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Monetary Unions of Small Currencies and a Dominating Member: What Policies Work Best for Benefiting from the CMA?

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POLICY PAPER SERIES

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ABSTRACT

Monetary Unions of Small Currencies and a Dominating Member: What Policies Work Best for Benefiting from the CMA?¹

This policy paper underscores the importance of credible currency regimes and their macroeconomic underpinnings for stability in financial systems and long-term economic convergence of developing and emerging market economies. It suggests that for developing regions such as Sub-Saharan Africa, taking steps toward fixed exchange rate frameworks, as a milestone on the path to monetary union, could provide credibility that individual countries struggle to attain on their own. Specifically, fixed arrangements, can restrain unsustainable policies among small economies and enable them to achieve greater stability at lower costs. The paper provides successful examples in this area. Moreover, while it is well-understood that monetary unions and fixed exchange rate regimes among countries with heterogeneous economies are difficult to sustain, the paper notes that heterogeneity can be accommodated in regimes with one dominant member and diverse countries that enhance the flexibility of their labour and product markets and have flexible internal pricing systems. This opens up the question of what might work for African economies, which are heterogeneous and do not meet the optimal currency criteria. The paper examines the convergence performance of small current and past members of the Common Monetary Area (CMA) against the benchmark of South African provinces. The results confirm that a monetary union alone is no guarantee for good outcomes: Among the three small CMA members one (Namibia) is overperforming, one (Eswatini) is average and Lesotho is underperforming. The paper concludes with country-specific and CMA-wide policy recommendations for higher growth of the CMA member countries.

JEL Classification: F02, F45, O11

Keywords: asymmetric monetary union, flexibility, regional convergence, Africa

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I. Introduction

Successfully developing economies are over the long term usually characterized by a credible currency regime underpinning a stable financial system facilitating low cost transactions, encouraging savings and facilitating financing viable investment projects (Demirguc-Kunt & Levine, 2008). An independent and effective central bank (CB), efficient supervision and regulatory capacity, and a complementary sustainable fiscal policy are necessary ingredients for the monetary system to perform its role. While all this is a valid goal at all levels of development, sound macroeconomic framework conditions are particularly vital for small developing countries. Not only they are necessary for achieving macroeconomic stability, but they also support complementary, business friendly and rule-of-law oriented institution building.

Forming a monetary union (MU) is generally thought to foster a good policy environment, because it leverages the impact of appropriate policies. Following this line of thinking a deeper integration in Africa ²would facilitate more employment and higher growth (OECD, 2017). One aspect of this aspiration is to widen monetary and financial stability through forming an (MU) with an existing and credible currency. Especially for small currencies with high set-up costs this appears to be an attractive choice. There are several examples for such a constellation and also plans to establish MUs with a dominating currency:

- 1) The dollarization of Puerto Rico and the euroization of Montenegro, Kosovo and Bosnia-Herzegovina.
- 2) The eastern enlargement of the euro area with only small countries (Slovenia, Slovakia, Estonia, Latvia, Lithuania) entering while the bigger Czech Republic, Hungary and Poland retained monetary independence.
- 3) An informal fixed exchange rate arrangement covered Germany's Deutschmark, the Dutch Guilder and the Austrian Schilling after the breakdown of the Bretton Woods agreement.
- 4) The Common Monetary Area (CMA) of the South African Customs Union (SACU) comprising South Africa, Lesotho, Namibia and Swaziland. Botswana left the CMA³ but remains a member of SACU.
- 5) The Gulf Cooperation council member countries peg their currencies to the US Dollar and plan the introduction of a common currency, but have not yet achieved this ambition.
- 6) The Pacific Islands plan a currency union with Australia and New Zealand, but up to now these plans have not been realised, because Australia and New Zealand follow inflation targeting frameworks with independently floating exchange rates.

A common element of these examples is the relatively large difference in economic performance among members of a MU (Firgo and Huber, 2013 for the euro area). Heterogeneity among members of a MU reduces the benefits for new members to join

² Southern Africa covers the member countries of the Southern African Customs Union.

³ Botswana has an officially crawling peg regime, but in practice the amplitude of the crawl has been relatively limited.

(Nolan, 2001). In general, Africa is not considered to be an OCA (Bayoumi, 1997) and also more recent literature surveys are inconclusive about Africa forming an OCA (Asongu, 2017).

The main contribution of this paper is to explore to which extent macro-structural policy settings can contribute to reaping the benefits of an MU with one dominating member. Our main focus is on the CMA.

More specifically this paper explores how the loss of an independent monetary policy and the exchange rate adjustment channel can be mitigated by enhanced flexibility in other areas of policy making, including labour and product markets. This challenge is related to the changing mix of price and quantity adjustments to an adverse external shock under fixed or flexible exchange rates. In the case of flexible exchange rates this mix can include more price adjustments, which are more likely feasible with an unchanged economic structure. In the case of fixed exchange rates an adverse external shock will result in quantity adjustments in form of reallocating labour, adjusting the commodity structure and eventually bankruptcies on one side and start-ups as well as expanding firms on the other side. A MU will therefore require a policy setting, which facilitates quantitative adjustments to an adverse external shock.

Our contribution looks into the special case of Southern Africa, where relatively poorer, small economies co-exist with a bigger and richer neighbour. The CMA is such a case. This constellation is challenging, because it requires to master the fine balance between benefiting from a sound monetary policy of a credible CB accompanied by a credible currency, and the loss of an independent monetary policy instrument, without which a response to adverse external shocks becomes non-trivial. To put it differently, what this paper wants to explore is how macro-structural policies can make the most of “borrowed” monetary and financial stability and prepare CMA countries for future shocks.

The size difference between South Africa and other SACU member countries imposes an implicit asymmetry in the assignment of policies: The long term attractiveness of the Rand as an anchor currency for the CMA is determined by the sustainability of South African fiscal policies, which has been notably deteriorating in recent years. CMA member country policy settings among small countries will be relevant for each economy, but with few spillover effects to the other CMA/SACU member economies. The integration effects of the CMA will therefore mainly be determined by the extent to which the smaller members can make use of opportunities provided by South Africa.

