

Rethinking Regional Integration in Africa

AERC Senior Policy Seminar XX
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Seminar Papers

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Abbreviations

AERC	African Economic Research Consortium
AfDB	African Development Bank
CSAE	Centre for Study of African Economies
BOM	Bank of Mozambique
DPR	Department of Petroleum Resources
DRC	Democratic Republic of Congo
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IMF	International Monetary Fund
MDGs	Millennium Development Goals
NEPAD	New Partnership for Africa's Development
NEITI	Nigerian Extractive Industries Transparency Initiative
NNPC	Nigerian National Petroleum Corporation
OECD	Organization for Economic Co-operation and Development
PPT	Petroleum Profits Tax
NRFs	Natural Resource Funds
SEZs	Special Economic Zones
SWFs	Sovereign Wealth Funds
SPS	Senior Policy Seminar
SSA	Sub-Saharan Africa
UN	United Nations
UNECA	United Nations Economic Commission for Africa
ZCCM	Zambia Consolidated Copper Mines

Preface

Most African countries are embracing regional integration as an important component of their development strategies, primarily driven by the economic rationale of overcoming the constraint of small and fractioned economies working in isolation. Deepening regional integration in Africa is critical to maintaining economic competitiveness. Most assessment of the progress in regional integration in the continent has focused on market integration associated with trade in goods. Indeed, many African markets are moving towards integration. Yet, regional integration, in its broadest terms, including goods, labour, and finance, is an important pathway for economic transformation and diversity. Recognizing that a deeper integration agenda that includes services, investment, competition policy and other behind-the-border issues are important for integration in Africa, this volume presents the papers that were shared during the twentieth AERC senior policy seminar.

African Economic Research Consortium (AERC) is immensely grateful to the Government of Uganda for welcoming us to the country and the Rt Hon. Dr Ruhakana Rugunda, Prime Minister, Republic of Uganda, who graced the occasion as the Chief Guest at the opening of the Plenary. Gratitude is also due to the Bank of Uganda and Prof. Emmanuel Tumusiime-Mutebile, Governor, Bank of Uganda, who made the opening remarks, and for co-hosting Senior Policy Seminar XX.

We thank the authors Dr Bruce Byiers of European Centre for Development Policy, the Netherlands, for his paper titled “The Political Economy of Regional Industrialization Policies;” Dr Chuku Chuku, University of Uyo, Nigeria, who presented a paper on “Greasing the Wheels of Regional Integration: Infrastructure as a Catalyst for Trade, Innovation and Growth;” Prof Bernard Hoekman, European University Institute, with a paper on “Integrating African Services Markets;” and Prof Christopher Adam, Oxford Department of International Development, UK, whose paper focused on “The Fiscal Foundations for Deeper Regional Integration”. The authors produced high-quality papers. We appreciate the participants for their active participation in producing the seminar’s policy recommendations that were shared with other African policy makers who did not find time to take part in this event.

More thanks to Dr Witness Simbanegavi, AERC Research Director, and Dr Innocent Matshe, Director of Training, for their valuable input into the preparation and implementation of the seminar. Similarly, AERC appreciates the hard work of Sandra Coyle, Chief Communications Officer; Dr Charles Owino, Manager, Publications; Juffali Kenzi, ICT Manager; and Edith Mutui, Communications and Publications Assistant, in organizing the event. AERC also acknowledges with thanks Dr Wilson Wasike, Collaborative Research Manager for his role as rapporteur as well as Catherine Chang’oli, Sheila Lyaga and Nancy Muriuki who assisted with logistics. To these and the many others who were involved, AERC extends its heartfelt gratitude.

Prof. Lemma Senbet
Executive Director
African Economic Research Consortium

One

The political economy of regional industrialization policies

Bruce Byiers, Karim Karaki, Sean Woolfrey

Introduction

Industrial policy is making a comeback as a priority across Africa as governments seek to promote the creation of more and better jobs to address poverty and persistent unemployment. This revival is influenced by several factors: (i) the end of the commodity super-cycle, which has underlined the need for economic diversification and transformation; (ii) demographic growth that vastly outpaces and therefore raises the need for job creation; and (iii) frustration with "Washington Consensus" policies that focused on getting prices right and largely ignored — or even vilified — the use of industrial policies to promote economic transformation.¹ As cited by the UN Economic Commission for Africa (UNECA, 2016):

“What largely explains why GDP per capita growth has been so low compared to those of the developing countries in East Asia and why employment generation and poverty reduction have been far slower than in other developing regions is Africa’s negligible manufacturing base (see Szirmai and Verspagen, 2011; Noman and Stiglitz, 2011; and ECA, 2015).”

This refocus on industrial policy is not only happening nationally, but also at a regional level. Most African Regional Economic Communities (RECs) have adopted some form of regional industrialization policy or strategy, or are in the process of doing so, while the African Union launched the Accelerated Industrial Development for Africa (AIDA) initiative in 2008.² However, despite an apparent common interest in supporting industrialization at the regional level, the strategies adopted by Africa’s RECs to promote industrialization vary widely and face multiple challenges.

This policy brief discusses these regional industrialization policies and strategies, drawing on political economy analyses of the industrialization strategies of COMESA, the EAC, ECOWAS and SADC.³ It aims to answer the following questions:

- What do the regional industrialization strategies aim to achieve i.e. what is the value they seek to add in relation to national processes?
- How do political economy dynamics within and between countries shape regional strategies and implementation in practice in the focus regions?
- What are the implications for policymakers and international partners in supporting such strategies?

Overall, this policy brief aims to highlight the political economy dynamics within and between countries that policymakers and international partners must take account of when promoting, implementing and/or supporting regional industrialization policies and strategies. In doing so, it identifies relevant lessons from across Africa's regions and points to areas for additional research.

Regional industrialization strategies - why now?

Industrial policy on the rise

Cooperation on industrialization has long been central to political and economic integration policy processes in Africa. The 1980 Lagos Plan of Action was explicit about an "urgent need to implement a plan for the collective industrialization of Africa". It called for African states to "give a major role to industrialization in their development plans", and for regional industrial cooperation and harmonization of industrial activities to support national efforts to industrialize. The Lagos Plan envisaged, among other activities, the preparation of regional plans for the creation of major industrial complexes, and the creation of regional institutions to support industrialization. In a similar vein, the 1991 Abuja Treaty Establishing the African Economic Community called for African states to harmonise their industrial policies and adopt a common policy on industry. It also provided for joint industrial development projects at the regional level and for African states to prepare regional plans for establishing cross-border industries. This reflected ambitions for industrial planning, with a notably ideological focus on "collective industrialization".

Regional cooperation on industrial development was also foreseen by the foundational documents of Africa's regional economic communities (RECs), though the language is somewhat softer: the treaty of Lagos (1975), establishing the ECOWAS, explicitly aims at the "harmonization of economic and industrial policies of the member states". The 1993 Treaty Establishing the Common Market for Eastern and Southern Africa (COMESA) calls for COMESA member states to "cooperate in the field of industrial development" and provides for the formulation of a regional industrialization strategy, among other cooperation agendas. In 1999, the East African Community (EAC) Treaty similarly cited strengthened industrial relations as an objective of the EAC, and mandates EAC member states to "develop an East African Industrial Development Strategy". The Southern African Development Community (SADC) Treaty also cites "industrialization of the region" as an objective, and calls on member states to cooperate in the area of industry. Though not explicitly mentioned in the SADC Treaty, the SADC Protocol on Trade (2000) calls for an industrialization strategy to accompany implementation of the SADC Free Trade Area. The SADC Regional Indicative Strategic Development Plan (RISDP), adopted in 2003, also calls on SADC member states to develop a regional industrial development policy and strategy framework.

Recently, these objectives have been translated into regional industrialization policies and strategies. ECOWAS launched the West Africa Common Industrial Policy in 2010, later updated in 2015. In 2011, the EAC Summit approved the EAC Industrialization Policy 2012-2032 and the associated EAC Industrialization Strategy 2012-2032. In 2013, the SADC Council of Ministers approved the SADC Industrial Development Policy Framework, and later the SADC Industrialization Strategy and Roadmap 2015-2063 and an Action Plan for the SADC Industrialization Strategy and Roadmap. COMESA member states, meanwhile, have adopted the COMESA Industrialization Policy 2015-2030 and the COMESA Regional Industrial Strategy 2017-2026. The growing prominence of industrialization on regional agendas is also reflected in the themes of recent REC Summits, which have focused heavily on promoting regional industrialization.⁴

As all this suggests, the idea of regional cooperation on industrialization is not a new one for African countries, although meeting the objectives of such cooperation has been a challenge, not least with ideological trends aligning against industrial policy from the 1980s to the early 2000s. The recent flurry of regional industrial policies and strategies rather suggest that a range of external and national-level factors have aligned to generate renewed interest in designing regional approaches to industrialization in Africa.⁵

National imperatives

One key driver of regional industrialization strategies has been the increased rhetoric of African policymakers on the need to promote structural transformation in their economies, with renewed emphasis being given to national industrial development. Although manufacturing production in Sub-Saharan Africa more than doubled between 2005 and 2014 and has grown at 3.5% annually in real terms over the past decade, faster than global growth in manufacturing production (Balchin et al, 2016), the share of manufacturing value added in Africa's economic output is lower now than it was in the 1970s, and African countries still account for a small share of global manufacturing output.

Recent commodity and investment-driven growth across Africa has not made significant inroads into high levels of poverty, unemployment and income inequality in many African countries. Nor has it created sufficient jobs to match the continent's young and rapidly-growing population, a particularly pressing concern for African governments given the risk of political and social unrest posed by high levels of youth unemployment.⁶ Moreover, recent economic growth has failed to stimulate significant structural transformation into higher productivity sectors and activities on the continent (ERA, 2014). As a result, many African countries remain dependent on exporting primary commodities, such as minerals and agricultural products, leaving them vulnerable to fluctuating commodity prices and global demand shocks (ERA, 2014). A growing body of literature - exemplified by recent editions of the Economic Report on Africa - makes the case for African countries to prioritize industrialization, while 'sustainable industrialization' is one of the Sustainable Development Goals.

While structural adjustment policies in the 1980s were partly a response to the failure of import-substitution industrialization attempts in South America, the importance of industrialization for economic development is also highlighted by the experiences of

newly industrialized countries in East and Southeast Asia. Those countries relied on their manufacturing sector as the main engine of growth to facilitate their transition from low-income to upper middle- and high-income status. Consequently, African policymakers increasingly advocate the need to promote domestic industrialization in order to generate employment opportunities and improve standards of living for their populations, and many African countries have prioritized industrialization in their long-term development strategies.

Relatedly, industrial policy has become increasingly accepted as a legitimate and necessary tool to promote economic development, a trend Rodrik (2008) has called the "normalization" of industrial policy. During the 1980s and 1990s the policy prescriptions of the "Washington Consensus" discouraged African (and other developing country) governments from intervening in their economies and using industrial policy. The failure of the policies prescribed by the Washington Consensus to boost structural transformation and create sufficient jobs in Africa and elsewhere, coupled with the apparent success of interventionist industrial policy in East and Southeast Asia, led to a reevaluation of the appropriate role of governments in fostering structural transformation and the reappearance of industrial policy on the economic development agenda, especially in Africa.

In 2008, the African Union adopted the Action Plan for Accelerated Industrial Development of Africa (AIDA) calling for African states to develop and implement industrial policies.⁷ More recently, the 2014 Economic Report on Africa, outlined the need for African countries to introduce "credible industrial policies" and promote effective industrial policy organizations to promote structural transformation on the continent. Many African countries have adopted dedicated national industrial policy frameworks in recent years, including South Africa (2007), Uganda (2008), Ghana (2011), Rwanda (2011), Zimbabwe (2012), Ethiopia (2013), Botswana (2014), Côte d'Ivoire (2014) and Kenya (2015). The reasons for and focus and effectiveness of these policy frameworks vary, with political interests and incentives playing an important role (see e.g. Whitfield et al, 2015, McMillan et al, 2017).

A new direction for regionalism?

While regional strategies have emerged as part of the same set of rhetorical and ideological shifts, there are additional factors behind the increased focus on regional industrialization in Africa. One such factor is increasing frustration that regional integration in Africa has so far failed to generate expected benefits in terms of boosting intra-African trade and supporting structural transformation and economic diversification.⁸ Africa's RECs adopted the "European" model of market integration largely based on a logic of addressing the constraints posed by Africa's small domestic markets. Market integration and the removal of barriers to intra-regional trade are meant to provide opportunities for African firms and industries to benefit from economies of scale inherent in larger regional markets which then allows greater specialisation and productivity growth. The mechanisms established to govern regional integration are also meant to provide platforms for promoting trade facilitation and cross-country knowledge-sharing to support industrial capacity building at the national level.

Though regional integration processes in Africa have yielded the formal trappings of

market integration, with agreements to establish free trade areas and customs unions, there has been only partial implementation and limited impact on intra-regional and intra-African trade. Weak market integration is relevant for industrialization as intra-African trade involves a higher proportion of manufactured products and intermediate goods than Africa's extra-regional exports, and is therefore particularly important in terms of supporting Africa's manufacturing industries.

A commonly cited reason for limited intra-African trade is that integration has focused largely on removing barriers to trade without the effective development of the productive capabilities on the continent. Without such capabilities, African economies remain relatively undiversified and their trade complementarity low. In other words, having failed to develop diversified industrial sectors that produce the goods demanded by African consumers, African countries are simply not in the position to exploit opportunities created by eliminating barriers to intra-regional trade.

From regional to global?

The recent rise of global value chains as conduits for global economic activity has also contributed to reframing the discourse on how African and other developing countries can foster industrialization. Instead of having to develop entire supply chains as late industrializers such as South Korea did, integrating into global value chains theoretically allows African countries to participate in the global economy by specialising in specific tasks in line with their comparative advantages (e.g. Baldwin, 2013). In theory, such participation can generate knowledge and technology spillovers that stimulate industrial upgrading.

Typically, however, African countries find themselves in the low value-added, 'upstream' end of global value chains, supplying raw materials such as minerals and agricultural goods to lead firms from more advanced economies. In many cases, poor firm-level capabilities to meet quality standards and conform with formal requirements prevent them from breaking into higher value-adding activities within global value chains. Regional value chains are therefore seen by some to offer a more accessible way for firms to build capabilities through learning-by-exporting, but with lower barriers to entry, such as less stringent quality standards (e.g. UNCTAD, 2013).

All these elements – a change in narrative towards employment and economic transformation in Africa, lessons from elsewhere in the world, the 'normalisation' of industrial policy (Rodrik, 2004) among international institutions, frustration with traditional regional market integration and the emergence of global and regional value chains have led to an increased focus on industrialization in regional discourse (Rodrik, 2004).

Industrial policy: what and how?

It is now accepted that governments can play a key role in fostering economic transformation through industrial policies. The broad aim of such policies is to encourage the search for new business models and markets, and channel resources into promising and socially desirable new activities (Altenburg, 2011). Since the seminal work of Rodrik and McMillan (2014), the goal of industrial policy is not just diversification and raising manufacturing value added, but more specifically to promote raising productivity within

sectors, but also assist the movement of workers between sectors from low productivity activities, in agriculture and informal services, to high productivity activities in modern services and manufacturing.

At a general level, Hausmann et al (2008) identify three forms of market failure that justify the use of industrial policy and help guide policy focus (see box).

1. **Public inputs failure** - Private investments are often unattractive due to a lack of certain key public inputs such as transport and energy infrastructures or a sound legal framework. Government can, therefore, assist the industrial sector through the provision of specific legislation, accreditation, R&D, transport etc, without which some industrial activities would not take place.
2. **Coordination failures** - Beyond the above, “New economic activities often require simultaneous and lumpy investments upstream, downstream, and in parallel forks, which decentralised markets are not good at coordinating” (Hausmann et al, 2008). Governments can help coordinate complementary investments with services such as the matching of suppliers and clients, the provision of detailed enterprise databases and/or sectoral platforms to improve information flows, and improved policy coordination between different Ministries.
3. **Self-discovery failures** - It costs money for a firm to experiment with what new products and activities can be carried out profitably in a specific economy. The social benefits may be high, but the private gains are subject to free-riding. Potential replication by competitors reduces the incentive for firms to experiment in the first place. Government can help by offsetting the risk to entrepreneurs entering new markets.

While this may appear to move away from the dichotomy often drawn between ‘horizontal’ (general, or functional) policies and ‘vertical’ (selective or sectoral) policies or ‘picking winners’, addressing market failures will often have to focus on specific sectors to have traction. Further, as UNECA (2016) set out in their report on “Transformative Industrial Policy for Africa”, policies sometimes perceived as being neutral inherently benefit some sectors, activities and actors over others, so there may not be such a thing as a neutral, horizontal policy.

The emphasis instead is on the process of consultation and coordination between public and private sector actors to identify specific market failures and address them in a coordinated way, with adjustments along the way, informed by functioning feedback loops. This raises challenges of policy design with sufficient ownership; provision of clear, transparent and predictable rules; well-functioning feedback loops; state capacity and high-level commitment (Altenburg, 2011; Page and Tarp, 2017).

Inherent in all this is the fact that industrial policy is highly political. “Politics are central to understanding why governments pursue industrial policies, which sectors they target and with what kinds of policies, and how those policies are actually implemented” (Whitfield et al, 2015). Developing countries face a particular challenge: “they need more proactive governments to cope with all their market failures, but their political

systems are often built on favouritism, and their administrations typically lack both the resources and the right incentives for effective service provisioning” (Altenburg, 2011).⁹ State-business relations must balance efficient information sharing and cooperation with the risk of capture, requiring a form of ‘embedded autonomy’ of public and private actors (Rodrik, 2004). Successful industrial policies hence rely on three conditions: mutual interests among state bureaucrats, firms/farms, and ruling elites; pockets of bureaucratic efficiency; and ways of “learning for productivity” (Whitfield et al, 2015).

Beyond the challenges this raises at a national level, little has so far been analysed of the implications of working at a regional level. The logic for regional approaches to industrialization relates to “regional fragmentation, small economies and small markets with limited scope for economies of scale” (Hartzenberg, 2011). Accordingly, a more integrated approach to industrialization across countries within a region will encourage investment and enable firms to produce more competitively in a larger market. At the same time, greater industrialization is often seen as a necessary precursor to further trade liberalisation - ‘you need to produce before you have something to trade’. Industrialization strategies and regional integration processes thus appear to go hand in hand.

But do regional and national industrial policies necessarily have the same objectives? On paper, one might simply substitute ‘regional organisation’ for ‘government’ in the areas proposed by Hausmann et al (2008): *Regional organizations* can help by offsetting the risk to entrepreneurs entering new markets; *regional organizations* can help coordinate complementary investments... and improved policy coordination between different ministries/governments; and *regional organizations* can assist the industrial sector through the provision of specific legislation, accreditation, R&D, transport etc. But do regional organizations play this same role? Or does industrialization promotion at a regional level imply different objectives and approaches? And where do political economy dynamics enter the equation?

As the following section illustrates, our analyses of COMESA, the EAC and ECOWAS all suggest that the translation of industrial policy from national into regional level is not simply a question of scale. Rather, within and between country interests and politics are fundamental in understanding where regional policies can add value to national efforts, and garner genuine regional traction.

Taking industrial policy regional

Regional industrialization policy objectives

Prima facie, the objectives of regional industrialization policies are the same as those for a country, simply scaled up to a larger geographical area and population. The focus remains on encouraging structural transformation into higher productivity activities, diversifying production and trade, raising value added and providing sustainable employment (UNCTAD, 2015¹⁰)

Although their regional industrialization strategies are at different stages of development, with the EAC and COMESA most in their infancies, all share the same broad goal: developing the manufacturing base and encouraging value addition and industrialization in the region as a whole. The 2015 SADC Industrialization Strategy

and Roadmap suggests a need to “identify areas where the SADC region can have the greatest success in capturing high opportunities based on present and future strengths and capabilities”, stating its concrete objectives as:¹¹

1. doubling the share of manufacturing value added (MVA) in the region’s GDP to 30% by 2030,
2. increasing manufactured exports to at least 50% of total SADC exports by 2030,
3. building SADC’s market share in the global market for the export of intermediate products to East Asian levels of around 60% of total manufactured exports
4. lifting the regional growth rate of real GDP from 4% annually (since 2000) to a minimum of 7% a year;
5. increasing the share of medium-and-high-technology production in total MVA from less than 15% at present to 30% by 2030 and 50% by 2050 and;
6. increasing the share of industrial employment to 40% of total employment by 2030.

