/j.najef.2012.03.008.

DOOLEY, M. P. (1996). A survey of literature on controls over international capital transactions. *Staff Papers – International Monetary Fund,* 43(4): 639-687.

EASTERLY, W., ISLAM, R. and STIGLITZ, J. (2001). Shaken and stirred: explaining growth volatility. In *Annual World Bank Conference on Development Economics,* ed. Boris Pleskovic & Nicholas Stern, Washington: World Bank.

EDISON, H. J.; LEVINE, R.; RICCI, L. and SLØK, T. (2002). International financial integration and economic growth. *National Bureau of Economic Research,* WP9164.

EDISON, H. J.; KLEIN, M. W.; RICCI, L. and SLØK, T. (2002). Capital account liberalization and economic performance: survey and synthesis. *National Bureau of Economic Research,* WP9100.

EDWARDS, S. (1999). How successful are capital controls? *Journal of Economic Perspectives,* 13(4): 65–84.

EDWARDS, S. (2001). Capital mobility and economic performance: Are emerging economies different? *National Bureau of Economic Research,* WP8076.

EICHENGREEN, B. (2001). Capital account liberalisation: what do cross-country studies tell us? Unpublished, Berkeley, CA: University of California.

FISCHER, S. (2004). Capital account liberalisation and the role of the IMF. *In S. Fischer (ed), IMF Essays from a Time of Crisis: The International Financial System, Stabilization, and Development.* London: MIT Press, 115-134.

FORBES, K. J. (2006). How does capital account liberalisation affect growth? In IMF Economic Forum, Annual Research Conference, November 10. [Online] Transcript available at: http://www.imf.org/external/np/tr/2006/tr061110.htm.

GIBB, R. (1998). Southern Africa in transition: prospects and problems facing regional integration. *The Journal of Modern African Studies*, 36(2): 287-306.

GREENWOOD, J. and KIMBROUGH, K. P. (1987). An investigation in the theory of foreign exchange controls. *The Canadian Journal of Economics,* 20(2): 271-288.

GRILLI, V. and MILESI-FERRETTI, G. M. (1995). Economic effects and structural determinants of capital controls. *Staff Papers – International Monetary Fund,* 42(3): 517-551.

GWARTNEY, J. D., HAL, J. and LAWSON, R. (2010). 2010 Economic Freedom Dataset. *Economic Freedom of the World: 2010 Annual Report.* Economic Freedom Network. [Online] Available at: http://www.freetheworld.com/datasets_efw.html.

HENRY, P. B. (2006). Capital account liberalization: Theory, evidence, and speculation. *National Bureau of Economic Research,*WP12698.

INTERNATIONAL MONETARY FUND (IMF). (2000). *Annual Report on Exchange Arrangements and Exchange Restrictions*. Washington DC: International Monetary Fund.

IMF. (2005). *Annual Report on Exchange Arrangements and Exchange Restrictions*. Washington DC: International Monetary Fund.

IMF. (2010). *Annual Report on Exchange Arrangements and Exchange Restrictions*. Washington DC: International Monetary Fund.

IMF. (2011). *Articles of Agreement of the International Monetary Fund (1944).* Washington DC: International Monetary Fund.

IMF. (2012). *Liberalising Capital Flows and Managing Outflows*. Policy Paper 031312. Washington DC: International Monetary Fund

JEFFERIS, K. (2011). The status of exchange controls in SADC, and further liberalisation. Unpublished, prepared for SADC Secretariat: Gaborone.

JOHNSTON, R. B. and TAMIRISA, N. T. (1998). Why do countries use capital controls? IMF Working Paper, WP/98/181.

KAUFMANN, D.; KRAAY, A. and MASTRUZZI, M. (2010). The worldwide governance indicators: A summary of methodology, data and analytical issues. *World Bank Policy Research,* WP5439. [Online] Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130.

KLEIN, M. W. (2005). Capital account liberalization, institutional quality and economic growth: theory and evidence. *National Bureau of Economic Research,*WP11112.

KLEIN, M.W. and OLIVEI, G. (2000). Capital Account Liberalisation, Financial Depth and Economic Growth. Unpublished, Boston, MA: Fletcher School of Law and Diplomacy, Tufts University.

KORINEK, A. (2011). The new economics of prudential capital controls: A research agenda. *IMF Economic Review*, 59: 523–561.

KOSE, A. and PRASAD, E. (2012). Capital accounts: liberalise or not? *Finance and Development.* [Online]. Available at: http://www.imf.org/external/pubs/ft/fandd/basics/capital.htm.

KRAAY, A. (1998). In search of the macroeconomic effects of capital account liberalisation. Unpublished, Washington DC: The World Bank.

KRUGMAN, P.R and OBSTFELD, M. (2009). *International Economics: Theory and Policy, 8th ed.* Boston: Pearson.

NEELY, C. J. (1999). An introduction to capital controls. *Review, Federal Reserve Bank of St Louis,* November/December: 13-30.

O'DONNELL, B. (2001). Financial Openness and Economic Performance. Unpublished; Dublin: Department of Economics, Trinity College.

ODHIAMBO, N. M. (2009). Interest rate liberalisation and economic growth in Zambia: A dynamic linkage. *African Development Review,* 21(3): 541-557.

OHLIN, B. (1937). Mechanisms and objectives of exchange control. *The American Economic Review,* 27(1): 141-150.

ORLOV, A. G. (2005). Pros and cons of capital controls in the presence of incomplete markets. *The American Economist,* 49(1): 79-93.

PRASAD, E. S.; ROGOFF, K.; WEI, S-J. and KOSE, M. A. (2003). Effects of financial globalization on developing countries: some empirical evidence. *International Monetary Fund,* Occasional Paper 220.

PRATI, A., SCHINDLER, M. and VALENZUELA, P. (2009). Who benefits from capital account liberalisation? Evidence from firm-level credit ratings data. *IMF Working Paper*, WP/09/210.

QUINN, D.P. (1997). The correlates of change in international financial regulation. *American Political Science Review,* 91(3): 531-551.