The paper first presents stylized facts about performance as well as economic policies. The literature survey focuses on studies about whether optimal currency area conditions are met. Convergence analysis for South African provinces and the small CMA members plus Botswana is presented to provide as context for the assessment of the CMA as a “convergence club”, which is used as an indicator for the coherence of member country policies with the restrictions of a MU⁴. Policy priorities are then formulated on the basis of both empirical evidence and, where data is missing, theoretical considerations. The

⁴ In this way we can avoid to assess individual member country policies, which would go far beyond the scope of this paper.

concluding section provides arguments for the debate about whether giving up the exchange rate mechanism is beneficial for the CMA member countries⁵.

II. Stylized economic performance facts

Table 1 shows a few macroeconomic indicators for the CMA member countries plus Botswana. The first two columns provide the 1996 levels of gdp per capita in constant and current USD, the third column (IR) shows the investment rate, the fourth column is the cif-fob rate (as a measure for the cost of external trade), the fifth column is the average growth differential over South Africa between 1996 and 2017. The final column shows the ratio of exports and imports over gdp.

Table 1: Stylized real sector indicators

Country (2016)	GDP pc (1996), constant 2010 USD	gdppc_k (1996), current USD	IR, investment rate (2017/18)	Cif-fob ratio (1996)	Average real GDP Growth Difference with SA 1996- 2017
BWA	3022,18	4386,85	28.243	0,0533	1,7
ESW	1632,53	2881,08	12.702	0,0546	0,7
LSO	529,37	837,56	26.091	0,0463	1,5
NAM	2311,96	3620,89	16.243	0,0642	2,0
ZAF	3440,86	5657,33	18.806	0,0688	0

Source: WDI, IMF (IR)

The available empirical evidence⁶ shows that Botswana has done well while being formally outside the CMA, but officially inside SACU. Namibia is doing well as a member of CMA and SACU. Eswatini is developing like a South African province, while Lesotho is increasingly left behind. Its growth differential over South Africa is much too low to catch-up within meaningful time from its low initial condition.

The investment rate is high in Botswana and Lesotho. Given the low growth rate of Lesotho the optimal allocation of capital may be put into question. Eswatini has the lowest investment rate, corresponding to its low growth rate.

Table 2 provides information about the monetary-macro development. Inflation is relatively benign while the current account indicates some variation. Botswana achieved the lowest rate of inflation, pointing at real appreciation achieved via nominal appreciation rather than higher inflation. External debt can become a concern if it is related to public and private overconsumption (see below). The exchange rates are closely aligned, unsurprising for a currency union. Outside the CMA Botswana has used the exchange rate mechanism and allowed major swings in its exchange rate with a net-appreciation up to now.

⁵ Conditions for joining the European Union and eventually the euro area have been formulated in the so called "Copenhagen criteria", which require a functioning market economy and the ability to withstand the competitive pressures of a common market.

⁶ As presented in the IMF World Economic Outlook

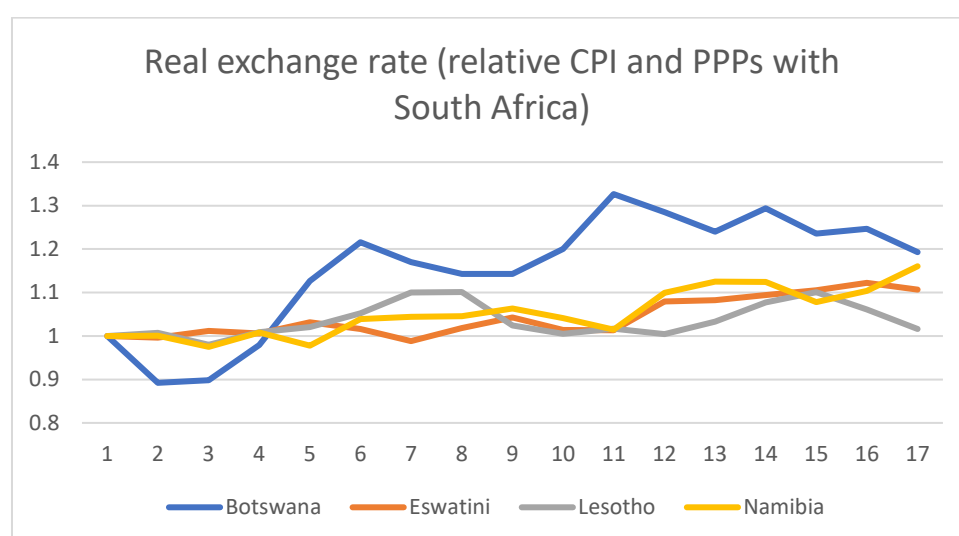
Table 2: Monetary and financial indicators

2018				
Country	CPI Inflation	CA in % of GDP	External debt in % of gdp	Exchange rate/Rand
BWA	3.296	5.338	8.3	0.772
ESW	6.221	6.950	16.0	1.073
LSO	4.459	-4.704	40.2	1.002
NAM	6.147	-5.046	57.7	1
ZAF	5.273	-2.541	47.4	1

Source: SACU

Figure 1 shows the real exchange rate developments for the CMA countries plus Botswana with respect to South Africa. The nominal exchange rate has been replaced by the implicit purchasing power parity.

Figure 1: Real exchange rate



Source: IMF World Economic Outlook Database [1=2002]

In addition to the large swings of Botswana' real exchange rate even the CMA member countries could achieve deviations from the parity with South Africa in the order of magnitude of up to nearly 20% (Namibia). Eswatini and Lesotho are more constrained with respect to internal revaluations, which rarely exceeded cumulatively 10 percentage points. This is due to both limited price and wage flexibility as well as the inability to achieve productivity increases in the face of adverse external shocks.

It is questionable whether the large real exchange rate swings of Botswana (about 40% appreciation between 2003 and 2012) could have been achieved without nominal exchange rate changes. Indeed, the Pula has appreciated against the Rand by more than 30% since its introduction in 1976. The strong economic performance of Botswana is a reminder about the importance of the exchange rate system choice.