Similarly, ECOWAS’ West Africa Common Industrial Policy talks of the need to “accelerate the industrialization of West Africa through the promotion of endogenous industrial transformation of local raw materials; development and diversification of industrial productive capacity”. It has similar specific objectives: raise the local raw material processing rate from 15-20% to an average of 30% by 2030; increase the manufacturing industry’s contribution to the regional GDP, currently at an average of 6%-7%, to an average of over 20% in 2030 (ECOWAS, 2010). COMESA also seeks to “promote regional economic transformation and employment creation”, with the following specific targets: raise value added products and exports as a %age of GDP from the current estimate of 9% to 29% by 2026; ii) increase the share of manufacturing in GDP to at least 20% by 2026 and; iii) increase intra-regional manufactured exports relative to total manufactured imports to the region from the current 7% to 20% by 2026” (COMESA, 2017). So, at first sight, regional objectives seem to mirror those of national strategies even if the means to achieving these vary as discussed below.

The implementation challenge for regional policies

Analysing implementation progress of the regional industrialization strategies is challenged by the different periods for which they have existed. COMESA’s industrialization strategy was only formally adopted in 2017 and that of SADC in 2015. The EAC’s Industrial Policy was adopted in 2012, but has reportedly gained little traction thus far. ECOWAS’ WACIP, meanwhile, was adopted in 2010, and updated in 2015, thus offering a longer period over which to understand the regional dynamics at play in this policy area.

The starting point for implementing industrialization strategies also varies considerably given the great differences among regional groupings. Depending on the nature of the task, promoting ‘regional industrialization’ in COMESA’s 19 member states that include such diverse countries as Egypt, the Seychelles and Zimbabwe, is likely to create different demands from doing the same for the five (now six) member EAC, or 15 member ECOWAS.

But beyond the more foundational factors affecting comparative progress *between* RECs, some of the key challenges are in terms of dynamics between countries *within* RECs. In the same way that the benefits of national industrial policies are sometimes

concentrated on specific locations or areas within a country (whether by design or not), some countries are likely to benefit more than others from regional industrial policies. Region-wide industrial objectives do not take account of the fact that even if achieved, some countries are likely to benefit more than others (e.g Venables et al, 2002; World Bank, 2009). This then affects the level of political priority that is given at a national level and how the strategy is implemented (or not), where regional organizations have limited means to enforce commitments made and the demands from the "regional private sector" are often very dispersed (Vanheukelom and Bertelsmann-Scott, 2016). Regional mechanisms for redistribution of benefits are also weak or non-existent in most regions.

Further, even nationally defined and agreed industrial policies are subject to pressure from different interest groups who perceive a cost or benefit from industrial policy. Given that industrial policy has uncertain results that may take a long time to emerge, short-term political survival imperatives constrain the ability of ruling elites (or a faction of them) to prioritize and pursue industrial policies at the national level (Whitfield and Therkildsen, 2011), which then has implications for implementation of the regional agenda. The result is that support for regional industrial policies is often piecemeal and fragmented.

The SADC Industrialization Strategy makes explicit reference to the difficulties inherent in designing industrial policy within a regional integration context. It cites the diversity of Member States' geography, economic structures, resource endowments and therefore their differing approaches to regional integration and cooperation. The Strategy emphasises that collective development requires complementarity of production and trade structures and policy convergence over time (SADC, 2015). Even the perception of such an uneven distribution of benefits can have a detrimental effect on regional processes. The EAC experience is a case in point. The first iteration of the EAC collapsed in the late 1970s, in part due to a sense of unequally shared gains among countries. Tanzania perceived that Kenya was benefiting disproportionately from the regional agreement to share industries according to comparative advantages. These tensions were exacerbated by their differences in terms of administrative and political systems (capitalist vs socialist economy), influenced by the geo-strategic pressures and alliances of the Cold War, (Grosse-Puppenthal, 2017).

In Africa's regional processes, national interests tend to dominate regional ambitions (e.g. Vanheukelom and Bertelsmann-Scott, 2016). The primacy of national interests is most clearly shown in the tension between how countries use trade policy to achieve industrial policy objectives, often at the expense of their regional neighbours. Though market integration has been at the core of regional agendas, and is often the main reason member states join RECs, many countries have pursued industrialization through the protection of national industries against foreign (including regional) competition. This is still visible today in the many non-tariff barriers and import bans that undermine regional free trade agreements and customs unions. The EAC Industrial Policy (2012-2032), for example, emphasizes above all its market-based approach and the preservation of the EAC Common Market, while planned interventions have remained largely unimplemented and non-tariff barriers to intra-regional trade remain. Recent evidence of trade wars within the EAC are especially illustrative of how national industrialization concerns can undermine regional commitments. For example, as part of the cross border trade war between Kenya and Tanzania, Brookside Dairy, was one of the companies (and 19 others) that were banned from accessing the Tanzanian market through import

bans and restrictions (going against the EAC FTA). Up to this day, these countries continue to disagree over certificates of origin at the Namanga border post between Kenya and Tanzania.¹²

The West African Common Industrial Policy (WACIP) has similarly had little influence on national policies, with countries like Nigeria erecting trade barriers and bans that affect neighbouring countries. The formulation of the ECOWAS Common External Tariff (CET) was subject to disputes between the more protectionist (and industrialized) regional 'swing state' Nigeria and other member states, eventually resulting in an extra tariff band to reflect Nigerian priorities to protect their industries (Karaki and Verhaeghe, 2017). Beyond this, Nigeria has an Import Prohibition List that includes cement, violating the ECOWAS Trade Liberalization Scheme (ETLS), which is meant to provide for the free movement of goods between ECOWAS countries. No further cement import licences have been granted since early 2012, while those companies with existing licenses can only import with a planned mandate to develop their domestic manufacturing (Byiers, Karaki and Vanheukelom, 2017). In general, Chambers et al (2012) note that the Nigerian trade regime remains unstable and protectionist, but also opaque and arbitrary (Fasan, 2015). Due to non-tariff barriers, Nigeria has essentially remained closed to imports, even though waivers were granted by the government of Umaru Yar'Adua and Goodluck Jonathan to domestic powerful interest group (Fasan, 2015). Nigeria therefore has the lowest rate of implementation of the ETLS in West Africa (Hulse, 2016) with detrimental effects for countries in the region hoping to produce for export to the large Nigerian market.¹³

What role for regional organizations?

The primacy of national interests and lack of regional redistribution mechanisms raise clear challenges for preparing and agreeing on a regional approach to industrialization, but also for implementation. Arguably, as a consequence of these factors, political traction for a regional approach to industrial policy is perhaps more limited than indicated in the (often ambitious) policy documents.

This then raises questions about the role that regional organizations can realistically play in supporting or promoting industrialization among member states.

Looking across a range of RECs and policy areas, Vanheukelom and Bertelsmann-Scott (2016) find that regional policies have more traction when the commitments made align with the objectives of national leaders and political elites and where there is demand from private sector actors, not least since ultimately regional agreements are implemented at the national level. This is similar to the observation by Whitfield et al (2016) that for national industrial policies to be implemented, there needs to be alignment between the interests of bureaucrats, businesses and political elites.

While regional strategies essentially scale up national objectives to a regional level, the implementation challenge differs from the national level. National governments may have limited incentives to implement regional strategies unless they see a national (political) advantage, while regional organizations have limited mandates to push member state governments to act, something that runs through the following discussions.

Regional approaches to missing public inputs

Even if regional strategies share similar overall objectives to national industrial policies, do they aim to address the same market failures as identified by Hausmann et al (2008)? If so how does that work in practice?

At a national level, one key objective of industrial policy is to help overcome the coordination failure associated with missing public inputs. These inputs - Hausmann et al (2008) highlight “legislation, accreditation, R&D, transport and other infrastructure specific to an industry” - make private investments more attractive and commercially feasible, but private actors are unlikely to invest in such inputs given the risk that other private actors would then be able to free ride on this investment.

Industrial policy or just regional integration?

Given the national-regional tensions cited above, an effective approach to regional industrialization may indeed be to complement national approaches at the regional level in a more politically neutral way. This might focus on ‘horizontal policies’ that aim to improve the environment for cross-border trade and investment more broadly without targeting any specific industry or benefiting one country’s industrial capacity. For example, the COMESA Industrialization strategy refers to its regional trade facilitation programme (Woolfrey and Verhaeghe, 2017a). Similarly, the EAC industrial policy states that: “Successful industrialization will depend on ensuring coherence in various policies including application of CET and Customs Union instruments; Implementation of Common Market Protocol; harmonization of taxation and management of taxes; removal of non-tariff barriers (NTBs); harmonization of Standards; and development of a robust agricultural sector etc.”¹⁴ Likewise, the WACIP includes expected results (part of the broader WACIP specific objective) such as the adoption of the ECOWAS CET; or the development of infrastructure and integrating investment projects in the area of energy.

In this regard, a lot of what takes place outside industrialization strategies might be perceived as providing supporting public inputs to underpin industrial investment and connect markets. Examples include the SADC and ECOWAS focus on transport infrastructure provision in the form of corridor development, cross-border trade facilitation measures, trade policy more generally and standards. Cross-border and regional energy pools such as the West African Power Pool, Southern African Power Pool and the Eastern Africa Power Pool (under COMESA) arguably also underpin regional industrial development.

The SADC Industrialization Strategy is also in some ways a response to the difficulties of progressing in other regional policy areas - it is based on the premise that implementation of the SADC Free Trade Area (FTA) is slow because of the lack of an industrial base among member states. This was what led Zimbabwe to push to prioritize industrial policy at the SADC level under its regional chairmanship, which was accepted by other members even if South African interest groups did not immediately appear convinced (Vanheukelom and Bertelsmann-Scott, 2016). Though recent evidence suggests that the South Africa government is at least on-board, if the real value of the regional policy is to provide regional public goods, this may simply be a distraction before attention returns

to the wider, more traditional aspects of regional integration such as infrastructure linkages and trade facilitation.

Box 1: Industrialization beyond the regional policy in SADC

Of all the regions studied, SADC has perhaps been the most ambitious in putting industrialization objectives at the forefront of its integration project. In recent years there has been an unmistakable shift in rhetoric among SADC member state officials away from deeper market integration to the need to "consolidate" the Free Trade Area (FTA), and strengthen the region's cross-border infrastructure and industrial base. Even before the SADC Industrialization Strategy (2015-2063) came into force, SADC regional policies had a strong focus on productive capacity and infrastructure. SADC has made important progress in the development of transport corridors to ease cross-border trade in strategic territories. At the same time, in the area of trade it has adopted strict rules of origin (RoO) to promote local manufacturing in the region over imports, although these RoO also restrict industrial policy options for the less industrialized SADC member states. Regional trade in SADC has also been subject to various non-tariff barriers, such as discriminatory charges, onerous customs procedures and various SPS and other regulatory barriers, reflecting the increasing use by some member states of policies and regulatory measures intended to protect domestic industries from regional competition, again potentially undermining the regional industrialization objectives.

Source: Vanheukelom and Bertelsmann-Scott (2016); Woolfrey and Verhaeghe (2017b).

Although in theory industrial and other cross-cutting policies on, for example, infrastructure, should be mutually supportive, targeting or underpinning specific types of industrial investment, the analysis suggests that in practice these are often disconnected. Infrastructure and industrial strategies are designed and approved separately through different processes, involving different ministries and other actors at the national and regional levels. While there are less apparent tensions between regional energy/transport/infrastructure and industrial policies than for trade, a lack of coordination and coherence between responsible bureaucracies can mean that regional organizations essentially fail to play the coordinating role of promoting public inputs for industrialization.¹⁵ If industrial strategy is seen as a sectoral area without the cross-cutting coordination, then this creates organizational problems.

Within REC secretariats, industrial strategy is generally handled under the authority of the Directorate of Industry, while infrastructure policies are handled by a different directorate. This is the case in ECOWAS, where there is an Industry and Private Sector Promotion directorate, while other departments include Energy and Mines; Infrastructure; or Trade, Customs, and Free Movement. COMESA includes separate directorates on Trade; Infrastructure; and Industry and Agriculture. Of course, there is some joint coordination, but industrialization strategies have to date appeared as yet another sectoral approach rather than an integrated goal of overall regional strategies. COMESA is a case in point where energy is an industrial policy priority sector, but also the focus of the COMESA-related EAPP, where these reportedly do not align. In ECOWAS, the lack of coordination between the different directorates

(including Trade, Customs, and Free Movement and Industry and Private Sector Promotion) has impeded the implementation of the WACIP (Karaki, 2017), with trade agreements such as AGOA and EPA, providing further opportunities for raw material exports, but much less for ECOWAS manufactured products. Whether nationally or regionally, industrial outcomes are not shaped and promoted by the work of the Ministry or Directorate of Industry alone. Instead, they rely on a whole cross-section of policy areas and actors.

While the EAC Industrial Policy explicitly mentions the goal of synergy building between industrial development and other sectoral initiatives, much of regional infrastructure and corridor development takes place outside regional institutional frameworks. This has been the case with the Northern and Central Corridors, but also through special purpose vehicles funded by external partners such as TradeMark East Africa.

One exception to this may be the case of SADC. Though initial indications suggested limited genuine political traction for such a policy, more recent evidence suggests that industrialization may yet become something of an overarching goal for all SADC policies. The (re)framing of cross-cutting interventions on trade, trade facilitation, infrastructure, standards, etc. as crucial for regional industrialization in order to reinject momentum that in some cases has waned, may help overcome some of the coordination and organizational challenges discussed below.

Standards as 'horizontal' public inputs?

One particular area of the ECOWAS Industrialization Strategy that has garnered traction is the Standardization, Quality Assurance, Accreditation, and Metrology Programme (SQAM). While the ECOWAS WACIP proposes numerous regional public inputs such as an industrial research and development programme (IR&D), development of regional intellectual property rights (IPRs) and development of regional financing, only the SQAM has really gained traction in implementation. Indeed this is one of 10 regional industrial programmes, and anecdotally the only one that has made any real progress.

Based on the regional strategy and programmes rolled out under it, the WACIP has resulted in the harmonization of regional standards for more than 320 products, and certification of firms for 40 industrial goods, providing a good basis for cross-border and regional value chains. Although arguably more about cross-border trade policy than industrial policy, interviews and analysis suggest the implication that targeted efforts around a technical, well-defined area, that is perceived as being neutral to political interests and serving broad, private sector needs, helped stimulate greater traction at a regional level.

In that sense, this programme seems to be an example of an industrial policy public input that needs to be tackled at the regional level (common tariffs, NTBs, lack of harmonization of standards) to support cross-border trade and value chain development in a specific sector or sub-sector (e.g. dairy). Other examples are supporting the standards and accreditation processes across the region for a priority sector, dealing with specific NTBs, reducing a Common External Tariff on relevant inputs though, here too, the political economy of trade policy and implementation often lead to violation of regional agreements when needed to satisfy private sector groups, as highlighted in the case of

Nigeria above and mentioned in terms of the EAC member state trade wars.

Box 2: The WACIP as a tool for trade facilitation through regulatory public input

The West African Common Industrial Policy (WACIP) is an extensive document, covering 10 different programmes. Together, these programmes respond to various needs and market failures, including self-discovery, coordination and public input. In practice, however, the policy document has remained largely unimplemented, partly due to the lack of a concrete action plan, timetable or division of labour. However, the Standardization, Quality Assurance, Accreditation, and Metrology (SQAM) programme achieved significant progress, with member states expressing satisfaction with the concrete efforts made via WACIP. Under the SQAM, the region engaged in the development of a Quality Policy (ECOQUAL), a Standards Harmonization Model (ECOSHAM), and a West African Accreditation System (SOAC).

There are several reasons for the success of the SQAM compared to other aspects of the WACIP, including the availability of sufficient (external) funding, a certain degree of experience in this area, and a well-developed institutional framework. Though potentially due to being a technical area and with limited political visibility, importantly, the SQAM responded to urgent needs of some private sector actors in enhancing market access and increasing competitiveness. Thus, both the government and the private sector are strongly engaged in the quality process, as witnessed by the number of certified companies, which has been increasing in recent years. OSIWA (2016) also highlights the joint efforts of ECOWAS and UEMOA, which had already made progress in certification of local entities for the production of certain industrial goods. This success seems to point to a convergence of interests between ECOWAS, its member states and their national private sectors in the name of trade. Although data is not available to date on the type of companies and sectors/industries using the SQAM processes, it would be an interesting avenue to pursue further.

Source: Karaki (2017a); OSIWA (2016).

In sum, in line with the objectives of industrial policy as laid out in the framework by Hausmann et al (2008), provision of missing public inputs clearly is an aspect for regional industrial strategies. However, in many ways this is simply the regional integration agenda beyond industrialization. The main concern raised around the public inputs aspect of regional industrialization strategies is therefore organizational – if the industrial strategy were to be framed as an overarching framework for regional organizations, that might create momentum and traction so that regional infrastructures or trade measures necessarily focus on underpinning regional industrialization objectives.

Overcoming regional coordination failures?

While establishing and implementing a regional system of standards is partly about providing public inputs, it is also about coordination of different national actors and systems.

Beyond coordinating public inputs, Hausmann et al (2008) refer to national coordination failures in terms of coordinating private investments to enhance their profitability,

through provision of services such as the matching of suppliers and clients, or the provision of detailed enterprise databases to improve information flows. Clearly, once looking at industrialization regionally, the number of actors to coordinate and align interests expands, with poor provision of regional public inputs potentially also undermining attempts to better coordinate private investments.

Most regional industrial strategies studied cite regional value chain promotion as an objective.¹⁶ The EAC Policy talks of mapping priority regional value chain and raising awareness among stakeholders. Though not framed explicitly in terms of value chains, ECOWAS rather talks of “the promotion of endogenous industrial transformation of local raw materials; development and diversification of industrial productive capacity and strengthening regional integration and export of manufactured goods.” This is another approach to adding value at a regional level that relates to overcoming coordination failures through a “Business Opportunity Information Management System (ECO-BIZ)” and “Creation of the regional industrial partnership network”. However, to date these have seen very little traction - possibly due to a lack of private sector consultation on actual needs, discussed below.

Encouraging priority sectors, regional value chains

Related to the aspiration to promote regional value chains is the promotion of “priority sectors”. The industrial strategies of COMESA, ECOWAS, EAC and SADC have all identified priority sectors for regional industrialization. For example, COMESA has 10 priority sectors for regional cooperation while the EAC has six. These include energy, which might be considered a whole regional cooperation area in itself, and other sectors in which it aims to foster linkages between SMEs and larger firms by developing regional supply chain networks.

However, given that regional organizations can only work based on a mandate from the member states, the regional priority sectors are established as those that the member states already prioritize in their national industrial policies. Though a seemingly logical step to scale national industrial policy objectives up to the regional level (why would you pick other “non-priority” sectors?), and therefore easy to understand why member states subscribe to the rhetoric, competition between states often means that there is very limited member state buy-in to regionally coordinate efforts to promote the same sector across multiple countries. The EAC Industrial Strategy highlights how “three partner states (Uganda, Tanzania and Kenya) each have plans to set up mini-integrated iron ore processing plants.” It concludes that “there are therefore opportunities for collaboration in establishing integrated iron and steel mills that can serve the regional market and facilitate development of other linkage industries in the region” (EAC, 2011). While correct on paper, Uganda has also been known to place export bans on iron ore to promote its own processing - underlining again the dominance of national interests. Reflecting the same challenge in a different way, ECOWAS offers assistance for countries to align their national priorities with those at the regional level — there is, therefore, some confusion about where the priorities come from and what their purpose actually is.

This may mean that regional policies would better focus on specifically regional barriers and coordination failures to avoid duplication of national efforts, linking up producers and suppliers, while targeting ways to make these regional value chains commercially

attractive and productivity enhancing.

Whose priorities? Whose interests?