QUINN, D. P. and INCLAN, C. (1997). The origins of financial openness: A study of current and capital account liberalization. *American Journal of Political Science,* 41(3): 771-813.

RAZIN, A. and ROSE, A. K. (1994). Business-cycles volatility and openness: an exploratory cross-sectional analysis. In *Capital Mobility: The Impact on Consumption, Investment and Growth,* ed. By Leonardo Leiderman and Assaf Razin. Cambridge, England: Cambridge University Press: 48-76.

REISEN, H. and SOTO, M. (2001). Which type of capital inflows foster developing country growth? *International Finance,* 4(1):1-14.

RODRIK, D. (1998). Who needs capital account convertibility. In Per Kenen (ed) *Should the IMF Pursue Capital Account Convertibility? Essays in international Finance,* 207(May).

SADC SECRETARIAT. (2003a). *Regional Indicative Strategic Development Plan.* Gaborone: SADC. [Online] Available at: http://www.sadc.int/english/key-documents/regional-indicative-strategic-development-plan.

SADC SECRETARIAT. (2003b). *Summary of the Regional Indicative Strategic Development Plan.* Gaborone: SADC. [Online] Available at: http://www.sadc.int/english/key-documents/regional-indicative-strategic-development-plan.

SADC SECRETARIAT. (2010). *Desk Assessment of the Regional Indicative Strategic Development Plan.* Final report approved by SADC Council, November 2011. Gaborone: SADC.

SCHINDLER, M. (2009). Measuring financial integration: A new data set. *IMF Staff Papers,* 56(1): 222-238.

STOCKMAN, A. C. and HERNANDEZ, A. D. (1985). Exchange controls, capital controls and international financial markets. *National Bureau of Economic Research,* WP1755: 1-31.

TAMIRISA, N. (1999). Exchange and capital controls as barriers to trade. *International Monetary Fund Staff Papers*, 46(1): 69-88.

TAVLAS, G.S. (2008). The benefits and costs of monetary union in South Africa. *Bank of Greece Economic Research Department,* WP70: 1-54.

TOBIN, J. (1978). A Proposal for International Monetary Reform. *Eastern Economic Journal* 4: 153-159.

TRANSPARENCY INTERNATIONAL. (2011). *Corruption Perceptions Index 2011*. [Online] Available at: http://cpi.transparency.org/cpi2011/results/.

WORLD BANK. (2010). *African Development Indicators 2010*. [Online] Available at: http://data.worldbank.org/data-catalog/africa-development-indicators.

WORLD BANK. (2011). *World Development Indicators 2011.* [Online] Available at: http://data.worldbank.org/data-catalog/world-development-indicators.

Appendix A: Summary of the Exchange Control Restrictiveness Index

Table A.1. Index Values for SADC Member States (2000 - 2010)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	209	2010
Angola	58.1	62.7	61.5	60.9	59.6	57.8	59.0	_	58.3	_	56.0
Botswana	16.1	16.1	14.5	14.5	14.9	18.5	18.3	16.3	15.3	17.9	17.9
DRC	41.3	39.0	39.2	37.1	34.6	34.6	34.3	34.4	35.8	36.8	35.7
Lesotho	41.8	_	_	_	_	44.7	_	_	_	_	42.2
Madagascar	28.0	29.0	29.4	29.0	28.9	29.4	27.7	25.9	28.8	30.4	31.9
Malawi	45.2	47.5	46.2	45.8	45.8	46.3	45.9	43.3	45.3	44.9	44.9
Mauritius	13.5	16.0	16.0	14.6	14.6	15.8	15.8	15.1	15.1	18.2	16.8
Mozambique	38.8	40.2	40.7	40.7	40.7	43.4	44.7	44.9	41.9	42.3	41.7
Namibia	49.2	_	_	_	_	52.7	_	_	_	_	44.7
Seychelles	22.2	25.8	25.8	25.8	33.5	30.9	25.4	25.4	15.3	9.7	9.7
South Africa	44.0	43.5	39.9	43.8	41.7	42.1	41.4	43.8	43.2	41.9	39.9
Swaziland	54.8	_	_	_	_	49.6	_	_	_	_	47.3
Tanzania	32.1	32.1	33.2	33.7	33.7	35.2	34.4	35.3	35.3	37.3	36.1
Zambia	8.6	7.1	7.4	7.0	7.4	9.1	8.7	9.3	10.6	9.7	9.3
Zimbabwe	56.3	59.6	60.4	61.8	62.9	61.4	63.0	62.7	51.7	50.3	29.7

Table A.2. Index Values for Comparison Countries (2010)

	Goods Restrict	Service Restrict	Capital Account	Financial sector only	Applies to all	Overall
Australia	12.5	0	21.4	12.5	7.7	**10.8**
Brazil	41.7	7.5	37.5	64.6	26	**34.5**
Chile	6.3	0	41.1	37.5	5.8	**16.9**
China	39.6	42.5	66.1	60.4	30.8	**45.3**
Cote d'Ivoire	45.8	42.5	55.4	56.3	44.2	**48.3**
Germany	10.4	0	32.1	18.8	9.6	**14.2**
Ghana	35.4	20.0	25	27.1	27.9	**27.4**
India	59.1	57.5	78.6	50	42	**55.4**
Japan	12.5	15	32.1	4.2	9.6	**14.2**
Kenya	12.5	0	26.8	39.6	8.7	**16.6**
Malaysia	47.9	0	50.0	47.9	37	**38**
Mexico	14.6	0	32.1	62.5	26	**27.7**
Nigeria	45.8	52.5	26.8	52.5	28.1	**37.9**
Russia	25	7.5	26.8	35	21.2	**22.9**
Turkey	16.7	7.5	32.1	31.3	20.2	**22**
UK	10.4	0	7.1	6.3	4.6	**5.7**
USA	10.4	0	30.4	2.1	9.6	**11.1**