In a nutshell we can conclude from the available evidence that CMA member countries exercise a diverse economic performance and that Botswana has done well outside the

CMA, using its exchange rate flexibility to protect its economy from external shocks and maintain relative price stability despite a booming economy.

Experiences of countries all over the world show that membership in a MU does not guarantee positive economic performance while at the same time staying outside a neighbouring MU can be beneficial. It has been documented that other – complementary – policy settings, and in particular credible fiscal policy, determine the benefit from belonging to a MU. The choice for a particular exchange rate system will also depend on preferences for achieving possibly conflicting policy objectives (Ngoc Nguyen et al, 2020).

III. Theoretical considerations and stylized policy facts

Fixed exchange rates within a MU reduce the risk premium on financing investment projects and implementing new technologies. Furthermore, the absence of a revaluation risk facilitates trade between members of a MU. However, with fixed exchange rates the response to an adverse external shock requires higher domestic wage/price flexibility and the ability to shift resources between sectors (Brixiova et al, 2010). More recently trade is occurring in tasks, so at least shift between tasks will require a high degree of structural flexibility. Innovation will facilitate structural change and resource reallocations, which will be necessary to cope with adverse external shocks hitting members of a MU.

The CMA is like a currency board with asymmetric legal tender arrangements. Will such a MU facilitate growth enhancing price and quantity adjustments?

The theoretical literature about MUs concludes that positive effects on sustainable economic development depend on meeting some variant of optimal currency area conditions. These include both macroeconomic as well as structural policy settings. For participation in a MU policies need to be prioritised. They include the following:

- Sustainable fiscal policy (defined as a constant debt to GDP ratio compatible with current spending and taxation patterns) , which avoids exploding government debt to GDP trajectories without requiring pro-cyclical tightening.
Following such a policy will allow governments to reap the MU dividend of lower risk premia on its debt because the exchange rate risk can be credibly removed. This will be more likely if servicing debt is a credible promise of government which will be easier if GDP growth is high relative to debt servicing costs and government spending is in line with revenue raising capacity.
A lower debt servicing burden for MU members will increase the fiscal room for the government, which can be wisely used for increasing spending on government services which benefit economic activity or reduce economically harmful taxation. Allowing automatic stabilisers to work freely will reduce the fiscal risk premium on economic activity and increase the supply of labour and capital as well as make risky innovation spending more attractive.

Table 3: Fiscal indicators

2017	GDP pc, PPP	Cpi Inflation	Unemployment rate	Revenue rate	Expenditure rate	Net lending	Debt rate
Botswana	15552	3.3		30.9	32.0	-1.0	13.4
Eswatini	9585	6.2		28.0	36.6	-8.6	27.4
Lesotho	3029	4.4		42.8	46.3	-3.4	37.1
Namibia	10237	6.1		30.9	35.6	-4.7	41.0
South Africa	12194	5.3	27.5	28.3	32.6	-2.5	53.0

Source: IMF, World Economic Outlook Database

While most SACU countries have revenue and spending rates around low to medium thirties in % of GDP it is Lesotho having a significantly higher share of government activity relative to GDP (Table 3). Considering its comparatively low growth rate raises the suspicion of crowding out private activity.

- Prudent financial sector regulation, which avoids accumulation of bad assets in “too big to fail” institutions.

In a monetary union (MU) the supply of loans for business and households – especially in smaller member countries - will most likely increase because of capital inflows. It is therefore important that debtors and creditors are fully aware of associated risks of increased indebtedness. This concerns lending institutions as well as individual debtors. Regulation needs to avoid the “too big to fail” trap, which could force the government into costly bail-out procedures. Households with a high rate of time preference need to be protected against picking up unaffordable loans.

Businesses need to be hindered to engage in investment projects with a weak business plan and low or no protection against materialising risks. Banks need to be made aware that they are to bear the consequences of their risk management.

A serious problem in all CMA countries is the widespread activity of loan sharks, who exploit the financial illiteracy of the poorest part of the population, predominantly benefit recipients. Local and cooperative solutions for basic financial services, which played a crucial role in 19th century Europe’s relatively rural neighbourhoods could provide inspirations about how to provide affordable and sound financial services for low-income customers as well as help micro-firms to grow (Ryder, 2002). This would help vulnerable groups to become more resilient, because access to financial services will help reducing barriers to participation in formal economic activities.

- Business friendly product market regulation, which includes eliminating entry barriers, striking the right balance between creditor and debtor rights in insolvency cases and the protection of intellectual property rights.

Product market regulation is a very complex task and its relation with economic performance is far from obvious and clear. Nevertheless, it is instructive to check various indicators in the field and check whether they tell a story with respect to the rather diverse performance among the economies under consideration.

Table 4 provides the ranks for the overall doing business indicator and selected sub-indicators. In general, this indicator reveals considerable room for improvement across all aspects of product market regulation in all CMA member countries and

Botswana. The best performance can be observed for “Trading across borders”, most likely because of trade facilitating border procedures among SACU member countries. The exceptions are South Africa and Namibia, which may be due to cumbersome procedures when trading outside SACU. The unfavourable assessment of South Africa’s external trade procedures does not provide for a gateway for the smaller SACU members to export outside South Africa.

Table 4: World Bank Doing Business Ranks 2019

	Ease of Doing Business	Starting a Business	Getting Credit	Trading across Borders	Enforcing Contracts	Resolving Insolvency
South Africa	84	139	80	145	102	68
Eswatini	121	155	94	35	172	117
Lesotho	122	84	94	40	99	126
Namibia	104	165	80	138	64	127
Botswana	87	159	80	55	137	84

Source: World Bank Group (2020), Doing Business 2020, World Bank Publications

The overall indicator is in line with the relative performance of SACU member countries as found by the convergence analysis below. The overall indicator for the Ease of Doing Business is most favourable for South Africa and Botswana. Lesotho and Eswatini perform worst and Namibia is just in the middle.

- Employment friendly labour market regulation, which helps maintaining full employment on a sustainable basis.

Labour market outcomes among SACU countries are generally not satisfactory.

Unemployment and inactivity are widespread, inequality is high and the gender gap is considerable.