While the various regional industrialization strategies ostensibly aim to target regional coordination failures in specific "priority" sectors, the challenge is again to do with the tension between regional cooperation and competition among member states. This has already been raised in terms of achieving industrial objectives and the way this plays out through "trade wars", for example in the EAC, but also raises deeper questions again about the purpose of regional industrialization strategies vis-a-vis national strategies.

This is especially clear in the selection of priority sectors. The regional priority sectors established are often those that the member states ostensibly prioritize. That might make sense in that countries seek additional support for what is a national priority (and that regional organisation needs to base their priority sectors on those of member states to generate enough traction for policy implementation). However, taking such priorities to a regional level then also potentially invites competition, leading to the barriers discussed above. To illustrate, although ECOWAS WACIP prioritizes the pharmaceutical and the industrial material sectors based on the stated interests of some of ECOWAS member states, it does not follow that they can and want to do that in a common regional approach. Given a dependency on French pharmaceuticals in the francophone ECOWAS countries, reflecting international relations and historical dependencies that the ECOWAS policy aims to address, Nigeria has put medicines, waste pharmaceuticals and bagged cement on their import prohibition list.¹⁷ Broad, regional sector-based approaches either result in competition or are not implemented (see the example of SADC).

Part of the challenge then is the relation between regional and national policies. The SADC Strategy suggests that member states should align their national industrial policies with the regional vision. COMESA does similarly, stating that "Member states are responsible for the implementation of the COMESA industrial policy by aligning the national industrial policies and other related policies to the regional one." But the national industrial policies of the COMESA member states rarely refer to the region's industrial and value-chain policies, though recognising the importance of COMESA market integration (Woolfrey and Vernaeghe, 2017a). The ECOWAS Commission even offers assistance to member states to align their strategies with the regional objectives stated in the WACIP, and to draft national industrial policies in line with regional industrialization policy objectives. However, member states have not used such assistance and conducted very few consultations with regional level actors, suggesting a limited role and traction for this approach to regional industrialization policy.

Where is the private sector?

Clearly "priority sector" promotion should also be based on underlying commercial interest from the private sector. Returning to the national level, as Hausmann et al (2008) state, "[t]he government in turn requires the cooperation of firms and entrepreneurs

because it needs to elicit the relevant information about the obstacles and opportunities they face and because it has to influence their behaviour in the desired direction. Hence the necessity of collaboration between the two sectors in the search for distortions and their solutions.” Engaging the private sector at the regional level has been notoriously difficult for regional organizations.

Though most of the RECs have a regional apex private sector organisation in the form of a regional Business Council, their limited engagement in regional policy formulation and implementation often means feedback loops on how industrial policy is being implemented are often weak. For example, the ECOWAS Business Council does not seem to exist in practice (no information can be found), though it is mentioned in documents. That said, another regional private sector organisation, the Federation of West African Chambers of Commerce and Industry (FEWACCI), has an observer status in ECOWAS. This private sector association can rely on its national members to get a better sense of what the national and regional private sector interests are. But while in some ECOWAS countries, national chambers of commerce and industry are considered legitimate representatives of the private sector, this is not the case in others, and may thus undermine efforts to engage the private sector in policy discussions (interview). In SADC, there is no official umbrella regional business organisation that is recognized and regularly consulted on policy issues, thus limiting opportunities for the business community to participate directly in the current dialogue on industrialization in SADC. The Southern African Business Forum (SABF) and the SADC Private Sector Forum (SPSF) have the potential to play roles as apex bodies in a regional dialogue mechanism, although both these organizations are relatively new and could do more to broaden their outreach to national apex bodies (SADC, 2018). At present, most public-private sector dialogue takes place at national level, and rarely result in real commitments by the business community to regional objectives and plans (Vanheukelom and Bertelsmann-Scott, 2016). The East African Business Council also reportedly faces challenges in providing necessary feedback due its lack of capacities (human and financial resource) in the face of a burgeoning regional private sector agenda, and a source of finance coming exclusively from donors.

From analysis of different regional strategies, industrial strategies are often prepared with limited consultation of private sector firms. To date, this seems to have been the case in the EAC, where the regional policy is based more on AU/tripartite objectives than on national priorities; or ECOWAS, where the industrial policy updated in 2015 was reportedly based on studies carried out by consultants rather than consultations with the private sector operating within member states.

Further, private sector "interests" are not uniform. The private sector is made up of many different categories of actors, including producers, traders, transporters and retailers, whose incentives in relation to specific regional industrialization-related policies can differ quite markedly (e.g. importers can benefit from a poor policy environment for local production). In ECOWAS, for example, importers benefit strongly from weak industrialization in the region, and often have close ties with the political elite. Similarly in the EAC, political connections with the transport sector often shape policy decisions

and implementation.

To summarise, though regional industrialization strategies in some ways attempt to address coordination failures through selection of priority sectors, these efforts often gets stuck at the policy level with little in terms of actual linking businesses across borders. Aggregating national industrial priorities to a regional level ignores potential competition between Member States, suggesting that regional industrialization strategies should seek to complement rather than duplicate those of its member states. This implies that the actual industrialization process remains national, and that the regional level essentially takes up a supporting rather than directing role where regional action will support national ambitions.

Regional policy for firm-level self-discovery?

Finally, Hausmann et al (2008) point to the need for industrial policy to address “self-discovery failures”. As they put it, “Learning what new products can be produced profitably in an economy, and how, is an activity whose social value greatly exceeds its private value... Search is costly, and its returns uncertain. Ideas can be copied, to the benefit of the imitator but not the originator. In general, firms will under-invest in searches that provide “public” benefits and will seek to prevent competitive entry” thus requiring public intervention. This then goes beyond simple sector support strategies or wider public inputs, suggesting more targeted approaches, requiring the cooperation of governments, firms and entrepreneurs to elicit the relevant information about the obstacles and opportunities firms face “to be able to influence their behavior in the desired direction”.

Regional strategies to support firms?

Taking this process to a regional level seems somewhat unpropitious beyond the kinds of broad sectoral interventions discussed above, targeting regionally agreed priority sectors.

That said, one of the targets of numerous of the regional industrialization strategies is SME promotion, for example the ECOWAS WACIP, where one of the 10 proposed programmes is “Development of micro-enterprises, SME/SMIs and major industries”. The EAC Industrial Policy is also de facto much more about SME promotion and the promotion of manufacturing sectors at the national level than about regional market development

Beyond a general rhetoric around boosting SMEs, other regional examples go further in terms of uncovering firm opportunities.

Though yet to fully prove its value and impact, COMESA has engaged in several initiatives on cotton, cassava and leather, selecting pilot countries from among its members and working with firms to assist with industrial upgrading. The regional leather initiative has been most successful (see Box 4). In this area, the COMESA/LLPI has acted mainly as a broker and facilitator of *national processes*, with its traction in fostering regional industrialization (e.g. through the establishment of regional value chains) to be seen.

Box 4: The regional level as broker of national processes in the COMESA leather strategy

The COMESA leather strategy originated as part of the 2012 regional Cluster Development Programme, which focused on capacity building of Small and Medium Enterprises (SME) in the three sub-sectors of cassava processing, leather and leather products, and clothing and textiles. With the support of the International Trade Centre (ITC), the Leather and Leather Products Institute (LLPI) was revitalized, and a regional Leather Strategy was adopted. While the regional strategy puts in place an overarching regional framework, it leaves flexibility for member states and leather value chain operators to align or adopt according to local priorities and multi-stakeholder inputs. This approach seems to be having some success and to be finding traction among COMESA member states, with several member states requesting support in drafting national leather strategies. Other regional organizations, e.g. SADC, have approached ITC/LLPI to learn more about the approach that has been adopted in COMESA.

The successful experience of the COMESA Leather and Leather Products Institute (LLPI) in promoting value addition indicates that, while industrial development goals are generally pursued at the national level, countries do have an interest in receiving regional support. Moreover, the "political legitimacy" of the LLPI as a regional institution and its direct access to the highest political levels have enabled it to act as a platform for sharing experiences and best practices and to broker public-private and private-private linkages between value chain stakeholders. However, it is harder to find evidence of real traction in the case of COMESA's efforts to support the cassava processing or cotton-to-clothing value chains. While the reasons for these differences in traction should be subject to further research, it is clear that the COMESA leather strategy has some very specific advantages, including the existence of the Leather and Leather Products Institute (LLPI) as an institutional "anchor" for the policies, the involvement of experienced external partners such as the ITC, and a strong demand from and active participation of the private sector.

Source: Woolfrey and Verhaeghe (2017).

While something of a success, the doubt that the COMESA approach raises is the precise regional value addition that it creates. Rather than promoting regional coordination around a specific value chains, it appears to offer support from a regional body for national industries. That is in line with the ECOWAS proposal to assist countries in transforming their raw materials. This then brings the discussion back to how regional a regional industrialization strategy can really be - does it simply have to support national policies and objectives?

The different experiences in the WACIP and the COMESA leather strategy raise questions on the most appropriate level of engagement in the promotion of industrialization. Indeed, the case of the COMESA leather sector seems to indicate that regional policies have most traction when they adopt a flexible approach to participation, and leave room for national priority setting. This approach might hence owe its success to the fact that it allows member states to maintain national policy space, without imposing concessions in favour of regional industrialization.

Overall, despite the rhetorical support for a regional approach to industrialization and the creation of regional value chains, the nature of regional cooperation may have to begin with relatively narrowly identified national interests from which lessons can be drawn for other willing countries and sectors.

Implications for policymakers and partners?

If industrial policy is complicated by *within country* political interests and incentives as Whitfield et al (2015) suggest, seeking to attain industrial objectives at the regional level further adds to the mix of the actors and factors operating *between countries*. While looking regionally may broaden the potential benefits of overcoming *coordination* failures between countries, the increased number of actors can also make this more challenging. Regional *public input provision* is essentially part of the wider regional integration agenda around energy, infrastructure and trade; *self-discovery* might be supported through regional value chain promotion (RVCs), an increasingly cited policy goal and step towards integrating into global value chains (GVCs) and the global economy (e.g. Weigert, 2016).

There are numerous challenges in terms of designing and implementing industrialization strategies at a regional level, where interests and incentives among bureaucrats, businesses and elites are important but include both national level interactions among those, and regional interactions, with an additional level of bureaucrats in the form of regional organizations.

Based on the above examples, traction for regional approaches to industrial policy appears to depend on the following main factors:

The level of engagement: Industrial policies appear to have more traction where the regional policy is defined through consultations with the national level and/or there is room for national priority setting, with guidance from the regional level, as in the COMESA case. Where this is not the case there seems to be little motivation to implement regional policies such as the EAC case, where the regional policy is based more on AU/ tripartite objectives than on national priorities; or ECOWAS, where industrial policy was reportedly based on studies rather than consultations with the national level.

Regional policies also seem to have more traction when the nature of the commitments is national. Broad, regional sector-based approaches either result in competition or are not implemented (see example of SADC). In some cases, the regional policies are so broad that despite the formulation of priority sectors, the nature of the commitments is not clear, for example in ECOWAS.

The nature of the public good: Regional policies address all kinds of market failures, including issues of self-discovery, coordination and public inputs. However, depending on the context, different things can have success. The COMESA approach seems to suggest that narrowly targeted coordination and self-discovery support have the most traction, with public inputs reserved for the national level. In ECOWAS, coordination has been very limited, but one specific form of public input has had particular success in the form of SQAM. In SADC, coordination and public inputs through the corridor approach has been relatively successful while transport remains a key sector, although

this is not equally the case for all projects.¹⁸

A range of regional policies influence industrialization outcomes such as on trade, infrastructure, and energy. These can be put to support industrialization, but this is certainly not always the case. Trade policies/practices in particular are linked directly to industrialization efforts, with a difficult relation between trade and industrialization policies. Some RECs/member states see industrialization more in function of trade (i.e. industrialize to be able to trade better) while others see trade as supporting industrialization, such as in the EAC. At the same time, trade incentives can limit the traction for industrialization, for example when incentive structures reward export of raw goods over local manufacturing; when certain interest groups such as importers also have political ties to ruling elites.

Political elite interests/rent seeking behaviour: Political elite interests tend to be situated at the national level, so that they do not easily contribute to a regional approach to industrialization. Those regional policies that damage elite interests are unlikely to be implemented, while state-business relations around cross-border trade and investment may ultimately determine which aspects of regional industrialization strategies are implemented.

External support: As Altenburg (2011) raises, “Donors are major drivers of industrial policy... Donors supply funds and technical expertise to implement industrial policies and build institutional capacity. But they sometimes also contribute to policy fragmentation, overburden local administrations and tie up scarce professional resources”. He thus points to the need for governments to *harmonise* donors and align them with country strategies as an additional element of encouraging successful industrial policy. As for much of the discussion in this paper, what goes for national policy is often even more important for the regional level, with additional complexities - donors often have difficulties themselves in ensuring complementarities between their own national and regional programmes. Further, as Vanheukelom and Bertelsmann-Scott (2016) also point out, there is a danger of moving from supporting regional programmes to driving them, while the financial incentive of external support can often lead to adoption of strategies and commitments as a form of signalling, where national political interests essentially undermine the ability to implement meaningfully.

Conclusion

While the logic and appeal of regional industrialization strategies are clear at a conceptual level, they raise numerous challenges. By taking the three basic market failures that Hausmann et al (2008) identify as the target of national industrial policy, this paper has examined how these relate to the industrial strategies of different RECs in Africa. The discussion suggests that regional strategies often set objectives in a similar way that a country may, thereby glossing over the fact that regional organizations cannot and do not play the same role as national governments - enforcement mechanisms and methods for compensating "losers" from integration are generally lacking. Focusing on provision of regional public goods is another key objective, which is essentially that of the traditional regional integration agenda of promoting trade facilitation, infrastructures and standards. These can help promote regional industrialization but generally exist as strategies by themselves. Overcoming coordination failures in key

sectors is another key role, but competition between states in many agreed "priority sectors" often undermine this objective in practice. Finally, helping firms overcome "self-discovery costs" through regional capacity building and lesson-sharing may offer a way of cutting through national interests and setting in motion regional value chain dynamics as a basis for wider industrial cooperation.

Overall, the need for industrialization is clear and potentially growing but the challenge remains in balancing regional and national objectives. Private sector actors will be key in determining which elements of an industrialization strategy are implemented. Finally, using the industrial strategy as an overarching regional strategy to coordinate all other regional programmes and policies may be the most effective way to ensure that key member state actors see their interests reflected.

Notes

1. Less than a decade ago, major policy documents such as the World Bank's *World Development Report 2005* on the investment climate mentioned "industrial" only in the appendix (te Velde, 2013)
2. <https://au.int/en/ti/aida/about>
3. Policy briefs and background papers on these, produced by ECDPM with financing from the German Government through BMZ can be found at: <http://www.ecdpm.org/regionalorganizations>. This paper builds on a forthcoming policy brief on regional industrialization strategies.
4. For example, the themes of the most recent COMESA Summits were "Consolidating Intra-COMESA Trade through MSME Development" (17th Summit - 2014) and "Inclusive and Sustainable Industrialization" (18th Summit - 2015 and 19th Summit - 2016), while the themes of the most recent SADC Summits were "Partnering with the private sector in developing industry and regional value chains" (37th Summit - 2017), "Resource Mobilization for Investment in Sustainable Energy Infrastructure for an Inclusive SADC Industrialization and for the Prosperity of the Region" (36th Summit - 2016) and "Accelerating Industrialization of SADC Economies through transformation of natural endowment and improved human capital" (35th Summit - 2015).
5. In 2015, ministers from the Economic Community of West African States (ECOWAS) adopted a Revised West African Common Industrial Policy (WACIP) Strategy (2015-2020) - the WACIP had originally been adopted in 2010. The Southern African Customs Union (SACU), meanwhile, is also seeking to develop a regional policy on industrial development.
6. The AFD-World Bank publication "Youth Employment in Sub-Saharan Africa" gives evidence to the effect that the Sub-Saharan African labour force is expected to increase by 11 million people per year over the next 10 years (COMESA IP)
7. To operationalize the AIDA, the African Union Commission, with the support of UNIDO, developed an Implementation Strategy that focuses on creating coherent industrial policy frameworks at national, regional and continental levels that are well-focused and sensitive to local endowments.
8. Multiple examples can be found from local press and from conferences around the regional integration implementation gap. Just one example relating to cross-border trade barriers that remain: <https://www.businesslive.co.za/bd/opinion/2017-04-19-progress-on-hold-as-trade-barriers-constrain-africa/>

9. While this is a risk, “not having an industrial policy - leaving it to the market, structured as it is by special interests - is itself a special-interest agenda” (Stiglitz, 2015).
10. See also more information at <http://www.mz.undp.org/content/mozambique/en/home/presscenter/articles/2016/05/17/industrialization-and-diversification-key-to-reverse-decline-caused-low-commodity-prices-0.html>
11. http://www.ilo.org/wcmsp5/groups/public/---africa/---ro-addis_ababa/---ilo-pretoria/documents/meetingdocument/wcms_391013.pdf
12. <http://www.theeastafrican.co.ke/business/EAC-reluctance-open-borders-hurt-regional-trade-/2560-4265946-14mvs3xz/index.html>
13. <http://www.arabnews.com/node/1046341/business-economy#.WI7GoC-xHRk.twitter>.
14. http://easteco.org/wp-content/uploads/2016/08/EAC_Industrial_Strategy-September-2012.pdf
15. The transport sector provides a case in point: while transport is a crucial factor in stimulating and creating cross-border trade and linkages, reforms in the sector have often been held back by national transporters’ associations, and implementation is often hindered by rent-seeking behaviour of low-level government officials and limited central control. Meanwhile, cross-border transport infrastructure works have been susceptible to political disputes at the highest level (Saana, 2016).
16. <http://www.comesa.int/wp-content/uploads/2016/06/Vol-20-No.1-March-2015.pdf>
The EAC strategy also cites “Promoting strategic regional industry value chains with widespread linkages and economic benefits extending across the region https://easteco.org/wp-content/uploads/2016/08/EAC_Industrial_Strategy-September-2012.pdf”
17. <https://www.customs.gov.ng/ProhibitionList/import.php>
18. The SADC Industrialization Strategy notes that “the efficiency of the present transport corridors should therefore receive particular priority to enhance trade facilitation and open up alternative transport links,” while the draft Industrialization Action Plan spells out the need to “develop priority transport corridors by improving hard and soft infrastructure”.

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Two Greasing the wheels of regional integration: Infrastructure as a catalyst for trade, innovation, and growth in sub-Saharan Africa¹

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Abstract

Now, more than ever, infrastructure integration in Africa has become critical to the rebalancing of Africa's growth strategy towards increased intraregional trade. This is particularly so because of the recent wave of protectionism and populism around the world. This paper investigates the extent to which infrastructure development and integration can act as a catalyst for trade, productivity growth, and income improvements in Africa; and examines some important policy issues and challenges related to infrastructure development and integration in Africa. Our findings show that infrastructure does improve trade, productivity, and innovation in sub-Saharan Africa. Specifically, the sector with the greatest multiplier effect on economic outcomes is ICT, followed by the transport, electricity, and water sectors. This ranking informs our recommendation that infrastructure integration and development in Africa should be prioritized according to the ranking of their multiplier effects on the rest of the economy. Furthermore, our findings show that infrastructure has had the strongest impact on economic outcomes in the SADC region, which makes SADC a type of flying-geese leader for the other regional economic communities.

Keywords: *Infrastructure integration, cross-border infrastructure, trade, innovation, sub-Saharan Africa*

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Introduction

Infrastructure integration is essential to the realization of Africa's goal of accelerated economic transformation and wealth creation. It has become even more important in view of the recent wave of protectionism and populism around the world. Now, more than ever, the development and integration of infrastructure needs to be accelerated to enhance physical and virtual connectivity for rebalancing Africa's growth towards increased intraregional trade and productivity, and for shared prosperity in the region. To achieve the laudable goals that have been set for Africa by the African Union, the African Development Bank (the High-5 priorities), the United Nations (Sustainable Development Goals) and the goals of the various regional economic communities in Africa, infrastructure development and integration needs to be fast-tracked to promote cross-border trade and investment, improve countries productivity and innovation, and raise regional output and competitiveness. In particular, it is important that regional integration is fast-tracked through better and improved interconnectedness of road, railway, airport, seaport, energy and telecommunications networks.