Table A.3. Complete ECRI Components for SADC - 2010

	Goods Restrict	Service Restrict	Capital Account	Financial sector only	Applies to all	Overall
ANGOLA						
						TOTAL
Sum	46.0	50.0	54.0	30.0	120.0	300.0
No. Items	12.0	9.0	11.0	9.0	26.0	67.0
Index (%)	47.9	69.4	61.4	41.7	57.7	**56.0**
BOTSWANA						
						TOTAL
Sum	14.0	0.0	32.0	28.0	26.0	100.0
No. Items	11.0	10.0	14.0	11.0	24.0	70.0
Index (%)	15.9	0.0	28.6	31.8	13.5	**17.9**
DRC						
						TOTAL
Sum	40.0	22.0	54.0	40.0	58.0	214.0
No. Items	12.0	10.0	14.0	12.0	27.0	75.0
Index (%)	41.7	27.5	48.2	41.7	26.9	**35.7**
LESOTHO						
						TOTAL
Sum	38.0	44.0	64.0	28.0	76.0	250.0
No. Items	12.0	10.0	13.0	12.0	27.0	74.0
Index (%)	39.6	55.0	61.5	29.2	35.2	**42.2**
MADAGASCAR						
						TOTAL
Sum	20.0	8.0	50.0	18.0	70.0	166.0
No. Items	12.0	9.0	14.0	5.0	25.0	65.0
Index (%)	20.8	11.1	44.6	45.0	35.0	**31.9**
MALAWI						
						TOTAL
Sum	38.0	48.0	60.0	40.0	76.0	262.0
No. Items	12.0	10.0	14.0	12.0	25.0	73.0
Index (%)	39.6	60.0	53.6	41.7	38.0	**44.9**
MAURITIUS						
						TOTAL
Sum	22.0	0.0	38.0	18.0	20.0	98.0
No. Items	12.0	10.0	14.0	12.0	25.0	73.0
Index (%)	22.9	0.0	33.9	18.8	10.0	**16.8**
MOZAMBIQUE						
						TOTAL
Sum	32.0	40.0	52.0	52.0	74.0	250.0
No. Items	12.0	10.0	14.0	12.0	27.0	75.0
Index (%)	33.3	50.0	46.4	54.2	34.3	**41.7**
NAMIBIA						
						TOTAL
Sum	40.0	52.0	60.0	38.0	64.0	254.0
No. Items	12.0	10.0	13.0	10.0	26.0	71.0
Index (%)	41.7	65.0	57.7	47.5	30.8	**44.7**
SEYCHELLES						
						TOTAL
Sum	14.0	0.0	8.0	12.0	24.0	58.0
No. Items	12.0	10.0	14.0	12.0	27.0	75.0
Index (%)	14.6	0.0	7.1	12.5	11.1	**9.7**
SOUTH AFRICA						
						TOTAL
Sum	38.0	44.0	62.0	50.0	42.0	236.0
No. Items	12.0	10.0	14.0	12.0	26.0	74.0
Index (%)	39.6	55.0	55.4	52.1	20.2	**39.9**
SWAZILAND						
						TOTAL
Sum	38.0	56.0	62.0	54.0	70.0	280.0
No. Items	12.0	10.0	14.0	12.0	26.0	74.0
Index (%)	39.6	70.0	55.4	56.3	33.7	**47.3**
TANZANIA						
						TOTAL
Sum	28.0	14.0	60.0	40.0	66.0	208.0
No. Items	11.0	10.0	14.0	11.0	26.0	72.0
Index (%)	31.8	17.5	53.6	45.5	31.7	**36.1**
ZAMBIA						
						TOTAL
Sum	16.0	0.0	4.0	8.0	28.0	56.0
No. Items	12.0	10.0	14.0	12.0	27.0	75.0
Index (%)	16.7	0.0	3.6	8.3	13.0	**9.3**
ZIMBABWE						
						TOTAL
Sum	20.0	8.0	64.0	26.0	58.0	176.0
No. Items	12.0	10.0	14.0	12.0	26.0	74.0
Index (%)	20.8	10.0	57.1	27.1	27.9	**29.7**

Appendix B: Tables

<table>
<tr><th colspan="6">Table B.1. Summary of Restrictiveness Data & Indices</th></tr>
<tr><td></td><td>*Name*</td><td>*Source*</td><td>*Description*</td><td>*Range*</td><td>*Year*</td><td>*Country Coverage*</td></tr>
<tr><td colspan="7">**Baseline Restrictiveness Data**</td></tr>
<tr><td>1</td><td>IMF (until 1995)</td><td>IMF AREAER, line E2, various issues</td><td>Constructed as an on/off indicator of the existence of rules/restrictions that inhibit cross-border flows.</td><td>0 (never restricted) to 1 (always restricted)</td><td>1967 – 1995 after which format changes</td><td>117 countries for years 1976-95 to 137 countries for years 1986 -95</td></tr>
<tr><td>2</td><td>IMF (1996 onwards)</td><td>IMF AREAER, various issues</td><td>Constructed as a narrative description of the existence or rules/restrictions that inhibit cross-border flows.</td><td>Narrative descriptions of restrictions</td><td>1996 - 2011</td><td>All members states for each year of issue</td></tr>
<tr><td colspan="7">*De Jure* **Measures**</td></tr>
<tr><td>3</td><td>Share</td><td>AREAER, line E2, various issues</td><td>Uses IMF measure to create proportion of years that capital account is judged free of restrictions. Can be constructed for any range, 1966-95.</td><td>0 (never restricted) to 1 (always restricted)</td><td>1967 – 1995 after which format changes</td><td>117 (76-95) to 137 (86-95)</td></tr>
<tr><td>4</td><td>Tamirisa</td><td>Tamirisa (1999) using AREAER data</td><td>16 categories measuring the extent of exchange and capital controls based on data from the IMF's AREAER.</td><td>1 (prohibitions, quantitative limits, approval and registration Requirements) 0 (measures for statistical purposes, administrative verification, liberal granting of licenses & no restrictions)</td><td>1996</td><td>40 countries of which 15 are industrial countries, 19 are developing and 6 are transitional economies.</td></tr>
<tr><td>5</td><td>Schindler</td><td>Schindler (2010) using AREAER data</td><td>Measure of *de jure* restrictions of cross-border financial transactions using the IMF's AREAER.</td><td>Disaggregated categories coded in binary form: 0 (unrestricted) 1 (restricted)</td><td>1995 – 2005</td><td>91 countries of which 35 are high income, 42 middle income and 14 low-income countries.</td></tr>
<tr><td>6</td><td>KAOPEN</td><td>Chinn & Ito (2010) using AREAER data</td><td>Index measuring a country's degree of capital account openness based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's AREAER.</td><td>0 (restricted) and 1 (unrestricted) (reversed to reflect openness rather than controls)</td><td>1970 – 2010</td><td>181 (1970-2005) to 182 countries (2005-2010)</td></tr>
<tr><td>7</td><td>Quinn</td><td>Quinn (1997) using AREAER pre-1996</td><td>Constructed from narrative descriptions in AREAER regarding capital account restrictions.</td><td>Larger numbers mean less Restricted. . Values in ½ point increments, 0 – 4</td><td>Full Sample: 1958, 1973, 982, and 1988</td><td>63 countries of which 20 are advanced and 43 are developing countries</td></tr>
</table>