A negative aspect to consider in general concerns the role of South Africa as the regional economic leader. CMA and SACU incentivize small SACU countries to trade more with South Africa than they would do otherwise. Given the lacklustre SA growth record and prospects, this may impede growth in small SACU/CMA countries as well. Cumbersome procedures and transport infrastructure bottlenecks may also hinder more overseas trade.

IV. Survey of empirical literature

Especially for small countries the set-up costs for their independent currency may become quite large. It is therefore tempting to “import” low inflation by fixing the exchange rate to a stable currency, like in the case of the Baltic Republics after the breakdown of the Soviet Union (de Haan et al, 2001). Even in the case of replacing an already existing, credible CB, the establishment of a new CB for a newly established currency union can become prohibitive (Tavlas, 2008 for a currency union in Southern Africa).

The CMA case is intriguing, because it works through expanding the existing (credible) currency area while introducing local currencies. Optimal currency area (OCA) conditions are found to be met among CMA member countries (Jenkins and Thomas, 1997). A welfare analysis, based on the higher credibility of policy coordination in an MU, finds the CMA to be

beneficial for all its members (Debrun and Masson, 2013). CMA countries also experience a high degree of price flexibility (Matsaseng, 2008). Extending a MU to individual SADC countries would be mostly beneficial for new members, although extra benefits for current CMA members are found to be small (Debrun and Masson, 2013).

Establishing a currency union in the much bigger SADC does not gain unanimous support among economists (Jenkins and Thomas, 1997; Agbeyegbe, 2008; Tavlas, 2009; Zerihun et al, 2014). There is no common business cycle for the SADC area as a whole, however the CMA appears to be fit for forming an MU with selected enlargement by Mozambique and Zambia (Nzimande and Ngalawa, 2016; Buigut and Valev, 2005). Even if cointegration analysis confirms generalised purchasing power parity and real exchange rates of SADC member countries are found to be stationary (with the exception of Angola and Mauritius), the speed of adjustment is too slow to avoid long lasting macroeconomic imbalances after joining a MU (Zerihun et al, 2015). For establishing an MU in SADC macroeconomic convergence would need to be considered as a permanent goal rather than a precondition (Rossouw, 2006). However, price flexibility in CMA member countries is significantly higher than in other SADC member countries, with the exception of Botswana (Matšaseng, 2008). Therefore, CMA appear to have an extra degree of price flexibility, which cushions adverse external shocks despite a fixed exchange rate.

The existing MUs in Western Africa have been shaped by their colonial history and appear less effective in comparison with groupings established on the basis of a cluster analysis (Benassy-Quere and Coupet, 2005). The peg to the euro does not correspond to the rising importance of China as a trading partner and investor in the region (Quah, 2016). However, it is also frequently noted that a MU is an eminent political decision (Theurl, 1992). Furthermore, MUs add more value to regional trade agreements (Carrere, 2002). In the absence of such framework the benefits from a MU appear to be quite small and could also be substituted in other ways (Debrun et al, 2011).

Lowering barriers to trade is an important transmission effect (Ncube et al, 2014). In addition, business cycle synchronisation is an important prerequisite for a successfully working MU (Mafusire and Brixiova, 2012 for the East African Economic Union). The extent to which benefits of joining a currency union can actually be reaped goes beyond the conditions of forming an optimal currency area (Grandes, 2003) or depends on the degree to which the OCA criteria are met (Jefferis, 2007). The potential costs of joining an incompatible OCA can be large as the current challenges of peripheral euro countries illustrate (see also Khamfula, 2004). For Italy, for instance, the possibility to adjust the exchange rate was an essential policy tool before joining the euro area. Without this possibility the real exchange rate appreciated and constrained the recovery from the global financial crisis in 2008/9.

On the other side, complementing the MU with prudent fiscal policies and growth enhancing structural policies could reinforce the benefits from the CMA (Wang et al, 2006). Especially in the case of a sub-optimal currency area the implementation of joint and coordinated policies could help to come closer to achieving OCA criteria (Dutu and Sparks, 2004). Implementing flexible labour market regulation and reducing entry barriers for new or expanding suppliers would facilitate the necessary reallocation of capital and help workers

finding new or better jobs after the economy has been hit by an adverse external shock (Brixiova et al, 2010).

Business cycle synchronisation is more likely in MUs (Campos et al, 2019). However, structural similarity and intra-industry trade seem to be more powerful determinants than the mere participation in a MU (Beck, 2019). This is a reminder that reaping the benefits of a MU depends on putting the right policies in place.

A broad conclusion of the literature about the impact of MUs is that membership alone will not generate the hoped-for positive effects or establish the necessary harmonisation of policies. However, quite diverse economies can still benefit from a MU, provided the right policy framework is in place. A frequently cited case is the successful performance of Austria under a fixed exchange rate arrangement with the (then) Deutschmark (Hochreiter and Winckler, 1995). The authors conclude that *“Austria may therefore be viewed as an example for a fixed exchange rate system, at least between smaller countries and an anchor country, even if OCA criteria (initially) are not being met.”*

V. Regional convergence analysis

Existing studies for the CMA look at OCA criteria in various forms, like business cycle synchronisation, structural similarity, correlation of adverse external shocks or price flexibility. Also, macroeconomic convergence analysis for the SADC area is available. However, no attempt has yet been made to put convergence in the CMA in the context of growth performance in South African provinces. This approach makes sense not only from the point of view of the more comparable size, but also because the South African economy itself is not homogenous.

This section provides an unconditional convergence analysis for CMA member countries, Botswana and South African provinces (13 observations). Nominal GDP per capita is converted in Rand and divided by the South African GDP per capita. This procedure is chosen because deflators for different countries are not comparable in absolute terms. As a consequence, this convergence analysis does not distinguish between price and quantity convergence. Average growth is chosen, because convergence is a medium to long term process. Using annual observations would have included cyclical variance, which is not relevant for convergence. An additional disturbance of annual observations would have been introduced by the volatility world market prices, which are important determinants of export revenues and GDP. A possibly better fit has to be qualified by an increase of spurious correlation.