Although there is general agreement, and with evidence too, that infrastructure integration could allow networks to become smarter, more cost-efficient and guarantee future prosperity for Africa (see Ajakaiye and Ncube, 2010; Ayogu, 2007; Kodongo and Ojah, 2016; Ncube, Faye and Verdier-Chouchane, 2015; Ndulu, 2006), yet it is not clear what infrastructure integration precisely means for sub-Saharan Africa, how to go about it, nor the extent to which it could facilitate trade, innovation, and growth. To better understand what infrastructure integration means, we need to first make a distinction between hard and soft infrastructure. The former refers to physical infrastructures or facilities that support the economy and society, such as transport, electricity, telecommunications and water utilities; while the latter covers non-tangible aspects that support the development and operation of hard infrastructure, such as policy, regulatory governance, institutional frameworks, and mechanisms (Bhattacharyay, 2010).

Regional infrastructure integration, on the other hand, involves executing projects that require physical construction works and coordination of policies or procedures spanning two or more neighbouring countries; and implementing national infrastructure projects that have a significant cross-border impact. Typical examples are projects whose planning and implementation involve cooperation and coordination with one or more countries, projects that seek to stimulate significant amounts of regional trade, and projects that are designed to connect to the network of a neighbouring or third country. By this definition, it means that a large portion of national infrastructure, such as airports, roads, seaports, telecommunications, and railway can be considered as cross-border infrastructure since they constitute the building blocks for infrastructure integration. We focus on infrastructure integration for the two categories of infrastructure: integration of physical amenities and integration of governance amenities.

While African member states have been making steady progress towards stronger economic, financial, monetary and, to some extent, political integration (see AfDB, 2016e; UNECA, 2015), it appears that these efforts and progress seem to be having only a marginal impact in promoting regional integration and intra-regional trade and

growth (see Ndulu, 2006). One of the most likely explanations for this marginal impact could be because the progress has not been accompanied by commensurate efforts towards alleviating and integrating both physical (or hard) and institutional (or soft) infrastructure in the region. Although there have been some recent improvements in Africa's infrastructure connectivity, these improvements seem to have progressed in a rather fragmented manner, concentrating particularly within countries and hardly connecting between countries; moreover, the quality of infrastructure in the region still remains at the bottom of global rankings (see Calderon and Serven, 2008; Dethier, 2015; Kodongo and Ojah, 2016). Consequently, the level of integration in Africa has mostly been impeded by a range of non-tariff and regulatory barriers, such as infrastructure.

The aim of this paper is to assess the extent to which infrastructure development and integration can act as a catalyst for trade, productivity growth and income improvements in Africa; and to examine some important issues and challenges related to infrastructure development and integration in Africa. The paper uses both the positive approach of economic analysis—that is, analysis that is based on testable facts through, for example, regression analysis—and the normative approaches to analysis—that is, analysis that is based on subjective values, anecdotal evidence and experience—to examine the problem. Furthermore, we attempt to shed light on the impact of different dimensions of infrastructure in the regional economic communities (RECs). Our approach is unique in a number of ways. First, by examining the cross-regional variations in the impact of infrastructure, disaggregated according to four dimensions, we are able to isolate the impact of specific infrastructure dimensions on economic outcomes in Africa, which helps to set priorities on which infrastructure dimension to fast-track integration. Also, by benchmarking infrastructure impacts based on RECs, we are able to identify the RECs where infrastructure is working best, so that other latecomer regions can perhaps, emulate the governance and operational strategies of the regions with the most significant impact of regional integration. The findings particularly help identify specific areas to focus on in the different subregions and the region-specific bottlenecks that require urgent attention for infrastructure integration.

The remainder of the paper is organized as follows. In Section 2, we conduct a concise diagnostics of Africa's infrastructure endowment and the outlook for Africa's infrastructure. Section 3 asks the question: has infrastructure played its functional role in Africa? It examines three categorizations of infrastructure role: the Keynesian stimulus, the Ricardian stimulus, and the Neoclassical stimulus. Section 4 examines some issues in Africa's infrastructure integration, such as the key challenges, whether it should be market-driven or institutions-driven, and a new paradigm for infrastructure integration—inverse infrastructure. Section 5 contains the empirical analysis of the paper starting from the data, to the econometric model and a discussion of the key results. Section 6 concludes the paper.

Africa's infrastructure diagnostics and prognosis

A thorough diagnostics of the state of Africa's infrastructure and a prognosis of the prospects and outlook for the next three decades was the result of a fruitful collaboration between the African Union Commission (AUC), the African Development Bank (AfDB) and the United Nations Economic Commission for Africa (UNECA), which culminated in the masterplan for Africa's infrastructure development—the Programme for Infrastructure Development in Africa (PIDA) (see AfDB, 2016a,b,c,d; UNECA, 2015). cursory benchmarking of Africa's infrastructure with other regions shows that the state of Africa's infrastructure is abysmal. For example, in Table 1, we present statistics on Africa's infrastructure endowment in relation to other regions of the world. This observation is consistent across all four sectors of infrastructure. The greatest gaps are in the energy sector, where SSA power generation capacity is about half the capacity in the second-worst region in the world—South Asia, and about one-tenth of the generation capacity in Europe and Central Asia. The situation for ICT is, however, less severe. For example, in 2016, the density of Internet connections per 100 persons was 20% in SSA and 26% in South Asia only six percentage points higher, and 73% for Europe, the highest region, which is about three times the level in Africa.

The SSA averages presented in Table 1 mask the significant variation in infrastructure endowment within the African region. To see these intra-regional variations, we present the infrastructure endowment benchmarking for four Regional Economic Communities (REC): ECOWAS, EAC, SADC, and CEMAC done in a World Bank study by Yepes, Pierce and Foster (2009) in Table 2. The statistics show that SADC region is significantly more endowed than other regions in all sectors of infrastructure by several multiples. As for the other three regions, there is no consistent pattern for ranking the endowment stocks, some regions are doing better than others in certain sectors while others are better off in other sectors. For example, although the EAC region has the lowest levels of endowment in transport and energy infrastructure, it has the second highest endowment in water and sanitation infrastructure in terms of access.

Table 1: Infrastructure endowments by world regions

Dimensions of Infrastructure and Indicators	SSA	South Asia	EAP	ECA	LAC	MNA
Transport						
Density of paved road network (km/1,000 km ² , 2001)	49	149	59	335	418	482
Density of paved road network (km/1,000 arable km ² , 2001)	1,087	675	588	1,208	4,826	6,890
Density of total road network (km/1,000 km ² , 2001)	152	306	237	576	740	599
Density of total road network (km/1,000 arable km ² , 2001)	2,558	1,400	5,385	2,160	8,850	30,319
ICT						
Density of fixed-line telephones (subscribers per 100 people, 2016)	1	1.83	15.57	32.38	16.89	15.17
Density of mobile telephones (subscribers per 100 people, 2016)	74.37	84.83	110	125.11	109	111.24
Density of Internet users (subscribers per 100 people, 2016)	20	26.47	53	73.91	56	47.62
Energy						
Electrical generating capacity (MW per 1 million people, 2003)	70	154	231	970	464	496
Access to electricity (% of population, 2014)	37.44	80.06	97	100	97	96.99
Water and sanitation						
Water (% of households with access, 2015)	57.54	88.16	94	98.1	96	92.92
Sanitation (% of households with access, 2015)	28.26	46.5	77	96.03	86	89.32

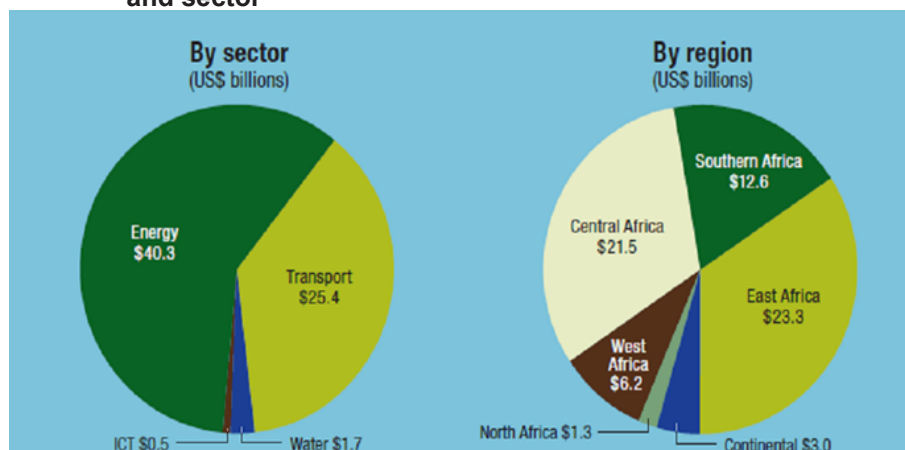
Note: SSA—sub-Saharan Africa, EAP—East Asia and the Pacific, ECA—Europe and Central Asia, LAC—Latin America and the Caribbean, MNA—Middle East and North Africa. The main source of the data is World Bank, World Development Indicators (WDI) and studies in the Africa Infrastructure Country Diagnostics (AICD), especially Foster and Briceno-Garmendia (2010); Yepes et al (2009)

Table 2: Infrastructure endowments by SSA regional economic communities

	ECOWAS	EAC	SADC	CEMAC
Transport				
Density of paved road network (km/1,000 km ²)	38	8	92	41
Density of paved road network (km/1,000 arable km ²)	301	93	3,636	416
Density of total road network (km/1,000 km ²)	144	105	214	132
Density of total road network (km/1,000 arable km ²)	1,279	1286	6,164	1,790
ICT				
Density of fixed-line telephones (subscribers per 1,000 people)	28	6	74	13
Density of mobile telephones (subscribers per 1,000 people)	72	54	180	74
Density of Internet connections (subscribers per 100 people)	2.4	2.1	6	1.7
Energy				
Electrical generating capacity (MW per 1 million people)	31	24	175	44
Access to electricity (% of households with access)	18	7	21	18
Water and Sanitation				
Water (% of households with access)	63	64	71	58
Sanitation (% of households with access)	35	45	43	28

Note: ECOWAS—Economic Community of West African States, EAC—East African Community, SADC—Southern African Development Commission, CEMAC—Central African Economic and Monetary Community. The main source of the data is from World Bank, World Development Indicators (WDI) and studies in the Africa Infrastructure Country Diagnostics (AICD), especially Foster and Briceno-Garmendia (2010); Yepes et al (2009)

Figure 1: Estimated cost of bridging infrastructure gaps—by region and sector

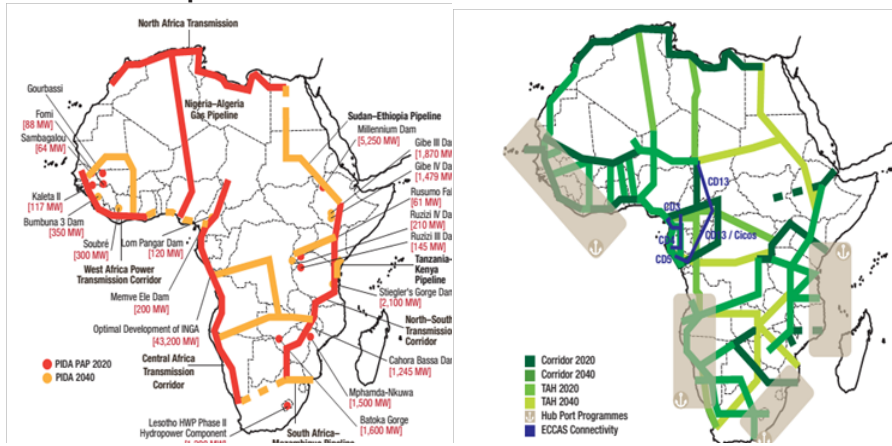


Source: AfDB (2016d)

Although infrastructure endowments are relatively low for the SSA region, it is not altogether a doom-doom situation. The reason is that investments in infrastructure in the region have been shown to yield the highest levels of returns comparatively. Recently, private investors that have ventured into the telecommunications and energy sectors have reported significant value addition in balance sheet terms (see AfDB, 2016b). To close these infrastructure gaps, the joint consultation by the AfDB, AUC, and UNECA which produced the Programme for Infrastructure Development in Africa, arrived at an estimated financial investment requirement of US\$360 billion for the 2040 outlook. Recognizing that this is an enormous amount of resource to mobilize, the Priority Action Plan (PAP) is a more compact and practical plan to bridge the infrastructure gap in Africa between 2012 and 2020 with an estimated capital cost of US\$67.9 billion, which requires about US\$7.5 billion annually for the first decade (see AfDB, 2016c). Of this total investment requirement, energy and transportation projects represent about 95% of the total cost. The breakdown of the proposed investment requirement that would alleviate infrastructure gaps in Africa by sector and regional blocs is depicted in Figure 1

The infrastructure integration masterplan for Africa in the PIDA document highlights the proposed networks for infrastructure interconnectivity throughout Africa, detailing the proposed optimal path for interconnecting infrastructure through all the subregional blocs and countries in the continent. The plans for infrastructure integration in the four major infrastructure sectors with a significant deficit for Africa are depicted in Figures 2 to 3. In particular, the energy integration plan in Figure 2a focuses on how to link major hydroelectric projects into a power pool to meet the deficit supply and satisfy the forecast increase in demand for electricity in the region. It also seeks to connect regional petroleum and gas pipelines. The objective of the transportation integration master plan in Figure 2b is to connect the major production and consumption centres, to open up landlocked countries, and define the best hubs for ports and railways in order to improve intra-regional trade.

Figure 2: Masterplan for infrastructure integration in Africa: Energy and transport

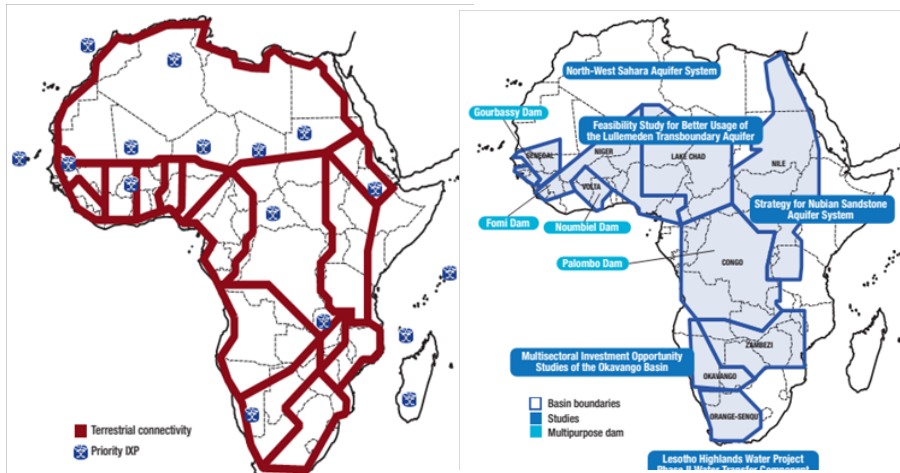


Panel A: Network for electricity interconnectivity;

Panel B: Network for transport integration

Source: AfDB (2016c)

Figure 3: Masterplan for infrastructure integration in Africa: ICT and water



Panel A: Network for ICT infrastructure;

Panel B: Network for water connection

Source: AfDB (2016c)

In Figure 3b, we plot the infrastructure integration masterplan for water infrastructure, which seeks to, among other things, develop dams that have multi-purpose services and are capable of providing irrigation to cushion drought effects and boost food sufficiency. Lastly, Figure 3a depicts the masterplan for the integration of information and communications technology across the region. The objective is to fast-track and

complete the land fibre-optic infrastructure in the region, and install Internet exchange points in countries without them, and also connecting countries to at least two different submarine cables to take advantage of speed and expanded capacity.

Has infrastructure played its catalytic role in Africa?

To assess whether infrastructure has played its functional roles in Africa, it is instructive to classify infrastructure according to three functional economic roles it plays in an economy: the Keynesian stimulus, the Ricardian stimulus, and the Neoclassical stimulus (Roland-Holst, 2009).

Income and employment roles: the Keynesian stimulus

The Keynesian stimulus of infrastructure is the role that infrastructure development and investment plays in boosting aggregate demand. In particular, it is related to the multiplier effect that infrastructure investment creates on income, output, and employment. It also relates to how infrastructure investments can be used as a tool for conducting countercyclical economic policies—to boost economic activity during a downturn and to slow down economic activity during a boom.

Figure 4: Infrastructure development and GDP per capita in Africa

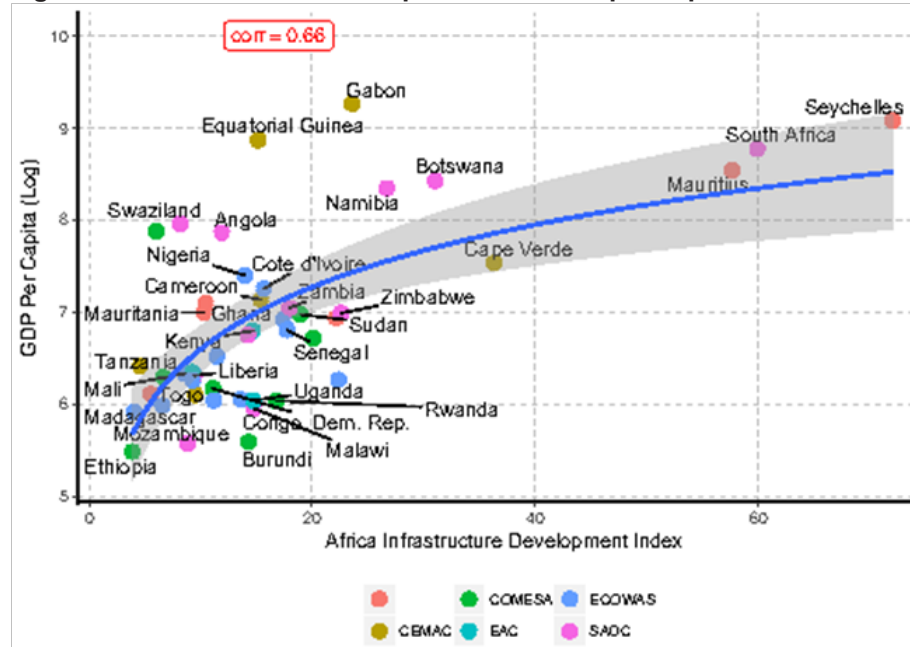
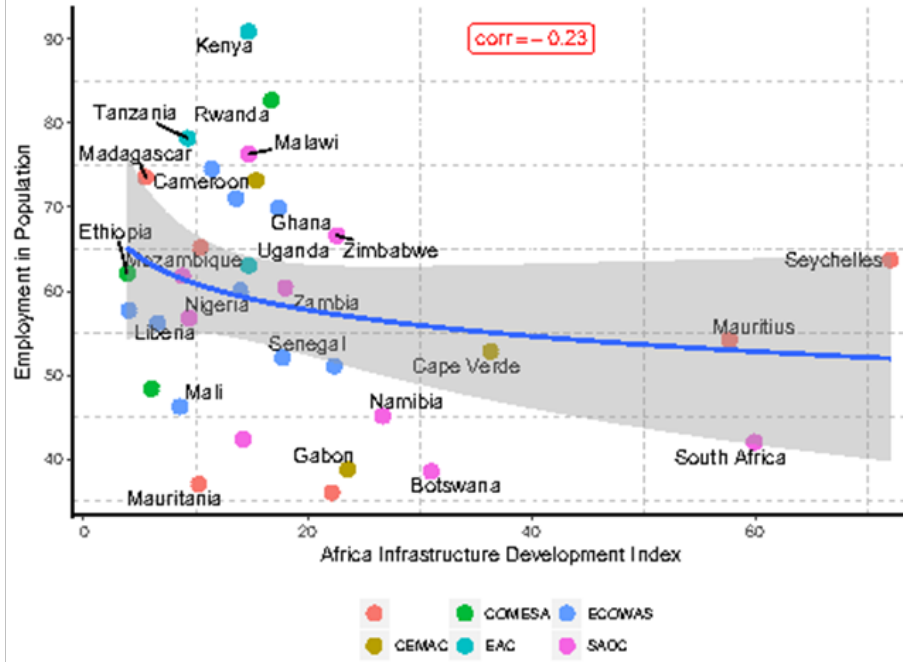


Figure 5: Infrastructure development and employment levels in Africa



In Figure 4 and Figure 5, we plot simple scatter points between our measure of infrastructure, the Africa Infrastructure Development Index (AIDI), and GDP per capita and employment levels along with their unconditional correlations coefficients, respectively. Figure 5 shows clearly that there is a positive relationship between the aggregate level of infrastructure development and the level of GDP per capita; the correlation is high at 0.66% and statistically significant too. Thus, infrastructure development is clearly associated with higher levels of GDP per capita. To the contrary, we do not necessarily observe the employment stimulating effect of infrastructure by plotting a scatter of infrastructure and employment levels. Rather, what we seem to observe in Figure 5 is that the relationship between infrastructure development and employment seems to be negative, or at the least neutral. But because data on employment levels in Africa are unreliable, we are wary of attempting to provide an explanation for this observed pattern. We would re-examine this relationship in a subsequent section using conditional regression analysis.