			Table B.1. Continued			
8	ΔQuinn	Quinn (1997)	Difference in Quinn Indicators	Actual Ranges for Capital Account 1988 – 1982; -1 to 2 1988 – 1973; -2 to 2	Construct from dates above	63 countries of which 20 are advanced and 43 are developing countries
9	OECD-Share	Code of Liberalisation of Capital Movements	Proportion of the 11 categories free of restrictions, averaged over the relevant period.	0 (always restricted) to 1 (never restricted)	1986, 1988, 1990, 1993, 1995	21 OECD countries
10	MR	Montiel & Reinhart (1999)	Measures the intensity of capital account restrictions	0 (unrestricted), 1 (mild restrictions), 2 (severe restrictions)	Annual, 1990 - 1996	15 emerging markets
			De Facto Measures			
11	Levine/ Zervos & Henry	Levine and Zervos (1998) and Henry (2000a and b)	Dates of stock market liberalizations in emerging markets.	Constructed as 0/1 dummies for event studies or Share of years open for cross-section.	Earliest: May 86. Latest: Dec. 91	11 emerging markets
12	BHL	Bekaert Harvey & Lundblad, 2001	Dates of stock market liberalizations in emerging markets and industrial economies.	Constructed to be between 0 and 1	Earliest: 1980, Latest: 1997	95 countries. 43 had some experience with financial liberalization (25 emerging market, 18 OECD)
13	EW	Edison and Warnock (2001)	One minus the ratio of the IFC investable index to the IFC global index	Constructed as percent of GDP	Earliest 1988 to present	29 emerging markets
14	Capital Flows	Kraay (1998)	Measure based on actual capital flows	Constructed as percent of GDP		All countries with BOP Statistics
15	Capital Stocks	Lane and Milesi-Ferretti (2001)	Measure based on accumulated or stock of gross capital flows.	Constructed as percent of GDP	Earliest 1970 - 1998	70 countries, mix of advanced and developing
			Source: Adapted from Edison, Klein, Ricci and Sløk (2002)			

Table B.2. Overview of the Studies of the Impact of Capital Account Liberalisation on Growth

Study	Countries	Liberalisation Measure	Dependent Variable and Estimation Method	Main Results for GDP Growth	Effect on Growth
Grilli & Milesi-Ferretti, 1995	61	Share	Growth in income per capita for five-year non-overlapping periods during 1971 - 1994. IV estimation.	No evidence of a significant effect of Share on growth of income per capita.	No effect
Quinn 1997	58	ΔQuinn, betweem 1988 and 1958	Growth in income per capita 1960 - 1989. Cross Section, OLS	ΔQuinn significantly raises growth in income per capita, though no regression in presented with both ΔCapital Controls and ΔOpenness.	Positive
Rodrik, 1998	About 100	Share	Growth in income per capita over 1975 - 1995. Cross Section, OLS.	No evidence of a significant effect of Share on growth of income per capita.	No effect
Kraay, 1998	64, 94, or 117	Share; Quinn; or Volume	Growth in income per capita over 1975 - 1995. Cross Section, OLS & IV. Samples of 117 (Share), 94 (Volume) or 64 (Quinn).	No effect of Share or Quinn on Growth. Coefficient on Volume significant and positive.	No effect or, at best, mixed
Klein & Olivei 2000	67	Share	Growth in income per capita, 1976 - 1995. Cross Section, IV. Change in Financial Depth (ΔFD) as a function of Share and then per capita income growth as a function of instrumented value of ΔFD (and initial FD).	Significant effect of Share on ΔFD, though results seem to be driven by OECD countries in sample. Significant effect of instrumented values of ΔFD and FD on growth.	Positive
Edwards 2001	55 to 62	Quinn in 1988; or ΔQuinn 1988 - 1973	Growth in income per capita 1980 - 1989. Cross Section. WLS (1985 GDP as weight), IV. Also uses interaction of Quinn in 1988 and log(GDP in 1980).	Quinn level significantly raises GDP growth. Interaction suggests that, at low GDP, opening capital account may lower GDP growth.	Positive, except for poor countries
Artete, Eichgreen & Wyplotz, 2001	51 to 59	Quinn in Initial Year; or ΔQuinn over relevant period	Growth in income per capita 1973 - 81, 1982 - 87, 1988 - 92, or pooled for these 3 periods. Follows Edwards (2001) but with OLS rather than WLS and with different instruments.	Quinn significant for pooled results but not for shorter subsamples. ΔQuinn not significant. Significant effect of interaction of Quinn with either quality of law or openness.	Mixed
Bekaert, Harvey & Lundblad, 2001	30 Emerging markets	Official Dates of Stock Market Liberalisation	Growth in income per capita for various time periods between 1981 and 1997, resulting in overlapping data.	Stock market liberalisation significantly contributes to growth in income per capita, with largest effects shortly after liberalisation.	Positive
O'Donnell, 2001	94	Share or Volume	Growth in income per capita over 1971 - 1994. Regressions include interaction between FD and Share, and Volume and FD.	Neither Share nor interaction of Share and FD significant, but Volume sometimes significant.	No effect or, at best, mixed
Chanda, 2001	57 non-OECD	Share	Growth in income per capita over 1975 - 1995. Share interacted with measure of ethnic heterogeneity.	Share significantly raises growth in ethnically heterogenous countries and significantly lowers it in ethnically homogenous countries.	Mixed
Reisen & Soto, 2001	44	Share	Growth in income per capita over 1986-1997. IV and GMM used for regression.	Statistically significant positive growth impact of foreign direct and portfolio equity flows but negative for current bank lending.	Mixed
Edison, Klein, Ricci & Sløk, 2002	Up to 89	Share, Quinn, ΔQuinn, Stock market dates from Bekaert et al.	Growth in real per capita GDP over 1973-1995.	Mixed, but find some support for a positive effect of capital account liberalization on growth, especially for developing countries	Mixed
Edison, Levine, Ricci & Sløk, 2002	57	Use five different measures of international financial integration.	Growth in real per capita GDP over 1980-2000. OLS, 2SLS IV & GMM.	Unable to reject the null hypothesis that international financial integration does not accelerate economic growth even when controlling for particular economic, financial, institutional, and policy characteristics.	No effect
Klein, 2005	71	Share	Growth in real per capita income over 1976-1995.	Countries with better (but not the best) institutions exibit a statistically significant and economically meaningful, non-monotonic interaction between the responsiveness of growth to capital account liberalisation.	Positive