The observation period is 1996 to 2017, the observation unit is the country. Botswana is included as a benchmark case.

$$g_T = a + by_0 + \varepsilon \quad \varepsilon \approx N(0, \sigma^2) \quad , \quad (1)$$

g_T ... average growth of the ratio of nominal gdp per capita over South Africa between the initial period 0 (1996) and the final period T (2017)

y_0 ... ratio of gdp per capita over South Africa in the initial period (1996)

ε ... error in the equations, assumed to be normally distributed with mean 0 and variance σ^2

Table 5: Regression statistics for the convergence equation with SA provinces, CMA and Botswana

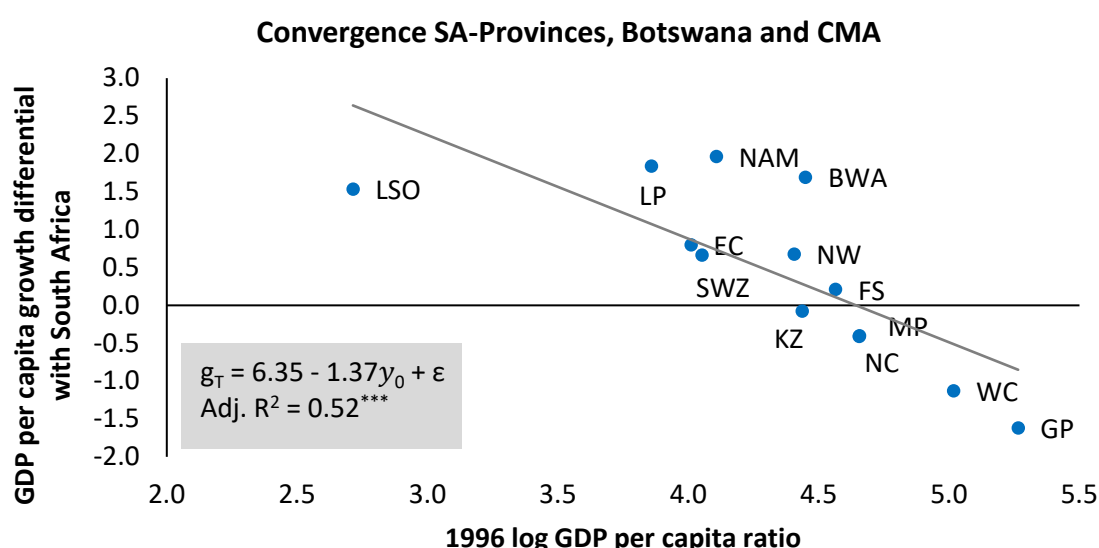
Regression Statistics		R Square	Adjusted R ²	Standard E.	Obs.	
		0,560	0,520	0,793	13	
ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	8,811	8,811	14,010	0,003	
Residual	11	6,918	0,628			
Total	12	15,729				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	6,35	1,595	3,982	0,002	2,841	9,863
Ln y(1996)	-1,37	0,365	-3,743	0,003	-2,172	-0,563

Source: Own calculations with nominal gdp from the SARB database

The convergence equation for all provinces, CMA and Botswana generates the expected negative, significant coefficient b (Table 5). However, with -1,37 it is comparatively low and the adjusted R² is only 0,52.

Figure 2 below plots the 1996-2017 average GDP per capita growth differential of South African provinces and CMA member countries against South Africa. A visual inspection reveals that the high growth performers are either below (Lesotho) or above (Namibia and Botswana) the simple, unconditional convergence regression line. Only Eswatini performs like a South African province.

Figure 2: Regional convergence in the CMA, South African provinces and Botswana



Source: SARB database, own calculations

Restricting the convergence regression only to South African provinces generates a much higher convergence coefficient b (-2,29) and the adjusted R² indicates a very good fit to observed growth differentials.

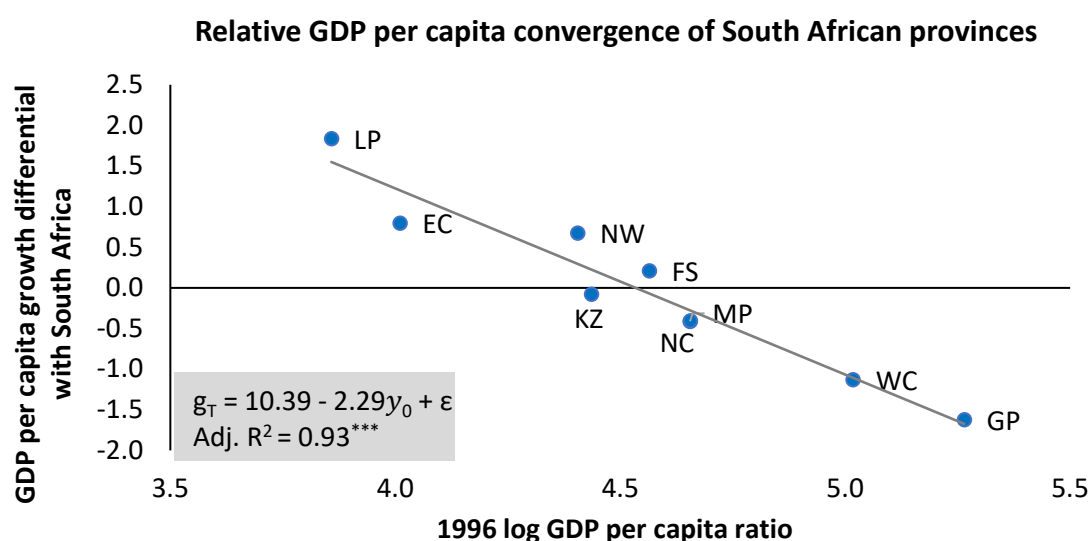
Table 6: Regression statistics for the convergence equation with SA provinces

ANOVA	R Square	Adjusted R ²	Standard E.	Obs.		
	0,932203	0,922518	0,291213	9		
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	8,162	8,162	96,249	0,00002	
Residual	7	0,593	0,084			
Total	8	8,756				
	<i>Standard</i>					
	<i>Coefficients</i>	<i>Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	10,387	1,064	9,755	0,00002	7,869	12,905
Ln y(1996)	-2,290	0,233	-9,810	0,00002	-2,843	-1,738

Source: Own calculations with nominal gdp from the SARB database

Looking at South African provinces alone, relative GDP per capita growth in South African provinces develops close to the unconditional convergence line. This means that South Africa has a regulatory environment, which facilitates regional convergence.