Trade and trade facilitation roles: the Ricardian stimulus

The Ricardian stimulus role of infrastructure refers to its functional role in improving comparative advantage by reducing the distribution cost of good and services through, for example, making transport and ICT processes more efficient. These reductions in distribution costs lead to reductions in trade margins which work to increase competitiveness, intensify comparative advantage and thus boosting both domestic and international trade.

The main advantage of the Ricardian stimulus is that it helps to increase market participation, expanding the profitable horizon of firms at the extensive and intensive margins. This is particularly the case for many countries in central Africa that are landlocked and other African countries that have significant rural poor communities, where distribution costs are an important source of price distortion that significantly limits market access and reduces economic efficiency. Not only does the Ricardian stimulus role of infrastructure help increase participation, it also confers growth externalities across the integrated networks that are established. For example, the parallel emergence of light manufacturing in South Africa and Ethiopia are able to confer significant growth externalities across the Southern African and Eastern African regions, respectively.

One of the structural effects that infrastructure exerts on the economy through the reduction of margins is the intensification of comparative advantage. Following classical trade theory, price differences create incentives for specialization, international, and inter-regional trade. High distribution margins work to undermine specialization and trade. To see this, consider two prices PH and PF for a homogeneous good from two different locations (home and abroad). Given that trade margins are generally symmetric, the ratio of the home and foreign prices, with margins M taken into account and evaluated as it rises without limit is thus;

$$\frac{PH+\mathcal{M}}{PH+\mathcal{M}} \xrightarrow{\mathcal{M} \rightarrow \infty} \quad (1)$$

The implication is that the higher the margin, the lower the potential to take advantage of comparative advantage and specialization between markets in a region. Moreover, falling trade margins that result from infrastructure improvements also work to improve international terms of trade through a double-virtue causation. Consider domestic producer price of an export $PE = PWE - \mathcal{M}$, where PWE is the international price of the export good and M is the margin that must be deducted from the exporter's net revenue. Symmetrically, the domestic purchaser price of an import takes a similar form, $PM = PWM + \mathcal{M}$, where PWE is the corresponding international price of the imported good and \mathcal{M} is the margin that must be added to the purchaser price.

$$\mathcal{M} \downarrow \Rightarrow \frac{PWE-\mathcal{M}}{P_D} \uparrow, \quad \text{and} \quad \frac{PWM+\mathcal{M}}{P_D} \downarrow \quad (2)$$

It can be observed from the expression in Equation 2 that a falling margin induces an improvement in the terms of trade PE / PM . In particular, the double-virtue of falling margins emanate from the higher net revenue for the exporter and lower purchaser prices for the importer, thereby sharpening the incentive for trade from both ends.

Figure 6: Infrastructure development and trade in Africa

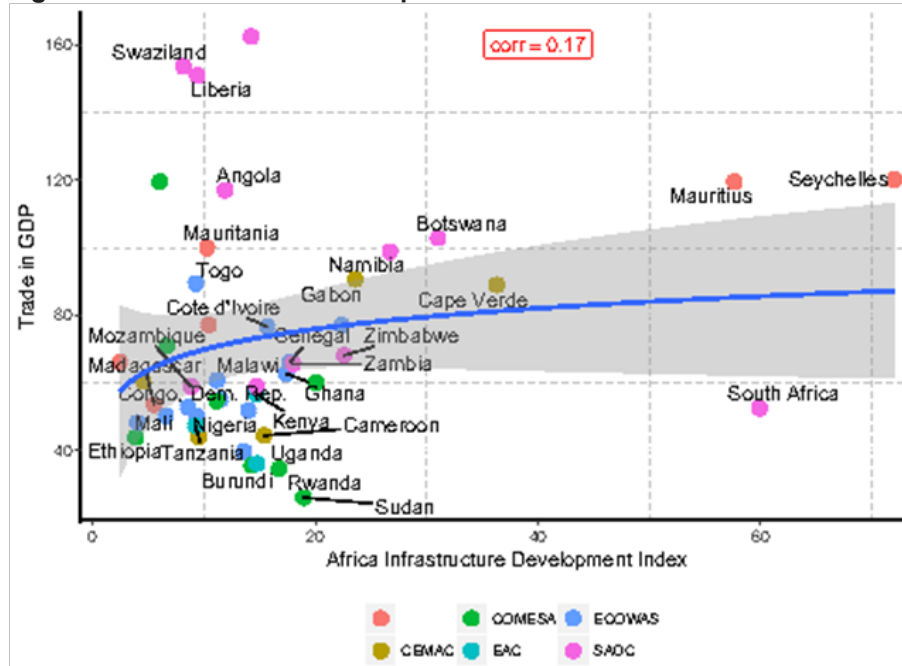
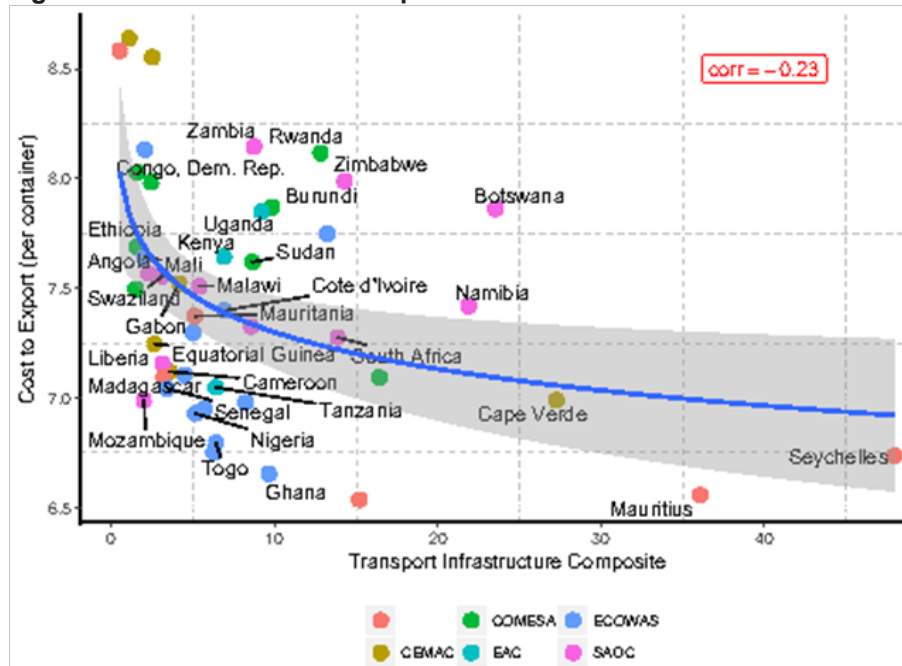


Figure 7: Infrastructure development and trade facilitation in Africa



We now turn to the stylized evidence on the Ricardian stimulus of infrastructure in Africa. In Figure 6, we show a plot of the scatter points of total trade in GDP and the Africa Infrastructure Development Index. The unconditional pattern observed in the figure conforms to the theoretical expectation; that is, infrastructure development, by reducing trade margins, helps to boost trade—thus, there is a positive association between infrastructure development and trade. In Figure 7, we investigate the direct, first-order Ricardian impact of infrastructure development on trade margins using the average cost to export a container in each African country. The pattern again is consistent with theory; that is, improvements in transport infrastructure is associated with reductions in distribution margins (with a correlation coefficient of 0.23), and specifically, the cost to export a container.

Productivity and innovation roles: the Neoclassical stimulus

Modern neoclassical growth theories recognize the importance of infrastructure's contribution to increasing productivity. This often works through the diffusion of technology embodied in transport, communication, and distribution systems that help increase the efficiency of the search and matching stages of trade and the logistical requirements shipment. The neoclassical functional role of infrastructure can be understood from the ideals of endogenous growth theory. That is, factors and conditions that when present in an economy help facilitate growth in and of themselves. Infrastructure is one of those factors; it also helps other endogenous factors, including productivity enhancements, innovation, technology diffusion, information diffusion supply chain articulation, human capital development, and other network externalities (see Roland-Holst, 2009). These are considered among the most important economic contributions of infrastructure.

Figure 8: Infrastructure development and TFP growth in Africa

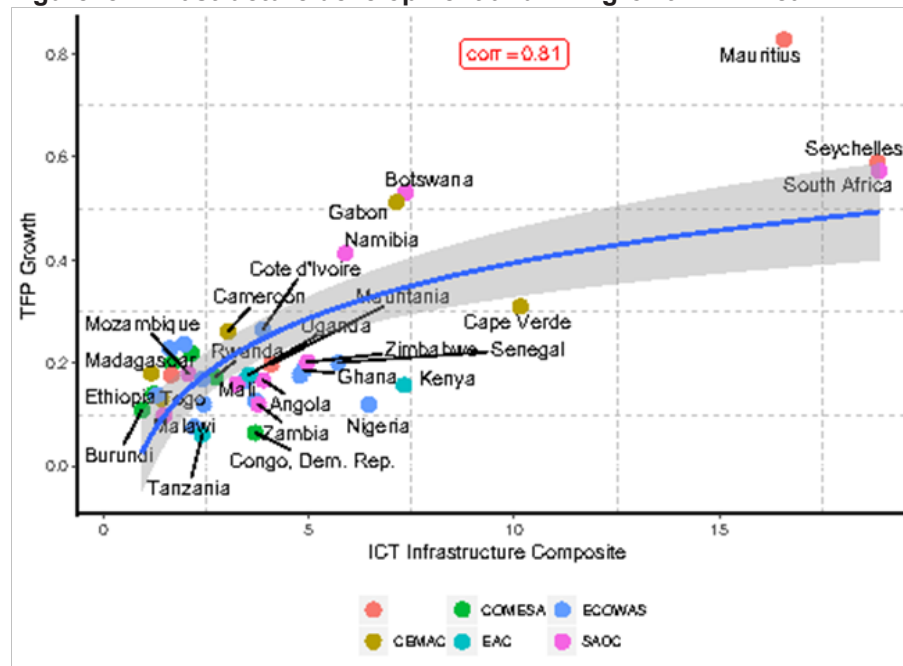
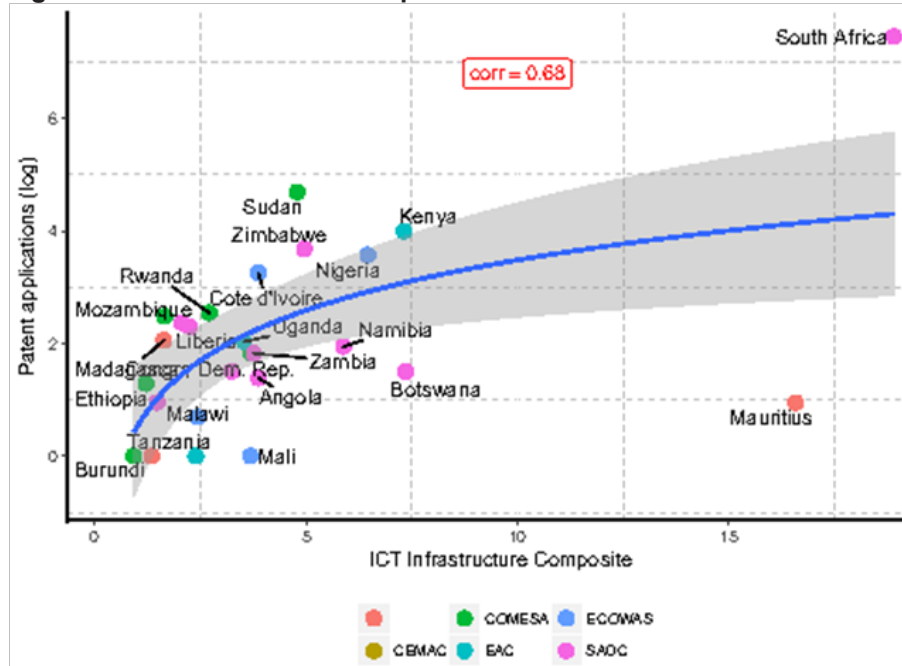


Figure 9: Infrastructure development and innovation in Africa



To examine the stylized facts on infrastructure's role as a neoclassical stimulus, we first plot a scatter chart of the aggregate Africa Infrastructure Development Index against UNIDO's total factor productivity growth for African countries (Figure 8). Although there are a few outliers like South Africa, Mauritius, and Seychelles which tend to drive the pattern of the relationship, there is generally a positive association between ICT infrastructure development and growth in total factor productivity. This pattern of relationship is also very similar to the case of infrastructure and innovation, measured by the number of patent applications by residents, plotted in Figure 9. With regard to patent applications, South Africa is an outlier in Africa—it has the highest level of ICT composite infrastructure and also the highest number of patents applications in Africa. As predicted by the neoclassical theory, infrastructure development is positively associated with innovation; the degree of association is 0.68% for sub-Saharan Africa.

Some issues in Africa's infrastructure integration

Catalyzing infrastructure integration in Africa would involve asking some difficult questions, making some difficult choices, and committing to follow through the choices for as long as is required to achieve the targets. First, there are endogenous conflicts that need to be resolved in order to successfully integrate infrastructure across regions in Africa. The main conflict is related to distributional equity. Building regional and subregional infrastructure involves asymmetric distributional costs and benefits to countries in the region. To understand the extent of these asymmetries, it is important to conduct an objective assessment of the economic (and not only financial) costs, benefits, and externalities arising from cross-border infrastructure projects. From the inception

of any regional infrastructure project, a mechanism that stipulates the distribution of costs and benefits across countries can be put in place. This pre-emptive measure would help minimize conflicts and incentivize countries to participate in regional infrastructure projects that can exploit economies of scale and generate externalities that would dominate the distributional disparities in financial and technical contributions by the affected countries. The increasing complexities involved in deploying regional infrastructure continues to affirm the vital role that neutral credible institutions, such as the African Development Bank, can play in officiating, coordinating, and implementing regional and cross-country infrastructure projects in Africa.

Key challenges to Africa's infrastructure integration

Coupled with the challenges that national infrastructure development has to surmount, supranational infrastructure development and integration in Africa faces even more difficult challenges. We highlight a few of them below.

1. Geographical and topographical diversity, which often implies significant differences in the appropriate types and specifications of infrastructure for different areas.
2. Different initial conditions. Different countries are at different levels of infrastructure and economic development.
3. Lack of unifying standards in regulatory policies, legal frameworks, and administrative procedures.
4. Lack of proper assessment of financial implications of cross-border projects; and weak capital markets that could be used to mobilize financing for infrastructure projects, especially by private sector participation through public-private partnerships.
5. Lack of adequate cost-benefit analysis that would show the potential benefits and costs for participating countries. For example, cost-benefit analysis that would show estimates of changes in trade flows, transport costs, tourism, standard of living, agglomeration effects, scale economies and labour mobility.
6. Lack of proper assessment of negative externalities and environmental impacts, such as the effect of greenhouse gases, displacement of local communities, forced migration, human trafficking, communicable diseases, smuggling, pollution, etc.
7. Need for effective coordination and consultation among various stakeholders at the local, regional, national, and supranational levels.

Addressing these challenges would require, among other things, concerted effort towards the creation of an enabling environment for cross-border infrastructure investments; effective coordination with a wide range of stakeholders—central governments, state governments, regional government, private sector and civil society; identification and prioritization of commercially viable projects; harmonization and standardization of legal frameworks; and equitable distribution of costs and benefits among participating countries.

Infrastructure integration: market- or institution-led approach?

One of the most important questions to policymakers on regional integration is how should infrastructure integration in Africa be advanced: should it be through the market-led approach or the institution-led approach. We favour a combination of the

two approaches, although there are several reasons why it should be more appropriate to pursue an institution-led approach for infrastructure integration in Africa at the moment. First, intraregional trade in Africa is low. Thus a market-led approach to infrastructure integration in Africa would likewise be low and lacklustre because the required volumes of trade that should make economic sense to invest in regional infrastructure do not yet exist. Second, there is significant heterogeneity in the economic structure of many African countries, from resource-intensive economies to agriculture-intensive economics, and to light-manufacturing, it is difficult to have a coincidence of economic fundamentals that are favourable for infrastructure investments in all kinds of economies. Cultural and colonial historical differences also make it difficult to pursue a market-based approach to infrastructure integration.

Thus, we recommend that the growing political momentum towards regional integration in Africa should be complemented with transnational institution building for infrastructure integration. And although political cooperation (as we have seen in recent times among African leaders) is not always a precondition for progress in regional integration (McKay, Armengol and Pineau, 2004), it provides the platform for advancing infrastructure integration based on transnational institution building. After a proper institution-led framework has been established, then a continuously updated mix of a market-based and institution-based approach could be used to further drive infrastructure integration in Africa. The idea is to pursue a top-down, government-led and market-creating approach, together with a bottom-up, market-driven approach with a multi-paced speed and with multi-track pathways. The role of development partners such as the AfDB, UNECA and the RECs is to ensure coordination and cooperation of its members' infrastructure projects; harness shared resources, such as capital, labour, and technology; harmonize cross-border rules and regulations; and facilitate the exchange of institutional and policy best practices (Bhattacharyay, 2010).

Inverse infrastructure for infrastructure integration

The paradigm of infrastructure provision is evolving from that of elephant-sized, large-scale projects to that of mushroom-sized small-scale projects that are not owned by governments or large businesses nor centrally controlled by government utility companies in a top-down fashion as, for example, electricity and telecommunications infrastructure have been managed for centuries. Instead, the new paradigm is for individuals and small businesses to own and manage mushroom-sized infrastructure, which would then metamorphose into local, regional and even global infrastructure. Examples of this kind of infrastructure are Google, Wikipedia, networks of privately-owned solar energy systems, and citywide Wi-Fi networks. This self-organizing, user-driven, decentralized infrastructure is what is known as inverse infrastructure (Egyedi, Mehos and Vree, 2009).

These new inverse infrastructure develops independently and outside the realm of centralized control. The key feature of the inverse pattern is that it is being marked by bottom-up investments made by individuals and small firms rather than top-down government funding. What is salient, however, about inverse infrastructure is that they often develop as an afterthought—that is, as an unplanned by-product of an investment or process that is ongoing. In other words, this method of infrastructure integration is not pre-designed as one would have in, for example, GSM mobile telephony or the Internet which follow a predefined specification or blueprint. Although this process of evolution does not imply that inverse infrastructure and its integration thereof are without direction,

the point is that, given their developmental characteristics, their outcome is less predictable than that of designed infrastructure (Egyedi, Mehos and Vree, 2009). It is now the role of policymakers to identify potential investments and activities that are being performed by individuals and small businesses, which can be supported to develop in a decentralized, self-serving, user-driven manner, and not necessarily to invert it to the typical large-scale government controlled model of infrastructure provision.