NOTES: Share is proportion of years that IMF's AREAR shows open capital accounts. **Quinn** is Quinn's 0 - 4 measure of capital intensity. **ΔQuinn** is change in value of Quinn 0 - 4 measure. **Volume** is measure of volume of capital flows. **Cross Section** refers to 1 observation per country.

Source: Authors' update based on Edison, Klein, Ricci & Sløk, 2002: 35.

Table B.3. Overview of Studies of the Impact of Capital Account Liberalisation

Study	Countries & Year Coverage	Liberalisation Measure	Dependent Variable and Estimation Method	Main Results
Razin & Rose, 1994, **Y, C & I VOLATILITY**	138 countries over 1950-1988	Dummy variables (1=capital controls present) based on IMF's AREAER and Pritchett openness data (1991).	GDP per capita for Y, with standard deviations of detrended vairables for volatility.	No significant empirical link between financial openness and the volatility of Y, C or I.
Easterly, Islam & Stiglitz, 2001, **Y VOLATILITY**	74 countries over 1960-1997	Actual capital flows as a ratio of GDP	Standard deviation of real GDP per capita growth.	Neither financial openness nor the volatility of capital flows has a signficant impact on output volatility. A more developed financial sector, however, is associated with lower volatility.
Buch, Döpke & Pierdzioch, 2005, **Y VOLATILITY**	24 OECD countries for 1960-2000	Actual capital flows as a ratio of GDP as well as *de jure* controls.	Business cycle volatility. Band-pass filter used.	No consistent empirical relationship between financial openness and volatility of output.
O'Donnell, 2001, **Y VOLATILITY**	93 countries over 1971-1994	Share or Volume	Income per capita. Regressions include interaction between FD and Share, and Volume and FD.	Higher degree of financial integration is associated with lower (higher) output volatility in OECD (non-OECD) countries. Countries with more developed financial sectors are more able to reduce output volatility through financial integration.
Grilli & Milesi-Ferretti, 1995, **INFLATION & REAL INTEREST RATES**	Panel data for 61 countries over 1960-1989	Dummy variables (1=capital controls present) based on IMF's AREAER.	Annual rate of change of Consumer Price Index for inflation and long-term nominal interest rate on goverment debt minus actual inflation for interest rates. OLS and WLS.	Capital controls are found to be associated with higher inflation and lower real interest rates.
Tamirisa, 1999, **TRADE**	Cross-sectional data for 42 countries for 1996	Own index of capital and exchange controls based on IMF's AREAER tables	Bilateral exports of goods and services using a gravity-model framework.	Controls on capital payments and transfers are a notable barrier to trade in all but industrial countries. Controls on current payments and transfers reduce bilateral trade flows insignificantly.
Cardosa & Goldfajn, 1998, **EFFECTIVENESS OF CONTROLS**	Brazil, 1983-1995	Own index of changes in restrictions on capital inflows and outflows.	Effect of controls on both total flows and compositions of actual flows. IV and vector auto-regressions.	Controls have been temporarily effective in altering levels and compositions of capital flows but have had no significant or sustained effects in the long-run.
Binici, Hutchinson & Schindler, 2010, **EFFECTIVNESS OF CONTROLS**	74 countries during 1995-2005	Panel data set of capital controls, disaggregated by asset class and by inflows/outflows based on Lane & Milesi-Ferretti (2007).	Effect of controls on actual flows (volume and composition).	Capital controls can affect both the volume and the composition of capital flows. In particular, both debt and equity controls can substantially reduce outflows, with little effect on capital inflows, but only high-income countries appear able to effectively impose debt (outflow) controls.

NOTES: Y = output, **C** = Consumption and **I** = investment; **Share** is proportion of years that IMF's AREAR shows open capital accounts. **Volume** is measure of volume of capital flows.

Appendix C: Article VIII and Article XIV status

The IMF has played an important role in promoting the liberalisation of the current account. When a country becomes a member state of the IMF, it is obliged under the Articles of Agreement to refrain from imposing distortionary current account restrictions. There are two articles members can commit to: Article VIII and Article XIV. Under the first, members may not introduce or reintroduce current account restrictions without permission from the IMF, may not engage in multiple currency practices (such as dual exchange rates or different exchange rates for different types of transactions) and must allow their national currency to be freely exchanged for all current account transactions including visible and invisible trade, income and transfers (IMF, 2011).