Figure 3: Regional convergence of South African provinces



Source: SARB database, own calculations

The unconditional convergence regressions indicate that South African provinces form a convergence club, achieving homogeneity in terms of their overall economic performance. CMA countries on the other hand are heterogenous:

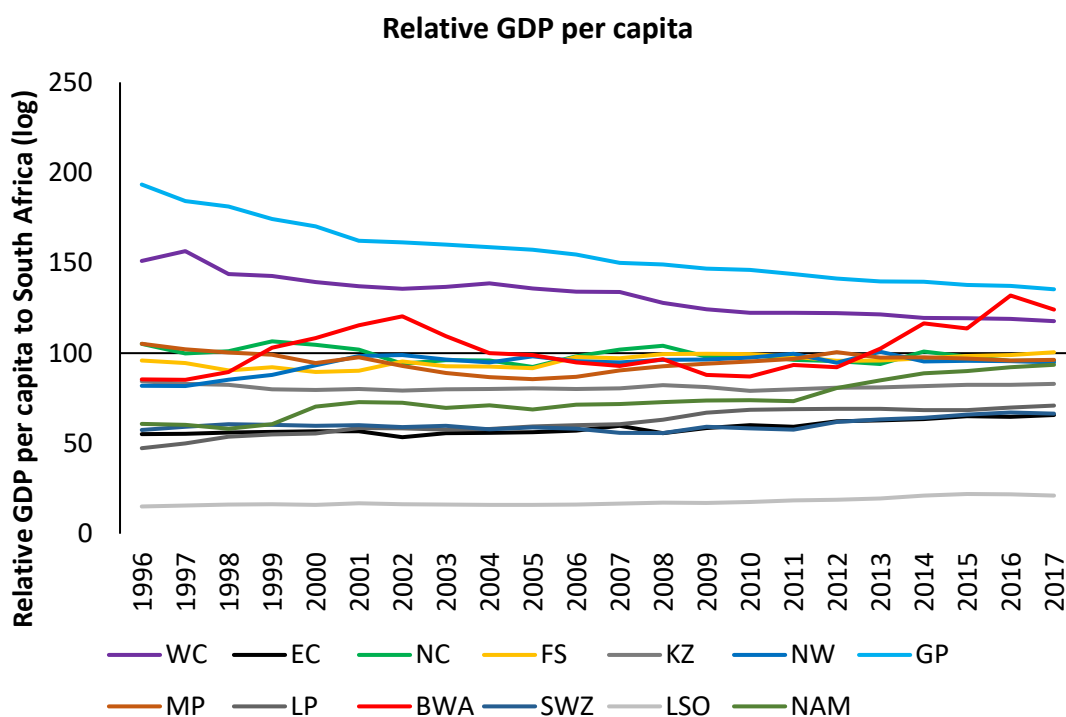
- Lesotho, the poorest entity in our sample achieves only very slow economic convergence. In the 20 years between 1996 and 2017 its economy has only achieved to catch up from 15% to 21% of the South African GDP per capita. The growth differential of Lesotho over the South African average growth rate (1,8%) is less than half of what it should be if the convergence regression for South African provinces is used as the benchmark (4,2%).

This underperformance could have something to do with significant differences in pricing behaviour (Nchake et al, 2015) and the associated missing signals to re-allocate resources.

- Eswatini, starting in 1996 with a lead of 42 percentage points over Lesotho could even expand this difference to 45 percentage points in 2017. Compared with the convergence equation for South African provinces the difference is small (0,7% relative to 1%).
- Namibia, starting in 1996 on a similar GDP per capita level as Eswatini managed to catch up close to the South African GDP per capital level, reaching 94 percentage points in 2017. This was due to a three times higher growth differential during the observation period 1996 to 2017 (2.0 over 0.7). Its growth differential of 2% is twice of what would be the outcome of the convergence equation for South African provinces.
- Botswana, while not being directly a CMA member, is the only entity achieving full convergence with the South African GDP per capita. According to the convergence equation for South African provinces its actual growth rate is about a percentage point higher. However, the high volatility of its GDP per capita reveals the dependence on international price developments and the need for economic diversification, besides independent monetary policy.

Figure 4 shows the development of GDP per capita in current Rand relative to South Africa as a whole for the South African Provinces, the CMY member countries and Botswana.

Figure 4: GDP per capita ratio over South Africa, 1996-2017



Source: Source: SARB database, own calculations

The convergence analysis suggests three directions of policy reforms:

1. The positive performance of Botswana and Namibia relative to South African provinces suggest that South African Provinces and Eswatini could do better and should aim for higher per capita gdp growth rates. Better framework conditions for international trade could play a crucial role in this respect.
2. The good fit of the regional convergence model for South African provinces means that regional growth differentials are linked to initial conditions in a “good” way: Provinces with a relatively lower initial economic activity achieve higher economic growth rates. A growth-enhancing economic policy package should therefore prioritise countrywide areas, like education, innovation, removing entry barriers, avoiding inactivity and poverty traps, access to finance for SMEs among others.
3. Lesotho is a case for regional policy initiatives. Increasing labour force participation, improving framework conditions, better connection to transport infrastructure are a few examples.

VI. Conclusions

As noted in the literature and confirmed by stylized facts, the economic performance of CMA member countries and Botswana is very heterogenous. This requires even greater flexibility in other policy areas to compensate for the missing opportunity to absorb shocks with exchange rate realignment. The successful performance of Botswana shows that maintaining exchange rate flexibility can be an advantage. On the other hand, Namibia has combined strong growth with reaping the benefits of a MU. The relatively strong convergence of South African provinces demonstrates the ability of lagging economic areas to catch up within the country’s current regulatory framework . In this respect Eswatini is akin to South African province while Lesotho’s ability to benefit from the membership in CMA is limited.