Infrastructure integration via incentivization

The United States is often presented as the typical example of a country that drives infrastructure integration through the incentivizing method. This method involves providing the supranational macro environment to enable countries, states, and cities to integrate their infrastructure. These kinds of incentives could arise from financial concessions, on, for example, loans from the AfDB or the World Bank, for infrastructure projects that have an element of cross-border integration. The point is that the incentives, whether financial, administrative or technical, arise from a macro level and gets taken up at the micro level, like a top-down approach. That is, creating incentives for infrastructure integration at a region-wide level (for example, from the African Union or AfDB) to a country-wide and state-wide uptake.

Using the incentivizing US model, infrastructure integration management can be operated as a combination of differing policies, structures and ownership models, reflecting the various country idiosyncrasies, demography and ideologies. Africa Public Utility Commissions (APUC) could be set up and used to govern cross-border infrastructure. The role of the Africa Public Utility Commissions would include to provide regulatory functions for inter-regional infrastructure markets and offer social oversight to keep consumer prices low and prevent unhealthy monopolistic competition within the infrastructure markets.

Infrastructure integration via coordination

The approach that Germany has used to integrate its infrastructure and that of Europe at large is often regarded as the coordination method (McLean, 2017). Following the European model, this method would involve integrating infrastructure through interactions between governments at the pan-African level, country level, and local level. This framework provides a framing for coordinating regional infrastructure development through vertical and horizontal interaction by all stakeholders. The idea is to have a coordinated mix of both appropriately regulated public and private providers of regional infrastructure in a free competitive market. Following this German pragmatic approach means that infrastructure integration in Africa should not lean purely toward competitive private markets or to regulated public sector driven monopolies, but on a centrally planned network that is coordinated at the sub-national and country levels.

Quantifying the impact of infrastructure

Data and descriptive statistics

Our main measure of infrastructure is the Africa Infrastructure Development Index (AIDI) from the African Development Bank. This database is particularly preferred because it is comprehensive and assembles data that is usually not publicly available on

different components of infrastructure in Africa. The Africa Infrastructure Development Index is based on four major components: (i) the Transport composite index, (ii) the Electricity composite index, (iii) the ICT composite index, and (iv) the Water and Sanitation composite index. These composite indexes, in turn, are based on nine different indicators and two sub-indicators. The AIDI series is available for all African countries from 2000 until 2018. To identify the specific infrastructure that has the most catalyzing effect on different economic outcomes, we also use the disaggregated component measures of infrastructure.

Although we experiment with all four components of aggregate infrastructure index, the transport and ICT composites are of particular interest to ascertain the effect of infrastructure on trade and productivity growth. The transport composite infrastructure index is a normalized weighted average of the total paved roads in kilometres per 10,000 inhabitants and the total road network in kilometres per square-kilometre of exploitable land area. The ICT composite is more robust, it is constructed from four indicators and two sub-indicators. The indicators are total phone subscription per 100 inhabitants (fixed and mobile cellular), the number of Internet users per 100 inhabitants, fixed (wired) broadband Internet subscribers per 100 inhabitants, and the international Internet bandwidth. The two sub-indicators are fixed-line telephone subscription (per cent of population) and mobile cellular subscription (per cent of population). The indexes are computed as the weighted average of the indicators based on the inverse of the standard deviation of each normalized component. The normalization ensures that the index takes values between 0 and 100, with 100 corresponding to the most developed state of infrastructure.

Data on total factor productivity expressed in relation to US productivity and its growth rate are retrieved from the UNIDO World Productivity Database (see Isaksson, 2009). Barro-type control variables such as initial income, primary enrolment and other variables are obtained from the World Bank, World Development Indicators. Other variables used in the analysis are discussed later.

Table 3 contains descriptive statistics for the main variables used in the analyses; the table shows the statistics for all 48 countries in sub-Saharan Africa. We report the means, standard deviations, minimum, maximum and number of observations for each variable. Two important facts emerge from the summary statistics. First, infrastructure development is significantly different across countries. For example, the average share of individuals in the population using the Internet is 3.98 across all countries, but the standard deviation is about double the average at 7.61, and the country with the maximum population of Internet users has 51.25% of the population using the Internet. A similar pattern is also observed for mobile cellular subscription and patent applications. Second, total factor productivity growth seems to be homogeneous across countries, sub-Saharan African countries TFP have been growing at an average rate of 0.23 with a standard deviation of 0.17.

Table 3: Descriptive statistics

	Mean	SD	Min	Max	Obs.
GDP per capita	1,787.93	2,669.39	115.79	20,333.94	1,560
Total Factor Productivity	0.55	2.84	-25.97	18.94	1,271
Trade Openness	76.65	50.46	6.32	531.74	1,484
TFP Growth	0.23	0.17	0.011	1.53	1,271
Africa Infrastructure Development Index	16.85	14.69	0.369	95.93	720
Transport Infrastructure Index	8.62	9.4	0.38	52.65	720
Electricity Infrastructure Index	7.18	15.06	0	93.56	720
ICT Infrastructure Index	4.39	8.61	0	71.59	720
Water and Sanitation Infrastructure Index	45.36	19.69	6.04	97.56	720
Gross Capital Formation	20.66	15.96	-2.42	219.07	1409
Cost to Export per Container	1,915.14	1,147.77	463	6,615.00	462
Individuals Using the Internet (% of population)	3.98	7.61	0	51.25	990
Mobile Cellular Subscriptions (per 100 people)	14.57	29	0	171.38	1,642
Patent Applications, Residents	273	851	1	5,134.00	244
Control of Corruption, WGI	-0.63	1	-1.87	1.22	846
Rule of Law, WGI	-0.71	1	-2.61	1.08	846

Note: The descriptive statistics are based on an unbalanced panel dataset. The variables with the most available data start at 1980 and those with the most recent data end at 2018.

Econometric model

Our empirical analysis is based on a simple econometric model that is represented in a general form thus:

$$Y_{it} = \alpha Y_{it-1} + \beta \text{Infra}_{it} + \mathbf{X}'_{it} \boldsymbol{\gamma} + \mu_t + \delta_i + e_{it} \quad (3)$$

where Y_{it} is the measure of the outcome variable—trade, innovation and per capita income—for country i in period t . Depending on the outcome variable, the lagged value is also included on the right-hand side to capture persistence and potentially mean-reverting dynamics (i.e., the tendency of the outcome variable to return to some equilibrium value for the country). The main variable of interest in the model is Infra_{it} , the measure of infrastructure at the aggregate or component levels. The parameter β , therefore, measures the causal effect of infrastructure on the outcome variables—trade, innovation, and income per capita. the vector \mathbf{X}_{it} it collects all other potential covariates.

Furthermore, δ_i denotes a full set of country-specific effect dummies depending on the estimation technique, and μ_t denotes a full set of time-fixed effect dummies that capture common shocks (or common trends) to the dependent variable; e_{it} is an error term, capturing all other omitted factors, with $E(e_i) = 0$ for all i and t .

Below, we present selected results from the estimation of the cross-sectional version of the model, which succinctly captures the average magnitude and pattern of the evidence. Results from the fully fleshed out econometric analysis are contained in a different version of the paper.

Infrastructure as a Keynesian catalyst: income and employment effects

We begin by showing results for the role that infrastructure plays as a Keynesian catalyst for regional integration in Table 4. The dependent variable in Table 4 is GDP per capita growth rate. In columns 1 to 5 of Table 4, we use different measures of infrastructure; first, the aggregate infrastructure index (AIDI), then we incrementally introduce the four different components of infrastructure, respectively. Note first that initial per capita GDP is negative in all regressions but not significant in the Water composite regression (column 5), which denotes convergence in many sub-Saharan African countries conditional on the other variables in the model (also see Ekpo and Chuku, 2017). All the different measures of infrastructure have a positive and statistically significant impact on GDP per capita growth, which illustrates the well-documented positive relationship between infrastructure and income per capita in Africa (see Calderon and Serven, 2010; Ndulu, 2006)

Although statistically significant, the effect of different dimensions of infrastructure on income per capita varies by components of infrastructure. The results in column 1 of Table 4 indicate that, overall, a one unit improvement in the aggregate infrastructure index would lead, on average, to a 0.104 improvement in per capita GDP growth. The positive effect of infrastructure on per capita GDP is strongest for the ICT composite with an estimated coefficient of 0.45 and is weakest for the Water composite with an estimated coefficient of 0.04. The control variables yield results that are consistent with theory and the empirical growth literature; primary enrolment, trade openness, and FDI are positive in all regressions, although they are not all statistically significant. Financial depth has a negative effect in all regressions, supporting the idea of the finance-following (and not leading) growth hypotheses in sub-Saharan Africa.

Table 4: Effect of infrastructure dimensions on GDP per capita growth

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = GDP per capita growth				
Initial income	-1.123***	-0.668	-1.471***	-1.173**	-0.624
	(0.435)	(0.430)	(0.433)	(0.521)	(0.432)
Aggregate infrastructure	0.104***				
	(0.034)				
Transport composite		0.090***			
		(0.035)			
ICT composite			0.458***		
			(0.115)		
Electricity composite				0.099***	
				(0.029)	
Water composite					0.041**
					(0.018)
Primary enrolment	0.001	0.001	0.007	0.005	-0.001
	(0.012)	(0.013)	(0.012)	(0.015)	(0.013)
Trade openness	0.031**	0.031*	0.031**	0.036**	0.030**
	(0.015)	(0.016)	(0.014)	(0.016)	(0.015)
FDI/GDP	0.049	0.034	0.062	0.028	0.044
	(0.149)	(0.169)	(0.135)	(0.138)	(0.169)
Financial depth	-0.039***	-0.023	-0.048***	-0.047***	-0.022
	(0.015)	(0.018)	(0.014)	(0.017)	(0.015)
Constant	5.440***	3.009	7.360***	6.497***	1.908
	(1.980)	(1.929)	(2.009)	(2.604)	(1.950)
Countries	44	44	44	44	44
R-squared	0.56	0.48	0.62	0.52	0.45

Notes: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1%, ** for 5%, and * for 10% levels respectively.

Table 5: Effect of infrastructure dimensions on employment generation

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = Employment in population				
Aggregate infrastructure	0.346*				
	(0.212)				
Transport composite		0.539***			
		(0.205)			
ICT composite			1.374		
			(0.905)		
Electricity composite				-0.081	
				(0.277)	
Water composite					0.129
					(0.147)
log GDP per capita	-9.908***	-9.510***	-10.607***	-5.322*	-7.571**
	(2.795)	(2.655)	(3.794)	(2.729)	(3.065)
Primary enrolment	0.280***	0.291***	0.294***	0.254**	0.256**
	(0.096)	(0.100)	(0.106)	(0.110)	(0.108)
Trade openness	-0.259***	-0.285***	-0.253***	-0.260***	-0.270***
	(0.083)	(0.069)	(0.087)	(0.084)	(0.096)
FDI/GDP	0.853	0.754	0.956	0.585	0.823
	(0.871)	(0.694)	(0.887)	(1.105)	(1.052)
Financial depth	-0.042	0.008	-0.068	0.049	0.005
	(0.107)	(0.076)	(0.110)	(0.127)	(0.100)
Inflation	-0.199	-0.585	0.062	-0.071	-0.128
	(1.483)	(1.535)	(1.605)	(1.402)	(1.401)
Constant	114.112***	113.076***	116.656***	89.878***	99.802***
	(15.408)	(13.491)	(19.398)	(16.007)	(17.064)
Countries	31	31	31	31	31
R-squared	0.54	0.59	0.54	0.48	0.50

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels respectively

Apart from their growth effect, which can be considered indirect, most infrastructure investments targeted at the regional, national or local levels often have employment creation as their primary goal. The direct multiplier effect of infrastructure from both employment generation and downstream use can often be substantial (see Roland-Holst, 2009). We present results for the effect of infrastructure and its components on the level of employment in population for the entire sample in Table 5.

The results show that the effect of infrastructure on employment generation is not as robust as its impact on per capita GDP. In particular, only the transport composite has a statistically positive effect on employment generation levels. This is true even at the 1% level (see column 2 of Table 5). On average, a one unit improvement in the transport composite index helps to improve employment in population by 0.53%. The sign on the electricity composite is negative, but since it is not significant, we do not discuss it further. Again, the control variables yield results that are consistent with theory and the empirical literature: primary enrolment is positive, the effect of inflation is negative but not significant, the other control variables such as trade openness and financial depth assume negative signs and are difficult to interpret, especially because the literature is inconclusive about their effects on employment.

Infrastructure as a Ricardian catalyst: Trade and trade facilitation effect

The results for the impact of infrastructure and its dimensions on total trade by African countries is presented in Table 6. The results show that apart from the water composite, aggregate infrastructure, transport infrastructure, ICT infrastructure and electricity infrastructure all work to enhance trade. The impact is not only statistically significant, it is also quantitatively significant. The infrastructure component with the strongest impact on trade is the ICT composite, followed by the transport composite. Specifically, the results imply that one unit improvement in the ICT infrastructure composite can lead, on average, to a 3.43% increase in total trade; and a one unit improvement in the transport infrastructure composite can lead, on average, to a 1.05% increase in total trade.

It does not come as a surprise that the impact of ICT on trade is stronger than that of transport; with globalization, businesses that hitherto required time and space to consummate transactions no longer have to meet physically or depend on time to do business. ICT infrastructure has helped to surmount these constraints because it facilitates the sharing of information and eliminates the barriers of time and distance required to trade, two factors that transport infrastructure has to deal with.

Table 6: Effect of infrastructure dimensions on total trade

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = Total trade				
Aggregate infrastructure	0.800***				
	(0.281)				
Transport composite		1.052**			
		(0.468)			
ICT composite			3.431***		
			(1.034)		
Electricity composite				0.664**	
				(0.304)	
Water composite					0.234
					(0.294)
Log GDP per capita	-4.832	-3.211	-6.900**	-5.252	-3.587
	(3.277)	(3.211)	(3.509)	(3.585)	(3.288)
Cost to export	-0.004	-0.004	-0.003	-0.004	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Diversification	0.264	0.273	0.153	0.601	0.647
	(0.569)	(0.616)	(0.557)	(0.504)	(0.593)
Financial depth	-0.194	-0.096	-0.222	-0.311*	-0.121
	(0.162)	(0.155)	(0.178)	(0.194)	(0.158)
Population density	-0.053	-0.055	-0.053	-0.024	-0.032
	(0.058)	(0.059)	(0.051)	(0.059)	(0.067)
Constant	170.582**	135.813*	220.239**	175.073*	124.780
	(86.389)	(82.232)	(93.141)	(94.449)	(85.332)
Countries	43	43	43	43	43
R-squared	0.78	0.77	0.72	0.78	0.74

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels respectively

Table 7: Effect of infrastructure dimensions on trade facilitation

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = Cost to export a container				
Aggregate infrastructure	-0.008*				
	(0.004)				
Transport composite		-0.011*			
		(0.006)			
ICT composite			-0.031**		
			(0.016)		
Electricity composite				0.001	
				(0.005)	
Water composite					-0.003
					(0.004)
Total trade	-0.200*	-0.202**	-0.192*	-0.210*	-0.200*
	(0.106)	(0.104)	(0.104)	(0.112)	(0.110)
Inflation	0.001***	0.001**	0.001***	0.000**	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Control of corruption	-0.003	0.018	0.002	-0.108	-0.052
	(0.152)	(0.165)	(0.148)	(0.145)	(0.136)
Financial depth	-0.002	-0.003*	-0.001	-0.004	-0.003
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Constant	8.431***	8.448***	8.389***	8.326***	8.451***
	(0.492)	(0.498)	(0.476)	(0.506)	(0.507)
Countries	44	44	44	44	44
R-squared	0.21	0.21	0.22	0.19	0.20

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1%, ** for 5%, and * for 10% levels respectively

Infrastructure investments serve as a trade facilitation mechanism by reducing the distribution margins of exporters, which then works to expand the profitable horizon of exporting firms and improve their competitiveness. Explicit treatments of infrastructure's role in trade facilitation are relatively few and not easy to synthesize into a general approach (Roland-Holst, 2009). We attempt to gauge the trade facilitation effect of infrastructure by measuring its impact on the cost of export per container. The results for the effect of infrastructure and its dimensions on trade facilitation are presented in Table 7. Aggregate infrastructure and three other dimensions of infrastructure are appropriately signed, that is better infrastructure reduces the cost to export. The only exception in terms of the sign of the impact is the electricity composite. Despite the negative sign of the infrastructure measures, it is only the coefficient for the ICT composite that is statistically significant. Specifically, a one unit improvement in ICT infrastructure could potentially lead to an average reduction in the cost of export per container of 0.03 units. ICT can particularly help reduce the cost of administrative fees, documents, customs clearance and inland transport required to export a container. Two of the control variables in the results for the effect of infrastructure on trade facilitation presented in Table 7 are worthy of note. First, trade volumes have a cost reduction effect on the cost of export. The coefficient on total trade in all the columns in cost of export are negative, although most of them are only weakly statistically significant (i.e., at the 5% level or 10% level). Second, inflation is important for explaining trade facilitation. Higher inflation rates imply higher effects on the cost to export, although the quantitative impact is relatively small at 0.001%.

Infrastructure as a neoclassical catalyst: productivity and innovation effects

Infrastructure's role as a neoclassical catalyst can be seen in terms of its presence as an "endogenous growth factor"; that is, those economic factors that when present in an economy, in themselves, facilitate growth. This catalytic role works through productivity enhancements, technology diffusion, innovation, and human capital development. The results for the effect of infrastructure and its dimensions on total factor productivity growth are presented in Table 8. Aggregate infrastructure index and the four composite measures of infrastructure all have a statistically significant and positive effect on total factor productivity growth.

The results in column 3 of Table 8 show that the ICT composite has the strongest effect on TFP growth for African economies. Specifically, a one unit improvement in the ICT infrastructure composite could potentially lead to a 0.02 improvement in TFP growth rate. The estimated coefficients of the control variables imply that trade openness is a particularly important driver of TFP growth, as the trade coefficients are both statistically and quantitatively significant in all regressions. For example, for the transport composite equation in column 2 of Table 8, a 1% improvement in the trade openness measure could potentially lead to improvements in Total Factor Productivity growth by 0.18 basis points.

Table 8: Effect of infrastructure dimensions on TFP growth

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = TFP growth				
Aggregate infrastructure	0.008***				
	(0.002)				
Transport composite		0.011***			
		(0.003)			
ICT composite			0.029***		
			(0.006)		
Electricity composite				0.006***	
				(0.002)	
Water composite					0.005***
					(0.001)
GDP growth	0.092	0.324*	-0.028	0.040	0.329***
	(0.136)	(0.168)	(0.184)	(0.174)	(0.128)
FDI/GDP	-0.024*	-0.027**	-0.019	-0.023	-0.008
	(0.013)	(0.013)	(0.012)	(0.015)	(0.013)
Inflation	-0.014	-0.005	-0.023*	-0.022*	-0.010
	(0.011)	(0.015)	(0.012)	(0.011)	(0.011)
Trade openness	0.167***	0.189***	0.162**	0.250**	0.154*
	(0.063)	(0.071)	(0.079)	(0.104)	(0.081)
Constant	-0.545**	-0.662**	-0.467	-0.752*	-0.709**
	(0.255)	(0.312)	(0.323)	(0.402)	(0.327)
Countries	24	24	24	24	24
R-squared	0.85	0.79	0.80	0.75	0.77

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels.

We also use patent applications by residents as a proxy for innovation. The results for the effect of infrastructure dimensions on innovation via patent applications are presented in Table 9.

Table 9: Effect of infrastructure dimensions on patent applications

	(1)	(2)	(3)	(4)	(5)
	Dependent variable = Patent applications				
Aggregate infrastructure	0.103***				
	(0.036)				
Transport composite		0.082			
		(0.083)			
ICT composite			0.359***		
			(0.114)		
Electricity composite				0.064***	
				(0.015)	
Water composite					0.043
					(0.032)
GDP growth	5.306**	8.668**	2.867	4.243*	7.446***
	(2.274)	(3.196)	(2.416)	(2.197)	(2.606)
FDI/GDP	0.428*	0.297	0.463**	0.189	0.325*
	(0.206)	(0.268)	(0.177)	(0.207)	(0.175)
Rule of law	-2.667***	-1.961	-1.952***	-1.781**	-1.785
	(0.922)	(1.487)	(0.656)	(0.797)	(1.085)
Inflation	-0.151	0.174	-0.133	0.012	0.064
	(0.276)	(0.328)	(0.217)	(0.294)	(0.347)
Trade openness	0.343	0.759	-0.563	0.674	0.427
	(0.814)	(0.935)	(0.822)	(1.037)	(0.744)
Constant	-4.787	-6.609	-0.103	-3.964	-5.744
	(3.661)	(4.601)	(3.280)	(4.311)	(3.858)
Countries	18	18	18	18	18
R-squared	0.72	0.52	0.75	0.73	0.58

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels.