If a member state feels unable to commit to the Article VIII stipulations, there is the option of adopting the arrangements under Article XIV, which permits members to impose temporary exchange controls with the view to removing them as soon as it is viable to do so (Section 2, IMF). Article VIX requires that: "any member retaining any restrictions inconsistent with Article VIII, Sections 2, 3, or 4 shall consult the Fund annually as to their further retention" and "maintain and adapt to changing circumstances the restrictions on payments and transfers for current international transactions that were in effect on the date on which it became a member" (Section 2) (IMF, 2011). Under Article VIX, members may not: "without the approval of the Fund, impose restrictions on the making of payments and transfers for current international transactions" (Section 2) or "engage in any discriminatory currency arrangements or multiple currency practices" (Section 3) (IMF, 2011).

The number of IMF member countries subscribing to Article VIII has risen from 150 in 2001 to 175 in 2010, at which point only 19 countries continued to subscribe to Article XIV (Jefferis, 2011). Articles VIII and XIV apply only to current account transactions. There are no limitations on the ability of members to impose restrictions on capital account transactions. It is generally accepted that exchange controls should be kept to a minimum.

As is evident from this paper, a country that accepts Article VIII status does not mean that it does not have any current account restrictions.

Appendix D: Correlation Data

Table D.1. GDP Growth & ECRI Data

Gross Domestic Product Growth (annual %)				ECRI (%)		
Country	2000	2005	2010	2000	2005	2010
Angola	3.0	20.6	2.3	56.3	57.8	57.1
Botswana	5.9	1.6	7.2	15.2	18.9	18.1
Congo, DR	-6.9	6.5	7.2	41.3	34.1	35.7
Lesotho	5.7	1.1	3.3	41.8	44.7	42.2
Madagascar	4.8	4.6	1.6	27.0	29.4	32.3
Malawi	1.6	2.6	7.1	42.5	48.1	44.9
Mauritius	9.0	1.2	4.0	9.4	17.1	17.0
Mozambique	1.1	8.4	7.2	41.5	47.0	39.3
Namibia	3.5	2.5	4.8	49.2	52.7	44.7
Seychelles	4.3	7.5	6.2	24.6	42.7	8.4
South Africa	4.2	5.3	2.8	44.4	43.8	39.9
Swaziland	10.1	2.2	1.1	54.8	49.6	47.3
Tanzania	4.9	7.4	7.0	30.6	36.5	35.7
Zambia	3.6	5.2	7.6	9.4	10.5	10.5
Zimbabwe	-2.7	-6.1	9.0	57.9	65.3	28.1

Source: *African Development Indicators*, World Bank (2011)

Table D.2. Financial Sector Depth Indicators & ECRI Data

	CIC/GDP			NCP*/GDP			ECRI (%)		
Country	2000	2005	2010	2000	2005	2010	2000	2005	2010
Angola	0.055	0.042	0.110	2.014	5.144	20.391	56.3	57.8	57.1
Botswana	0.066	0.061	0.092	15.118	19.139	23.404	15.2	18.9	18.1
Congo, DR	...	0.035	0.059	...	1.872	6.572	41.3	34.1	35.7
Lesotho	0.200	0.191	0.320	16.383	9.252	14.052	41.8	44.7	42.2
Madagascar	0.153	0.120	0.144	8.777	9.879	11.707	27.0	29.4	32.3
Malawi	0.094	0.074	...	9.076	7.913	...	42.5	48.1	44.9
Mauritius	0.111	0.224	0.297	57.497	75.276	87.769	9.4	17.1	17.0
Mozambique	0.130	0.178	0.274	16.742	11.842	25.770	41.5	47.0	39.3
Namibia	0.212	0.174	0.270	39.785	51.806	45.637	49.2	52.7	44.7
Seychelles	0.302	0.462	0.474	22.305	32.069	28.733	24.6	42.7	8.4
South Africa	0.289	0.166	0.178	133.729	138.689	145.360	44.4	43.8	39.9
Swaziland	0.064	0.072	0.095	12.813	21.617	23.290	54.8	49.6	47.3
Tanzania	0.085	0.138	0.194	4.088	10.181	16.113	30.6	36.5	35.7
Zambia	0.077	0.099	0.158	8.551	7.721	11.504	9.4	10.5	10.5
Zimbabwe	0.185	0.385	...	27.454	16.280	...	57.9	65.3	28.1

* NCP/GDP = Domestic credit to private sector (% of GDP)

Source: Authors' calculations based on data from World Bank African Development Indicators (2010) and ECRI