Successful participation in a MU requires wage flexibility, labour and capital mobility across countries as well as similar exposure to external shocks (Jenkins and Thomas, 1997). Policy settings, like sustainable fiscal policies, flexible labour markets and trade openness, strengthen local currencies and could prepare for establishing a sustainable MU (Hochreiter et al, 2002). If OCA criteria are not met, the need for policy coordination rises (Chankuluba and Chepete, 2014).

Policy requirements are by and large shaped by two considerations: First, the missing nominal exchange rate adjustment mechanism in a MU means that external shocks will need greater absorption capacities, for instance in form of reserve funds. Second, the positive impact of a MU is conditional on policy settings, which facilitate turning the deeper financial markets in a MU into productive investments.

This means that countries participating in a voluntary MU need to pay attention to the following policy areas, depending on their particular growth constraints:

- The ability to run sustainable fiscal policy with cyclical buffers (i.e. running a counter-cyclical fiscal policy) in order to smooth the impact of adverse external shocks. As Botswana’s positive experience illustrates, this applies especially to commodity exporters.

- Achieving financial sector stability with a priority for income generating financing instead of advancing consumption. Introducing a credible no-bailout clause in order to avoid the accumulation of balance sheet imbalances.
- Focusing wage setting on external competitiveness to maintain real exchange rate flexibility even without the opportunity to adjust the nominal exchange rate. This is particularly challenging in countries with strong labor unions, as examples of South Africa and Eswatini show.
- Providing market access, fostering productivity growth, entrepreneurship and innovation through business-friendly regulation in order to strengthen trend growth and the benefits from MU.
- Establishing labour market regulation which combines enough flexibility to re-employ job-seekers while maintaining enough tenure to provide incentives for on-the-job training in order to strengthen the ability to reallocate and retrain labour inputs.
- Large share of informal cross-border trade in the region points to potential for productivity gains from expanding formal trade, which can be supported by removing barriers to trade, including infrastructure bottlenecks.

Next steps for extensions of this paper could be to identify or re-assess the most important road-blocks for higher growth in South Africa and to identify priority policy areas in the smaller CMA member countries to benefit more from the participation in a wider and deeper monetary area. Upgrading the infrastructure for foreign trade (transport, finance and regulations) has the potential for positive effects along both challenges.

References

- Agdeyegbe, Terence D, (2009). On the Feasibility of a Monetary Union in the Southern Africa Development Community, *International Journal of Finance and Economics*, volume 13, issue 2, p. 150 - 157
- Alexoaei Alina Petronela & Robu Raluca Georgiana, 2018. "A theoretical review on the structural convergence issue and the relation to economic development in integration areas," Proceedings of the International Conference on Business Excellence, Sciendo, vol. 12(1), pages 34-44, May.
- Asongu, Simplice & Jacinta Nwachukwu & Vanessa Tchamyou, 2017. "A Literature Survey On Proposed African Monetary Unions," *Journal of Economic Surveys*, Wiley Blackwell, vol. 31(3), pages 878-902, July.
- Bayoumi, Tamim and Ostry, Jonathan D. 1997. "Macroeconomic Shocks and Trade Flows within Sub-Saharan Africa: Implications for Optimum Currency Arrangements". *Journal of African Economies*, 6, no. 3, pp. 412-44.
- Beck, Krzysztof 2019. What drives business cycle synchronization? BMA results from the European Union, *Baltic Journal of Economics*, 19:2, 248-275
- Bénassy-Quéré, Agnès and Maylis Coupet, 2005. "On the Adequacy of Monetary Arrangements in Sub-Saharan Africa," *The World Economy*, Wiley Blackwell, vol. 28(3), pages 349-373, March.
- Beetsma, Roel, and Massimo Giuliodori. 2010. "The Macroeconomic Costs and Benefits of the EMU and Other Monetary Unions: An Overview of Recent Research." *Journal of Economic Literature*, 48 (3): 603-41.
- Brixiova, Zuzana & Margaret H. Morgan & Andreas Wörgötter, 2010. "On The Road to Euro: How Synchronized Is Estonia with the Euro zone?," *European Journal of Comparative Economics*, Cattaneo University (LIUC), vol. 7(1), pages 203-227, June.
- Buigut, S.K. and Valev, N.T., 2005. Is the proposed East African monetary union an optimal currency area? A structural vector autoregression analysis. *World Development*, 33(12), pp.2119-2133.
- Campos, Nauro F., Fidrmuc, Jarko, Korhonen, Iikka, 2019. "Business cycle synchronisation and currency unions: A review of the econometric evidence using meta-analysis", *International Review of Financial Analysis*, 61, pp. 274-283.
- Carrere, Céline. African Regional Agreements: Impact on Trade with or without Currency Unions. *Journal of African Economies*, 2004, vol. 13, no. 2, p. 199-239
- T. L. Chankuluba and C. Chepete, 2014. Coordination of Macroeconomic Policies in the Southern African Development Community Region, The Research Bulletin, Volume 27(1), Monetary and Financial Stability Department, Bank of Botswana, July.
- Cole, Harold L. & Ohanian, Lee E. & Riascos, Alvaro & Schmitz, James Jr, 2005. "Latin America in the rearview mirror," *Journal of Monetary Economics*, Elsevier, vol. 52(1), pages 69-107, January.
- Debrun, Xavier & Paul R. Masson & Catherine Pattillo, 2011. "Should African Monetary Unions Be Expanded? An Empirical Investigation of the Scope for Monetary Integration in Sub-Saharan Africa-super- †," *Journal of African Economies*, Centre for the Study of African Economies (CSAE), vol. 20(suppl_2), pages -150, May.

Xavier Debrun & Paul R. Masson, 2013. "Modelling Monetary Union in Southern Africa: Welfare Evaluation for the CMA and SADC," *South African Journal of Economics*, Economic Society of South Africa, vol. 81(2), pages 275-291, June.

de Haan, Jakob; Berger, Helge; van Fraassen, Erik, 2001. How to Reduce Inflation: An Independent Central Bank or A Currency Board? The Experience of the Baltic Countries, LICOS Discussion Paper, No. 96, LICOS, Leuven

Demirguc-Kunt, Asli & Levine, Ross, 2008. "Finance, financial sector policies, and long-run growth," Policy Research Working Paper Series 4469, The World Bank.