The results show that apart from the aggregate measure of infrastructure, two other composite dimensions of infrastructure have positive and statistically significant effect

on innovation: the ICT composite and the electricity composite. On average, a one unit improvement in the electricity infrastructure could potentially boost patent applications by 0.06 points, while a one unit improvement in ICT infrastructure could potentially boost patent applications by 0.35 units.

The results presented from the stylized regression analysis show indeed that infrastructure has contributed to higher standards of living by boosting per capita income, stimulating employment, trade and innovation for many African countries. The results show that the single most important infrastructure composite that has the greatest multiplier effect on economic outcomes is the ICT sector, followed by the transport sector, the electricity sector, and lastly, the water sector. This observed pattern and ranking of the strength of effects inform our recommendation that infrastructure integration and development commitments in Africa should be prioritized according to the ranking of their multiplier effects: ICT first, transport second, electricity third and water fourth.

Where is infrastructure working best in Africa?

In this section, we endeavour to unbundle the regional differences in the impact of infrastructure on economic outcomes, identifying regional economic communities (RECs) that have above or below the average impact for the entire region. This strategy helps to identify regions that are lagging behind and hence require additional reforms and effort to boost the role of infrastructure on economic outcomes using the experience from the leading RECs in a flying-geese development type model. We achieve this by interacting the infrastructure variables with dummies for five regional economic blocs in sub-Saharan Africa: (i) Central African Economic and Monetary Community (CEMAC); (ii) Common Market for Eastern and Southern Africa (COMESA); (iii) East African Community (EAC); (iv) Economic Community of West African States (ECOWAS); (iv) Southern African Development Community (SADC).

The results for the effect of aggregate infrastructure composite (AIDI) on GDP per capita, trade, TFP growth, and patents are presented in Table 10. Column 1 contains the regional differentials in elasticities of aggregate infrastructure on per capita GDP. The coefficient for aggregate infrastructure is 0.103, which is the impact of aggregate infrastructure for the entire group of countries. The values for the interactions with the regional blocs is the difference in slope between the entire group and the specific regional group that infrastructure is being interacted with. The results show that on average, the marginal effect of infrastructure on per capita GDP growth is quantitatively stronger and statistically significant for EAC ($0.103 + 0.088 = 0.191$); quantitatively stronger but not statistically significant for CEMAC ($0.103 + 0.015 = 0.118$); and quantitatively stronger but not statistically significant for SADC too ($0.103 + 0.021 = 0.124$). In contrast, on average, the marginal impact of infrastructure on income is less than the overall regional impact for ECOWAS ($0.103 - 0.048 = 0.055$) and for COMESA ($0.103 - 0.002 = 0.101$).

Table 10: Regional differentials in the effect of AIDI on economic outcomes

	(1)	(2)	(3)	(4)
	Per capita GDP	Trade	TFP growth	Patents
Aggregate infrastructure	0.103***	0.438	0.009***	0.061
	(0.035)	(0.517)	(0.001)	(0.055)
EAC*Aggregate infrastructure	0.088**	-1.575	-0.002	-0.007
	(0.043)	(1.236)	(0.007)	(0.105)
ECOWAS *Aggregate infrastructure	-0.048	-1.472*	-0.008***	0.049
	(0.053)	(0.848)	(0.002)	(0.115)
CEMAC*Aggregate infrastructure	0.015	-0.267	0.001	-0.554
	(0.082)	(1.093)	(0.002)	(0.481)
COMESA*Aggregate infrastructure	-0.002	-0.686	-0.006*	-0.016
	(0.042)	(0.791)	(0.004)	(0.120)
SADC*Aggregate infrastructure	0.021	0.262	-0.002	0.042**
	(0.028)	(0.662)	(0.002)	(0.018)
Initial income	-1.122**			
	(0.563)			
Primary enrolment	-0.011			
	(0.017)			
Trade openness	0.035**		0.140**	1.718
	(0.016)		(0.060)	(1.353)
FDI/GDP	0.044		-0.028**	-0.068
	(0.146)		(0.012)	(0.472)
Financial depth	-0.039***	-0.279		
	(0.013)	(0.198)		
Log GDP		-3.106		
		(4.389)		

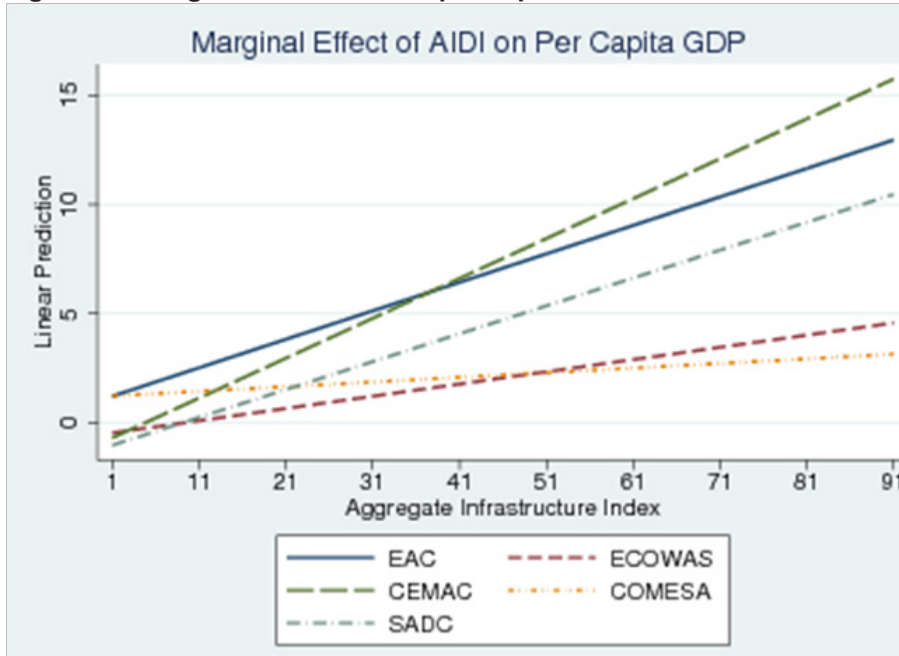
Table 10 Continued

	(1)	(2)	(3)	(4)
	Per capita GDP	Trade	TFP growth	Patents
Cost to export		-0.006		
		(0.004)		
Diversification		0.471		
		(0.702)		
Population density		-0.027		
		(0.069)		
GDP growth			0.091	4.667
			(0.114)	(3.896)
Inflation			-0.004	0.917
			(0.019)	(1.283)
Rule of law				-2.719*
				(1.327)
Constant	6.377**	141.775	-0.382*	-11.212
	(2.990)	(107.158)	(0.227)	(6.744)
Countries	44	43	24	18
R-squared	0.60	0.28	0.92	0.81

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels

The results from column 1 of Table 10 indicate that infrastructure integration has had the strongest impact on income in the SADC region, with a marginal elasticity of 0.124; followed by EAC, with an elasticity of 0.191; and CEMAC, with an elasticity of 0.118. The impact in CEMAC almost coincides with the sub-Saharan African regional effect of 0.103. More importantly, the results show that the impact of aggregate infrastructure is significantly below the overall regional average for ECOWAS. Therefore, urgent reforms and efforts need to focus on alleviating bottlenecks to infrastructure integration and impact in ECOWAS to enhance its multiplier effect on the rest of the economy. It is important to note, however, that although the joint test for statistical significance of all the interaction terms is robust, some of the coefficients for the individual interaction terms are not statistically significant. Hence, we caution that these results should be taken as indicative, rather than conclusive evidence. Regression results for the regional differential effect of the transport composite and the ICT composite measures of infrastructure are presented in the Appendix.

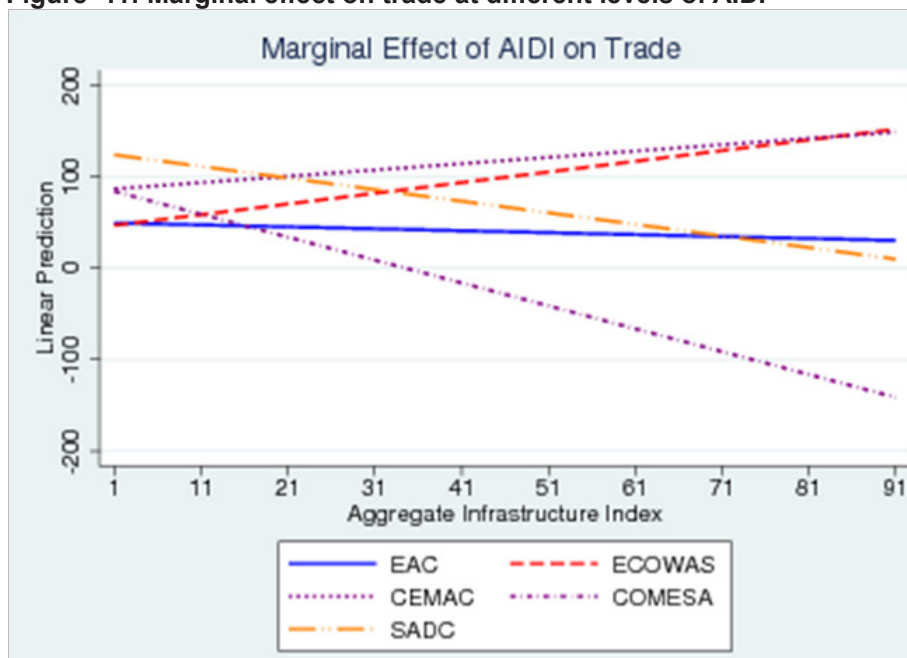
Figure 10: Marginal effect on GDP per capita at different levels of AIDI



Two major concerns emerge from the results presented in Table 10. First, because we are using an aggregate measure of infrastructure, it is possible that this aggregate measure is masking the specific marginal effects of different dimensions of infrastructure. Second, the results only show the nature of the relationship at the average level of the infrastructure index. What if the marginal effects are different for different levels of infrastructure development? For the sake of space, we are not able to present results that deal with the first issue, but we present results that show the marginal effect of infrastructure on RECs at different values and levels of infrastructure development.

Table 10 displays the marginal effect of aggregate infrastructure on per capita GDP growth for the five regional economic blocs. The pattern in the figure is consistent with the results reported in column 1 of Table 10. In particular, for values of aggregate infrastructure less than 21, the marginal effect for all five regions are closely clustered and slightly positive. But as soon as the level of infrastructure development starts to exceed 21 units, the differences in the marginal impact of infrastructure start to become obvious and significant. The slope of the marginal effect is steeper for EAC, CEMAC, and SADC; and it is seemingly flat, if not negative, for ECOWAS and COMESA.

Figure 11: Marginal effect on trade at different levels of AIDI



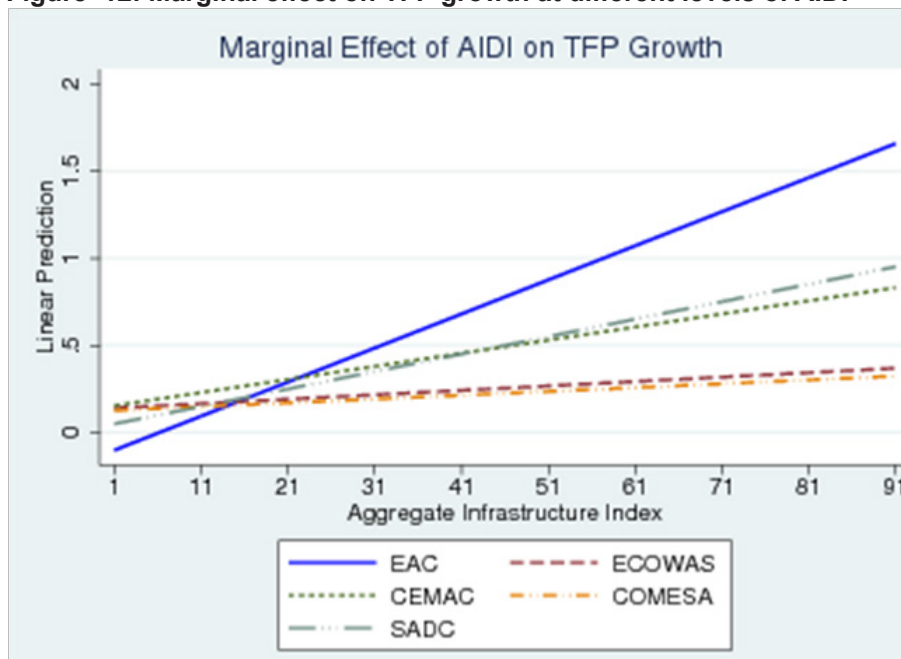
The marginal effect of infrastructure on trade, presented in Table 11, is quite revealing. The results show that the higher the level of infrastructure development, the higher the impact on trade in EAC, CEMAC, and ECOWAS regions. This increasing effect is not particularly observed for COMESA and SADC regions. Rather, and surprisingly too, the marginal effect of infrastructure on trade is significantly falling as the level of infrastructure increases. This result is difficult to explain, it may be that there are other dimensions of infrastructure that may be driving this relationship. For example, what is the state of the available “soft” infrastructure for trade in these regions—i.e., customs administration, documentation procedures, trade-related bureaucracies and governance structures, and so forth.

Conclusion

This paper set out to assess the extent to which infrastructure development and integration can act as a catalyst for trade, productivity growth, and income improvements in Africa; and to examine some important policy issues and challenges related to infrastructure development and integration in Africa. Our analysis has shown that infrastructure does improve trade, productivity, and innovation in sub-Saharan Africa. In particular, the results show that the single most important infrastructure composite that has the greatest multiplier effect on economic outcomes is the ICT sector, followed by the transport sector, the electricity sector, and lastly, the water sector. This observed pattern and ranking of the strength of effects lead us to recommend that infrastructure

integration and development commitments in Africa should be prioritized according to the ranking of their multiplier effects on the rest of the economy: that is, ICT first, transport second, electricity third, and water fourth.

Figure 12: Marginal effect on TFP growth at different levels of AIDI



In searching for regions with more effective infrastructure networks, our findings show that infrastructure has had the strongest impact on economic outcomes in the SADC region. Perhaps, there are other variables outside the model that explain the higher than average impact of infrastructure in the SADC region (these factors are considered in a more technical version of the paper). Therefore, the SADC regional economic community is identified as the flying-geese, which should provide the exemplary leadership for other RECs to emulate in order to help make the impact of infrastructure more effective. One important change in paradigm that we have advocated here is the utilization of “inverse” infrastructure techniques for integrating African infrastructure.

Appendix

Table 11: Pairwise correlation matrix of key variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
GDP per capita (1)	1															
TFP ratio of US (2)	0.209	1														
Trade Openness (3)	0.5089*	0.177	1													
TFP Growth (4)	0.7857*	0.4848*	0.3578*	1												
AIDI (5)	0.6697*	0.3119*	0.170	0.8386*	1											
Transport Infrastructure (6)	0.4733*	0.298	0.139	0.7180*	0.8722*	1										
Electricity Infrastructure (7)	0.6635*	0.251	0.0863	0.7292*	0.8497*	0.5554*	1									
ICT Infrastructure (8)	0.6809*	0.3194*	0.176	0.8164*	0.9468*	0.7541*	0.8728*	1								
Water Infrastructure (9)	0.5808*	0.214	0.201	0.7197*	0.8705*	0.7685*	0.5969*	0.7388*	1							
Gross Fixed Capital Formation (10)	0.4712*	0.0718	0.6958*	0.206	0.143	0.118	0.0733	0.138	0.186	1						
Cost to Export (11)	-0.168	-0.245	-0.194	-0.270	-0.2911*	-0.2882*	-0.188	-0.276	-0.263	-0.176	1					
Internet Users (12)	0.6560*	0.4051*	0.270	0.7815*	0.8889*	0.8171*	0.6986*	0.8796*	0.7196*	0.212	-0.3063*	1				
Mobile Subscription (13)	0.7862*	0.3415*	0.3238*	0.8224*	0.7793*	0.6112*	0.7031*	0.8310*	0.6614*	0.175	-0.240	0.7371*	1			
Patents (14)	0.5831*	0.0518	-0.122	0.403	0.6306*	0.122	0.9062*	0.6885*	0.3921*	-0.0121	-0.157	0.4419*	0.5025*	1		
Control of Corruption (15)	0.2945*	0.3175*	0.102	0.5845*	0.6200*	0.6837*	0.4479*	0.5576*	0.5383*	0.0794	-0.284	0.5710*	0.5554*	0.262	1	
Rule of Law (16)	0.3550*	0.4263*	0.107	0.6075*	0.6252*	0.6348*	0.4470*	0.5968*	0.5640*	0.121	-0.3306*	0.5639*	0.6122*	0.213	0.9107*	1

Table 12: Regional differentials in the effect of transport infrastructure on economic outcomes

	(1)	(2)	(3)	(4)
Dependent Variable	Per capita GDP	Trade	TFP growth	Patents
Transport Composite	0.094**	0.559	0.013***	-0.073
	(0.041)	(0.666)	(0.003)	(0.096)
EAC*Transport Composite	0.159**	-2.526	-0.012	-0.311
	(0.079)	(1.943)	(0.013)	(0.240)
ECOWAS*Transport Composite	-0.057	-2.950*	-0.010*	0.219
	(0.101)	(1.527)	(0.006)	(0.132)
CEMAC*Transport Composite	0.166	-1.278	0.031*	-4.776**
	(0.437)	(5.701)	(0.017)	(1.777)
COMESA* Transport Composite	0.031	-2.247*	-0.005	0.029
	(0.083)	(1.177)	(0.008)	(0.203)
SADC*Transport Composite	0.020	1.020	-0.001	0.016
	(0.050)	(0.969)	(0.003)	(0.074)
Initial Income	-0.676			
	(0.556)			
Primary Enrolment	-0.012			
	(0.017)			
Trade Openness	0.036*		0.109	3.662*
	(0.019)		(0.068)	(1.737)
FDI/GDP	0.010		-0.023	-0.578
	(0.181)		(0.018)	(0.393)
Financial Depth	-0.021	-0.160		
	(0.019)	(0.188)		
Log GDP		-2.762		
		(3.868)		

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Table 12 Continued

Cost to Export		-0.005		
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		(0.004)		
Diversification		0.202		
		(0.625)		
Population Density		-0.006		
		(0.059)		
GDP growth			0.322**	9.725**
			(0.129)	(3.368)
Inflation			-0.008	2.516**
			(0.023)	(0.977)
Rule of Law				-0.740
				(1.611)
Constant	3.657	141.705	-0.317	-20.251**
	(2.894)	(93.908)	(0.260)	(7.710)
Countries	44	43	24	18
R-squared	0.51	0.34	0.88	0.77

Note: All regressions are cross-sectional with one averaged observation per country. Standard errors are in parenthesis, and significance levels for rejection of null hypothesis are: *** for 1 %, ** for 5% , and * for 10% levels respectively

Table 13: Regional differentials in the effect of ICT composite on economic outcomes

	(1)	(2)	(3)	(4)
	Per capita GDP	Trade	TFP growth	Patents
Composite ICT	0.460***	3.152**	0.029***	0.281**
	(0.133)	(1.503)	(0.005)	(0.091)
EAC* Composite ICT	-0.043	-4.854	-0.016	-0.035
	(0.220)	(4.695)	(0.023)	(0.196)
ECOWAS* Composite ICT	-0.156	-3.850	-0.034***	0.011
	(0.152)	(2.709)	(0.006)	(0.216)
CEMAC* Composite ICT	-0.014	-0.131	-0.002	-0.563
	(0.341)	(3.029)	(0.008)	(1.100)
COMESA* Composite ICT	0.036	0.893	-0.023	0.259
	(0.219)	(4.117)	(0.019)	(0.361)
SADC* Composite ICT	0.079	0.441	-0.010**	0.190**
	(0.100)	(2.590)	(0.005)	(0.073)
Initial Income	-1.516**			
	(0.635)			
Primary Enrolment	0.001			
	(0.015)			
Trade Openness	0.030**		0.152**	-0.245
	(0.015)		(0.069)	(1.469)
FDI/GDP	0.081		-0.027***	0.321
	(0.128)		(0.009)	(0.391)
Financial Depth	-0.052***	-0.296		
	(0.013)	(0.214)		
Log GDP		-5.709		
		(5.176)		
Cost to Export		-0.006		
		(0.004)		
Diversification		0.188		
		(0.630)		

continued next page

Table 13 Continued

	(1)	(2)	(3)	(4)
	Per capita GDP	Trade	TFP growth	Patents
Population density		-0.050		
		(0.059)		
GDP growth			0.129	0.609
			(0.149)	(2.670)
Inflation			-0.003	-0.140
			(0.020)	(0.756)
Rule of law				-2.000*
				(1.070)
Constant	8.307**	205.076*	-0.408	-0.678
	(3.400)	(127.650)	(0.276)	(6.475)
Countries	44	43	24	18
R-squared	0.64	0.29	0.91	0.87

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Three

Integrating african services markets

Bernard Hoekman (EUI and CEPR)¹

Introduction

Africa's trade volumes have risen since the 1990s. The share of non-fuel merchandise in total exports has increased, reflecting growth in exports of manufactured and agricultural products as well as trade in services. The geographic pattern of Africa's trade has also changed in recent decades. The European Union as a bloc remains the continent's largest trade partner, but China and India have become the top two individual trading partner countries for many African countries. Post-Brexit, the share of the EU will decline further. However, much also remains the same. Many countries remain heavily dependent on a limited number of exports. Intra-regional trade, despite rising steadily since 2008, stands at 18% of total trade, well below that observed in most other parts of the world (Hoekman and Njinkeu, 2017).