Table D.3. Correlations between Economic Freedom of the World dataset and ECRI

The Areas and Components of the EFW Index		Correlation Coefficients with ECRI	
		2000	2005
Area 1: Size of Government: Expenditures, Taxes, and Enterprises		**0.25**	**0.48**
A	General government consumption spending	0.16	0.22
B	Transfers and subsidies as a percentage of GDP	0.13	0.06
C	Government enterprises and investment	-0.52	0.10
D	Top marginal tax rate	0.82	0.65
i	Top marginal income tax rate	0.86	0.64
ii	Top marginal income and payroll tax rates	0.68	0.47
Area 2: Legal Structure and Security of Property Rights		**0.18**	**0.25**
A	Judicial independence (GCR)	-0.42	0.25
B	Impartial courts (GCR)	-0.23	0.44
C	Protection of property rights (GCR)	-0.13	0.51
D	Military interference in rule of law and the political process (CRG)	0.39	0.25
E	Integrity of the legal system (CRG)	0.27	0.02
F	Legal enforcement of contracts (DB)		-0.04
G	Regulatory restrictions on the sale of real property (DB)		0.07
Area 3: Access to Sound Money		**0.69**	**0.74**
A	Money Growth	0.45	0.56
B	Standard deviation of inflation	0.52	0.55
C	Inflation: Most recent year	0.46	0.37
D	Freedom to own foreign currency bank accounts	0.79	0.89
Area 4: Freedom to Trade Internationally		**0.73**	**0.58**
A	Taxes on international trade	-0.15	0.43
i.	International trade tax revenues (% of trade sector)	0.08	0.44
ii	Mean tariff rate	-0.21	-0.01
iii	Standard deviation of tariff rates	-0.08	0.44
B	Regulatory Trade Barriers	*0.67*	0.21
i	Non-tariff trade barriers (GCR)	*0.96*	0.21
ii	Compliance cost of importing and exporting (DB)	*-0.01*	0.23
C	Size of the trade sector relative to expected	-0.11	-0.67
D	Black-market exchange rates	0.54	0.48
E	International capital market controls	0.80	0.71
i	Foreign ownership/investment restrictions (GCR)	0.91	0.67
ii	Capital controls	0.92	0.83
Area 5: Regulation of Credit, Labor, and Business		**0.11**	**0.40**
A	Credit market regulations	0.14	0.15
i.	Ownership of banks	0.05	-0.20
ii	Foreign bank competition	*-0.96*	0.13
iii	Private sector credit	0.28	0.37
iv	Interest rate controls/Negative real interest rates	-0.10	0.47
B	Labor market regulations	*-0.21*	0.39
i	Minimum wage (DB)	*-0.49*	0.23
ii	Hiring and firing regulations (GCR)	*0.62*	0.49
iii	Centralized collective bargaining (GCR)	*0.31*	0.33
iv	Mandated cost of hiring (DB)	*-0.91*	0.14
C	Business Regulations	*0.47*	0.62
i	Price controls	-0.02	0.26
ii	Administrative requirements (GCR)	*0.23*	0.53
iii	Bureaucracy costs (GCR)	*0.67*	0.62
iv	Starting a business (DB)	*-0.75*	0.58
v	Extra payments/Bribes (GCR)	0.49	-0.05
vi	Licensing restrictions (DB)		0.39
vii	Cost of tax compliance (DB)		0.47
Sum of all areas		**0.63**	**0.68**

Note: Values in italics indicate correlations formed from 5 or less common datapoints

Source: Authors' calculations. EFW data from Gwartney, Hall & Lawson (2010)

Table D.4. Correlations between Political-Economy Indictors & Restrictiveness Index

	2010
Corruption Perception Index	-0.6
Ease of Doing Business	0.54
Voice and Accountability	-0.36
Political Stability and Absence of Violence	-0.37
Government Effectiveness	-0.33
Regulatory Quality	-0.27
Rule of Law	-0.33

Source: Authors' calculations based on data from Transparency International (2011), World Bank (2011) and Kaufmann, Kraay & Mastruzzi (2010). See D5-7.

Table D.4 records the correlation figures for the relationship between the new restrictiveness index and various political-economy indicators including corruption, business environment, political stability, government effectiveness and legal quality. The correlation with the corruption perception index suggests a negative relationship between corruption and exchange and capital restrictiveness. This implies that countries with more controls are also more corrupt (although not implying a causal relationship), which makes intuitive sense as greater levels of regulation allow more opportunities for corruption at each step of the bureaucratic process[18]. The positive correlation between ease of doing business and restrictiveness suggests that fewer exchange and capital controls create a more conducive environment for setting up and running businesses. The governance indicators all have the expected sign (better governance is generally associated with fewer restrictions) but fairly low values.

Table D.5. Corruption Perception Index & Restrictiveness Index Data

Corruption Perceptions Index, 2011			ECRI (%)		
Rank	Country	Score	Country	2010	2010 Rank
168	Angola	2	Angola	57.1	15
32	Botswana	6.1	Botswana	18.1	3
168	Congo, DR	2	DRC	35.7	7
77	Lesotho	3.5	Lesotho	42.2	9
100	Madagascar	3	Madagascar	32.3	5
100	Malawi	3	Malawi	44.9	11
46	Mauritius	5.1	Mauritius	17.0	2
120	Mozambique	2.7	Mozambique	39.3	10
50	Seychelles	4.8	Seychelles	8.4	4
64	South Africa	4.1	South Africa	39.9	8
95	Swaziland	3.1	Swaziland	47.3	14
100	Tanzania	3	Tanzania	35.7	6
91	Zambia	3.2	Zambia	10.5	1
154	Zimbabwe	2.2	Zimbabwe	28.1	13

Source: Transparency International (2011)

Note on Corruption Perception Index

The Corruption Perceptions Index ranks countries/territories based on how corrupt their public sector is perceived to be. A country/territory's score indicates the perceived level of public sector corruption as seen by business people and country analysts on a scale of 0 - 10, where 0 means that a country is perceived as highly corrupt and 10 means that a country is perceived as very clean. A country's rank indicates its position relative to the other countries/territories included in the index. 16 surveys and expert assessments were used and at least 3 were required for a country to be included in the CPI.

Table D.6. Ease of Doing Business & ECRI Data

Ease of doing business index		ECRI (%)	
Country Name	2010	2010	Rank
Angola	171	57.1	15
Botswana	52	18.1	3
Congo, Dem.	176	35.7	7
Lesotho	142	42.2	9
Madagascar	144	32.3	5
Malawi	141	44.9	11
Mauritius	21	17.0	2
Mozambique	132	39.3	10
Namibia	74	44.7	12
Seychelles	109	8.4	4
South Africa	36	39.9	8
Swaziland	123	47.3	14
Tanzania	125	35.7	6
Zambia	80	10.5	1
Zimbabwe	168	28.1	13

(1=most business-friendly regulations)

Source: World Bank, *World Development Indicators* (2011)

Note on Ease of Doing Business Index

The Ease of Doing Business index ranks economies from 1 to 183, with first place being best. A high ranking means that the regulatory environment is conducive to business operation. The index ranks the simple average of the country's percentile rankings on 10 topics covered in the World Bank's Doing Business. The ranking on each topic is the simple average of the percentile rankings on its component indicators.