Dutu, Richard and Donald L. Sparks, 2004. "The Future of Monetary Integration in southern Africa: Lessons from the European Union?" *The Journal of African Policy Studies*, Vol 10(1), 19-53.

Firgo, Matthias & Peter Huber, 2013. "Unconditional Convergence in Currency Unions: An analysis of European regions from 1991 to 2009," WWWforEurope Policy Paper series 4, WWWforEurope

Grandes, Martin, 2003. "Macroeconomic Convergence in Southern Africa: The Rand Zone Experience," OECD Development Centre Working Papers 231, OECD Publishing.

Hochreiter, Eduard & Winckler, Georg, 1995. "The advantages of tying Austria's hands: The success of the hard currency strategy," *European Journal of Political Economy*, Elsevier, vol. 11(1), pages 83-111, March.

Jayaraman, T.K. & Choong, Chee-Keong, 2009. "A Single Currency for Pacific Island Countries: a Revisit," *Journal of Economic Integration*, Center for Economic Integration, Sejong University, vol. 24, pages 321-342

Jefferis, Keith R. (2007) The Process of Monetary Integration in the SADC Region, *Journal of Southern African Studies*, 33:1, 83-106, DOI: 10.1080/03057070601136590

Jenkins, Carolyn & Lynne Thomas, 1997. "Is Southern Africa ready for regional monetary integration?," CSAE Working Paper Series 1997-03, Centre for the Study of African Economies, University of Oxford.

Khamfula, Yohane & Huizinga, Harry, 2004. "The Southern African Development Community: suitable for a monetary union?," *Journal of Development Economics*, Elsevier, vol. 73(2), pages 699-714, April

Khamfula, Y., & Mensteab T., (2004). "South Africa and Southern African Monetary Union: A Critical Review of Sources of Costs and Benefits," *South African Journal of Economics*, 72(1), pp. 37-49.

Mafusire, Albert & Zuzana Brixiova, 2012. "Macroeconomic Shock Synchronization in the East African Community," William Davidson Institute Working Papers Series wp1031, William Davidson Institute at the University of Michigan.

Matšaseng, Kopano, 2008. "Price Flexibility In The Common Monetary Area," *South African Journal of Economics*, Economic Society of South Africa, vol. 76(2), pages 176-188, June.

Nchake, Mamello Amelia & Lawrence Edwards & Neil Rankin, 2015. "Price-Setting Behaviour in Lesotho: Stylised Facts from Consumer Retail Prices", *South African Journal of Economics*, Economic Society of South Africa, vol. 83(2), pages 199-219, June

Ncube, Mthuli & Zuzana Brixiova & Meng Qingwei, 2014. "Can Intra-Regional Trade Act as a Global Shock Absorber in Africa?," Working Paper Series 2104, African Development Bank, Published in World Economics, 2015, vol. 16(3), pages 141-162.

Ngoc Nguyen, Charles Harvie & Sandy Suardi (2020) ASEAN income gap and the optimal exchange Rate Regime, *Applied Economics*, 52:3, 288-304, DOI: 10.1080/00036846.2019.1645278.

Nolan, Charles, 2002. "Monetary Stabilisation Policy in a Monetary Union: Some Simple Analytics," *Scottish Journal of Political Economy*, Scottish Economic Society, vol. 49(2), pages 196-215, May.

Nzimande, Ntokozi Patrick and Harold Ngalawa, 2016. "Is There a SADC Business Cycle? Evidence from a Dynamic Factor Model," Working Papers 651, Economic Research Southern Africa.

OECD (2017), OECD Economic Surveys: South Africa 2017, OECD Publishing, Paris. http://dx.doi.org/10.1787/eco_surveys-zaf-2017-en

Quah, Chee-Heong, 2016. "A Diagnostic on the West African Monetary Union, *South African Journal of Economics*, Economic Society of South Africa, vol. 84(1), pages 129-148, March.

Rossouw, Jannie, 2006. "An Analysis Of Macro-Economic Convergence In Sadc1, *South African Journal of Economics*, Economic Society of South Africa, vol. 74(3), pages 382-390, September.

Ryder, Nicholas (2002) Credit unions and financial exclusion – the odd couple?, *Journal of Social Welfare and Family Law*, 24:4, 423-434.

Saiki, Ayako, 2005. "Asymmetric Effect of Currency Union for Developing Countries," *Open Economies Review*, Springer, vol. 16(3), pages 227

George S. Tavlas, 2008. "The Benefits and Costs of Monetary Union in Southern Africa: A Critical Survey of the Literature," Working Papers 70, Bank of Greece.

George S. Tavlas, 2009. "The Benefits And Costs Of Monetary Union In Southern Africa: A Critical Survey Of The Literature," *Journal of Economic Surveys*, Wiley Blackwell, vol. 23(1), pages 1-43, February.

Theurl, Th. (1992), *Eine gemeinsame Währung für Europa: 12 Lehren aus der Geschichte* (A common currency for Europe: 12 lessons from history). Geschichte und Ökonomie, Band 1, Innsbruck.

Wang Jian-Ye, Masha Iyabo, Shirono Kazuko, and Harris Leighton. 2006. "The Common Monetary Area in Southern Africa: Shocks, Adjustment, and Policy Challenges." IMF Working Paper, no. 07/158.

Zerihun, Mulatu F., Marthinus C. Breitenbach and Francis Kemegue, 2014. "Nonlinear Econometric Approaches in Testing PPP of SADC Economies towards Monetary Union," Working Papers 420, Economic Research Southern Africa.

Zerihun, Mulatu F, Marthinus C Breitenbach and Francis Kemegue, 2015. "Assessment of Monetary Union in SADC: Evidence from Cointegration and Panel Unit Root Tests," Working Papers 495, Economic Research Southern Africa.