Table D.7. Worldwide Governance Indicators & ECRI Data

	Voice & Accountability	Polictal Stability - No Violence	Government Effectiveness	Regulatory Quality	Rule of Law	Control of Corruption	Average	Rank	ECRI 2010	Rank 2010
ANGOLA	11.3	26.8	5.2	7.6	4.2	1.4	9.4	13	57.1	15
BOTSWANA	55.7	65.3	63.3	56.7	64.2	73.3	63.1	2	18.1	3
Congo, Dem. Rep.	6.6	1.4	0.5	2.9	0.9	0.5	2.1	15	35.7	7
LESOTHO	34.4	47.4	29.0	19.0	35.4	55.7	36.8	6	42.2	9
MADAGASCAR	19.3	8.9	12.9	21.9	13.7	35.7	18.7	12	32.3	5
MALAWI	35.4	33.3	28.6	21.9	43.4	28.6	31.9	8	44.9	11
MAURITIUS	64.6	51.2	66.2	70.5	66.5	68.6	64.6	1	17.0	2
MOZAMBIQUE	37.3	42.3	26.2	28.6	28.8	31.4	32.4	7	39.3	10
NAMIBIA	54.2	57.3	47.6	48.1	55.7	57.6	53.4	3	44.7	12
SEYCHELLES	42.9	57.3	46.2	19.0	47.6	55.7	44.8	5	8.4	4
SOUTH AFRICA	58.0	32.4	56.7	54.3	51.4	54.3	51.2	4	39.9	8
SWAZILAND	8.0	28.6	19.5	18.6	27.8	37.1	23.3	10	47.3	14
TANZANIA	38.7	32.9	24.8	27.6	28.3	26.2	29.7	9	35.7	6
ZAMBIA	34.4	49.8	13.3	24.3	29.2	1.0	25.3	11	10.5	1
ZIMBABWE	5.2	6.1	1.0	1.0	0.5	0.0	2.3	14	28.1	13

<u>Source:</u> Kaufmann, Kraay & Mastruzzi (2010), World Bank

Note on Worldwide Governance Indicators

The Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for 213 economies over the period 1996–2010, for six dimensions of governance:

- Voice and Accountability
- Political Stability and Absence of Violence
- Government Effectiveness
- Regulatory Quality
- Rule of Law
- Control of Corruption

The aggregate indicators combine the views of a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. The individual data sources underlying the aggregate indicators are drawn from a diverse variety of survey institutes, think tanks, non-governmental organizations, and international organizations.

Endnotes

[1] Recent academic studies on the benefits and costs of single-currency areas suggests that the adoption of a common currency can improve the structural characteristics of the economies concerned, increasing trade-integration and business cycle correlation, and enhancing the credibility of macroeconomic policies (Tavlas, 2008; Frankel & Rose, 1998; Rose, 2000).

[2] Article 21 "lays the foundations for areas of cooperation by member states and emphasises the need for countries in the region to cooperate in all areas so as to advance regional development and integration" (Belle, 2010: 85).

[3] Article 22 "calls for the member states to conclude Protocols that will support the areas of cooperation and integration, and the creation of relevant institutions to implement programs of regional integration" (Belle, 2010: 85).

[4] The RISDP was approved in 2003 and began being effectively implemented in 2005 after the development of a detailed 'operationalisation framework' (SADC Secretariat, 2010).

[5] Out of the 46 targets set in the RISDP implementation framework of 2005-2010 under 'cross-cutting issues', 14% have been fully achieved, 68% partially achieved and 18% not achieved (SADC Secretariat, 2010).

[6] The AREAER is a unique database published by the IMF tracking exchange and trade arrangements for all 187 member countries since 1950 (IMF, 2010). Individual country chapters report exchange measures in place, the structure and setting of the exchange rate, arrangements for payments and receipts, procedures for resident and nonresident accounts, mechanisms for import and export payments and receipts, controls on capital transactions, and provisions specific to the financial sector (IMF, 2010).

[7] Individual country chapters report exchange measures in place, the structure and setting of the exchange rate, arrangements for payments and receipts, procedures for resident and nonresident accounts, mechanisms for import and export payments and receipts, controls on capital transactions, and provisions specific to the financial sector (IMF, 2010).

[8] Edison, Klein, Ricci and Sløk's 2002 paper on capital account liberalisation provides a thorough discussion of each of the (and some additional) measures.

[9] Capital account liberalisation is viewed as a pathway to achieving greater financial depth and integration internationally, which is expected to lead to higher growth. Empirical studies use both capital account liberalisation and financial integration as the independent variables in studies relating to growth.

[10] GDP per capita below US$ 3 000

[11] GDP per capita above US$ 5 000

[12] 1 indicates capital account restrictions exist and 0 indicates no restrictions.

[13] Until 1995, the AREAER was presented using binary dummy variables to indicate restrictiveness (Schindler, 2008: 224). Since 1995 however, the AREAER provides more in-depth information on openness to capital flows and contains summary tables with details on the restrictions in place for all IMF member countries. The new index utilises this more structured and comprehensive approach.

[14] Goods, Services, Capital Account, Financial Sector Only and Restrictions Applying to All.

[15] For example, in 2000 Lesotho had only reported information for 55 out of the 75 restrictions selected for coding giving it a total restrictiveness score of 41.8% in the new index. If the missing 20 line items were, in reality, unrestricted and had been reported and captured in the AREAER, the score would have been 30.6%. On the other hand if each of those line items were actually maximally restricted, the score should have been 56.5%. This gives an approximate margin of error or 26%. When removing missing information from the count this error is averaged but the potential for bias is still high, especially in restrictive countries that under-report.

[16] The correlation for 2005 excludes Angola, which is a significant outlier with a spike in GDP growth rate from average values of 3% per annum to 20% in 2005; dropping back down to 2-3% in the following years.

[17] South Africa has a substantially developed financial sector but is still fairly restrictive and Zambia has a very underdeveloped financial sector but is pursuing its development through the liberalisation of exchange controls (Odhiambo, 2009).

[18] Essentially using corruption as a proxy for bureaucracy.