The African Union (AU) Agenda 2063 provides a vision for “an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global arena” (African Union Commission, 2015).² The agenda envisages a continent where there is free movement of people, capital, goods and services and a substantial increase in trade and investment among African countries. The institutional framework to support this is the Continental Free Trade Area (CFTA), supported by AU initiatives in the areas of trade facilitation, trade policy, productive capacities, trade related infrastructure, trade finance, trade information and factor market integration.³ Integrating African product markets will require both deepening and rationalization of disparate regional integration processes. A first step in this direction has been taken with the agreement to consolidate the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA) and the Southern Africa Development Community (SADC) into the Tri-Partite Free Trade Area (TFTA), which was launched in 2015.

Realizing the ambitious intra-regional trade agenda is a multidimensional challenge, this paper focuses on one important dimension of this challenge: integrating markets for services. Services are increasingly tradable because of technological advances,

investments in "backbone" infrastructure and connectivity, and policy reforms that increase the contestability of services markets, including liberalization of FDI. Trade in services, broadly defined to span both cross-border exchange through telecommunications networks and the temporary movement of service suppliers or consumers, and FDI (establishment in a host country foreign affiliates that produce/sell services) are potentially important channels for increasing productivity growth. Trade in services is like trade in goods in allowing specialization according to comparative advantage, but differs in that it requires movement of providers, whether legal entities (firms) or natural persons (services suppliers). Both dimensions imply that a (much) broader range of policy instruments and underlying public policy concerns are relevant than for trade in goods. Another difference, at least in degree, is that many services are critical inputs for many different industries, thus imports of services may be a particularly important channel for productivity growth. Integrating African services markets can help support greater cross-border services trade and investment flows, and thus help generate productivity growth.

A well-known stylized fact of intra-African trade is that trade costs are high. This is not simply a matter of tariffs and red tape at borders that can be addressed through tariff removal and trade facilitation measures. Reducing trade costs in Africa is in (large) part a challenge of increasing productivity in a variety of services activities, most obviously in the areas of transport and logistics, less obviously in areas such as communications and financial services. The level of trade costs associated with moving goods and services (including services providers) from one country to another is in large part a function of the costs of the services that are needed to enable cross-border movement. Thus, one dimension of the net gains from integrating African services markets is that it can help reduce trade costs, complementing goods trade liberalization and facilitation efforts (Miroudot et al, 2012). McMillan, Rodrik and Verduzco-Gallo (2014) have noted that in Africa the process of structural transformation in which workers move out of agriculture/rural locations into other economic sectors/urban centres has not been accompanied by the shift observed in East Asia in which this process can be characterized by a shift from low to higher productivity activities, with manufacturing absorbing a large proportion of the workers who move out of agriculture and an overall rise in economy-wide productivity performance. The pattern that is observed instead in many African countries is one of a shift of people from rural areas into the urban informal sector or into low productivity services activities (retail, personal services etc), with little in the way of an expansion of the manufacturing sector.

Modern manufacturing involves many services activities. Globally, much of manufacturing is undergoing a process of servicification, involving the provision (sale) of the services that are generated by products as opposed to simply the fabrication and sale of tangible goods. Thus, distinguishing between manufacturing and services sectors is rapidly becoming less meaningful. What matters from the perspective of structural transformation is not so much shifting resources out of rural agriculture into urban manufacturing assembly plants but moving resources into activities that generate high(er) value added and increase aggregate productivity (Balchin et al, 2016). Many services are relatively skill intensive and are associated with higher productivity, but even relatively low-skilled services activities offer opportunities for real wages that are higher than in agriculture – e.g., related to the tourism industry. Such activities will often revolve around or be classified as services, whether they take place in industry or as stand-alone services. A key factor then is to understand the drivers of investment

in economic activities that generate higher productivity per worker and what regional integration can do to help address constraints to such investment.

This paper reviews some of the literature on trade in services and integration of services markets through trade agreements. Section 1 briefly reviews the role of services in development and growth, the potential role of trade in services, and recent evidence on the magnitude of services trade costs. Section 2 discusses prevailing services trade and investment policies and how these can affect the productivity of downstream firms. Section 3 turns to the design of trade agreements, highlighting the implications of recent research on the quality of economic governance as a determinant of the magnitude of the net gains of services trade liberalization. An implication of this research is that efforts to integrate services markets must go beyond a focus on removing services trade barriers. Efforts to improve and bolster regulatory regimes and implementing institutions are also important. Section 4 discusses what could be done through regional integration to reduce services trade barriers, the state of play in this regard in Africa and what research on services trade policy suggests should be on the agenda.⁴ Section 5 concludes.

Services, trade and structural transformation

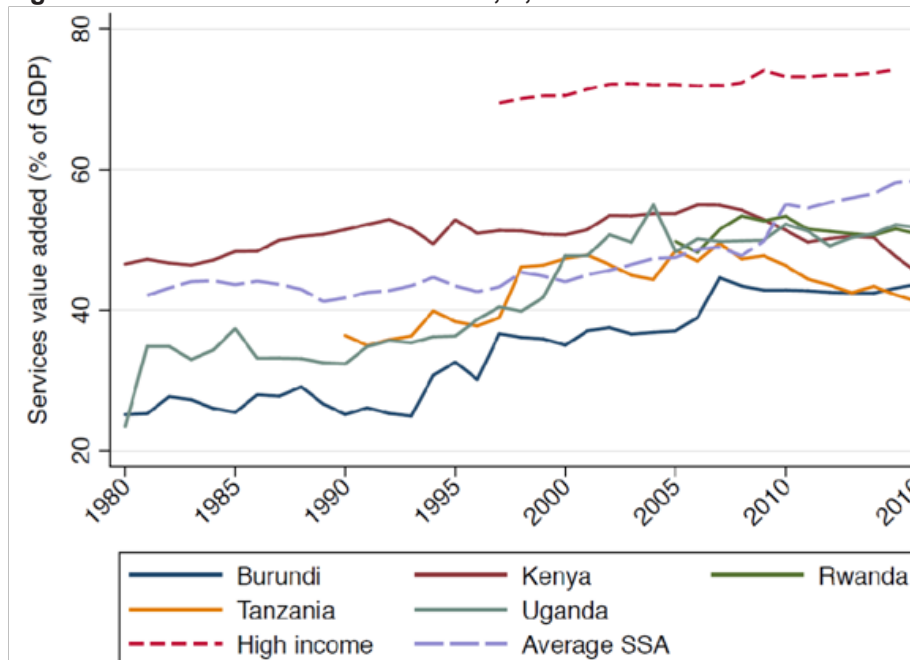
The share of services in total output and employment for the world as a whole has been increasing over time as countries become richer. This is nothing new (Kravis, Heston and Summers, 1983), but for any level of economic development the role of services in the economy is today more important than in the past as a result of advances in information and communications technology and transport. Efficient services are critical for economic development. Many services are inputs into the production of other services and goods. As a result, their cost and quality impact on the growth performance of the economy. An important economic characteristic of many services is their “intermediation” role: intermediate or producer services support the process of ever-finer specialization associated with economic development. Producer services are not only differentiated intermediate inputs into production; they perform an important function in coordinating production processes, both within, and increasingly, across countries, in the process enhancing overall productivity performance.

It is well known that in high income countries services account for the bulk of economic activity. What is less widely recognized is that services also make up a significant part of the economy in developing countries, even low-income countries and least developed countries. Data on services for many African countries are very weak; many countries do not report detailed statistics and some do not report at all. This implies that analysis of available statistics is likely to give a misleading picture of the reality “on the ground” in Africa. On average, services account for some 50% of GDP in sub-Saharan Africa, while services trade is equal to about 10% of GDP. This compares to 62% and 13%, respectively, for the world as a whole, suggesting that African services trade intensity is quite similar to that of the world as a whole.⁵ Travel (including tourism) is the major export category and has been growing faster than other categories of services. That said, a number of African countries have experienced significant growth in trade in commercial services. Although sub-Saharan Africa’s share in global trade in services is small, its share is larger than it is for manufactured products, suggesting this is an area of revealed comparative advantage.

Figure 1 shows the proportion of GDP accounted for by services in sub-Saharan Africa

on average as well as for EAC countries. With the exception of Burundi and Tanzania, the share is reasonably stable over time at about 50%. Overall, EAC countries are less “services-intensive” than the average sub-Saharan African country. In Tanzania, the share of services in GDP has fallen to around 40%, whereas in Burundi it has risen from a low level of 35% to over 40%. Of course, these data need to be taken with caution—as many sub-Saharan African countries are known to have substantial data quality issues. The national accounts do not include the informal sector, which is typically large in the region. Many services are provided informally, so the true level of contribution of services to the economy as a whole is larger than what the national accounts indicate. In any case, the point is that services account for a substantial share of all economic activity in African countries, a trend that is likely to intensify with economic growth and development.

Figure 1: Services contribution to GDP,%, 2000-2016

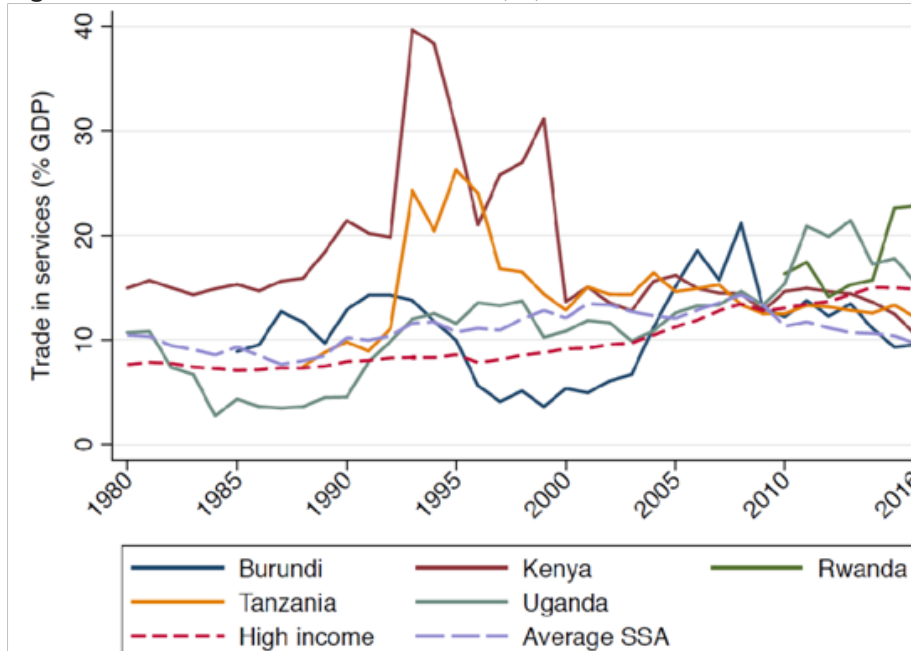


Source: World Development Indicators.

Services trade in Africa is growing in line with the economy as a whole. As a result, the ratio of services trade to GDP (Figure 2), while volatile over time – possibly reflecting data weaknesses – is relatively stable over time at 10%-15%. Within the EAC, Rwanda is the most specialized in services exports, overtaking Uganda in recent years. On average, EAC countries have higher services trade/GDP ratios than sub-Saharan Africa as a whole or high-income countries. Again, a caution is in order: this analysis is based on statistics taken from the Balance of Payments and so only accounts for, approximately, what is defined in the WTO as Mode 1 (pure cross border trade) and Mode 2 (movement of the consumer) transactions. The importance of services would be somewhat higher if all modes of supply were included, but data on Mode 3 (sales of foreign affiliates)

and Mode 4 (temporary movement of service providers) are notoriously scarce and of low quality. Despite this shortcoming, it is clear that services trade matters for African country, and that there is substantial heterogeneity across countries.

Figure 2: Services trade relative to GDP, %, 2005-2016



Source: World Development Indicators.

Case studies provide a sense of both recent developments in services trade and illustrate the potential for services trade growth for African countries. This goes much beyond the well-known potential to exploit national natural endowments through tourism. Innovative firms and entrepreneurs operating in a variety of services sectors have demonstrated that African firms can compete and that there is great scope for growth in intra-regional trade in services. Such trade is already significant. Based on surveys of firms and complementary innovative data collection methods in a set of Common Market for Eastern and Southern Africa (COMESA) countries, Dihel and Goswami (2016) conclude that more than 16% of interviewed accounting, architectural, engineering and legal firms engage in exports, mainly to neighbouring countries. They also document substantial trade in education, health, banking, insurance, and accounting services. Importantly, they also document that barriers affecting trade in services—for all modes of supply—lead many African service suppliers to engage in informal trade and/or significantly reduces their productivity. The case studies included in Dihel and Goswami (2016) demonstrate that entrepreneurs are able to circumvent formal barriers to cross-border trade in services and that there is substantial demand for services imports, suggesting that liberalization and services trade facilitation – to remove the need for bribes and more generally lower transactions

costs and the ability of incumbent services industries (e.g., professional associations) to restrict foreign entry – has great potential to both expand trade further and increase welfare (the gains from trade).

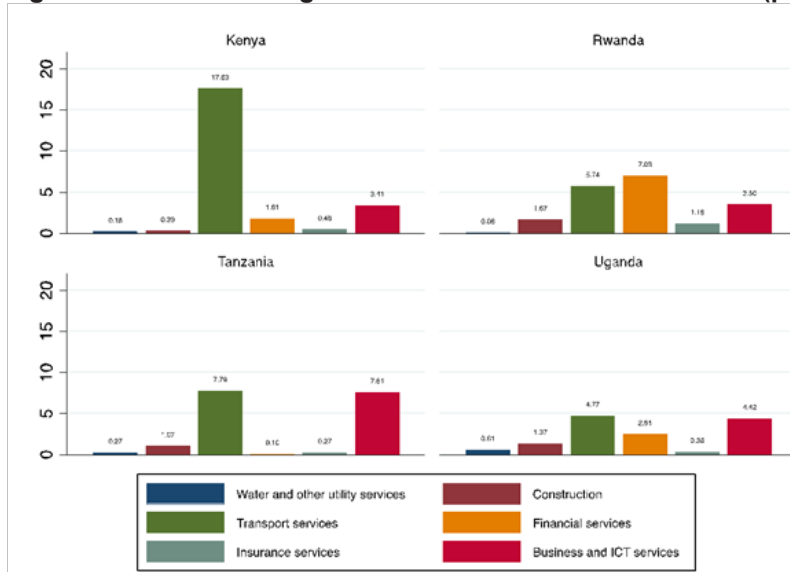
Dihel et al (2012) provide a case study of Kenya and discuss how new ICT and improvements in ICT infrastructure and mobile Internet connectivity have expanded mobile phone and Internet access and supported to emergence of globally competitive services suppliers such as KenCall (business process outsourcing – BPO), Ushahidi (open source software platforms to visualize information in real time on mobile devices) and Safaricom (mobile telecoms; mobile payment services – M-Pesa). Kenyan services exports include insurance, accounting, non-bank financial and BPO services. The regional market – the EAC – is often the largest one for smaller firms providing professional/business service. More than half of Kenyan service exporters have clients in Tanzania and/or in Uganda and one-third have clients in Rwanda. Regional markets are important for exports of accounting, architecture, engineering, insurance, and legal services. In BPO, Kenyan firms export an array of services ranging from inbound/outbound customer voice, email, and SMS support, phone-based marketing services and surveys of customers of client firms as well as a variety of back-office support services, including database management, storage and back-up facilities. Kenyan firms have also become exporters of software design services, apps such as games for mobile devices, user interface systems, as well as high-value technology solutions such as data recovery. While Kenya has developed a comparative advantage in such modern ICT-based and enabled services, similar trends can be observed in other African countries, including Nigeria, Mauritius, Ghana and Senegal. Space constraints prohibit an extensive discussion of specific cases – the main point of this sub-section is to illustrate that there are already substantial levels of trade in services occurring in Africa, that there is great dynamism in services trade and that much of this is regionally-focused.⁶

Services are an important part of international value chains. To illustrate this point, Figure 3 shows the degree of forward linkages observed for services sectors in the EAC countries for which data are available. This indicator captures the proportion of services that are used as inputs into other countries' exports, and is thus one good proxy for the degree of importance services have in value chains. As can be seen, performance varies considerably across countries and sectors. Transport and business services (including ICT services) stand out as having particularly strong forward linkages – which is unsurprising given their strong potential for internationalization. What emerges from the figure is that services are important sources of international business activity in East Africa, including through their linkages with other sectors.

The development literature stresses that financial services can affect growth by facilitating capital accumulation and fostering innovation (Levine, 1997). But other services activities may also influence growth potential and performance. For example, the telecommunications network and telecom services are a “transport mechanism” for information exchange and the dissemination and diffusion of knowledge. Road, rail and air transport services affect the cost of shipping goods and the movement of workers within and between countries. Accounting, engineering, consulting and legal services are critical in facilitating exchange and transmitting business process

innovations across firms in an industry or across industries. Health and education services are key inputs into – and determinants of – the stock and growth of human capital.⁷

Figure 3: Forward linkages in East African services sectors (percent)



Source: Fiorini and Hoekman (2015), based on World Bank EVA Database.

An increasing share of services in GDP and employment is part and parcel of economic development and thus a key feature of structural transformation. From a growth perspective there is nothing inherently negative about shifting resources into services, or in countries pursuing a development strategy (growth path) that involves rapid expansion in services activities and less in the way of manufacturing production than was the case in the past for countries that were successful in becoming high-income economies. Successful (desirable) structural transformation is not conditional on achieving significant growth in the share of manufacturing assembly operations – it is conditional on expanding the share of economic activities that generate higher average real wages (have higher productivity). Such activities need not involve a preponderance of the types of industries and production that drove development in the past because technologies today (e.g., regional or global value chains) allow firms to specialize and outsource services that used to be provided within the firm. Most of the value addition embodied in products – whether goods or services – reflects services inputs, whether provided through the market or within the firm.

Services lend themselves just as much to productivity growth as do manufactured goods production. Structural transformation is in part an inter-sectoral dynamic – from low productivity agriculture and informal services to higher productivity work in the formal sectors – both goods and services – but as important are sectoral shifts within sectors, including increasing demand for intermediate services (Berlingieri 2014). Within

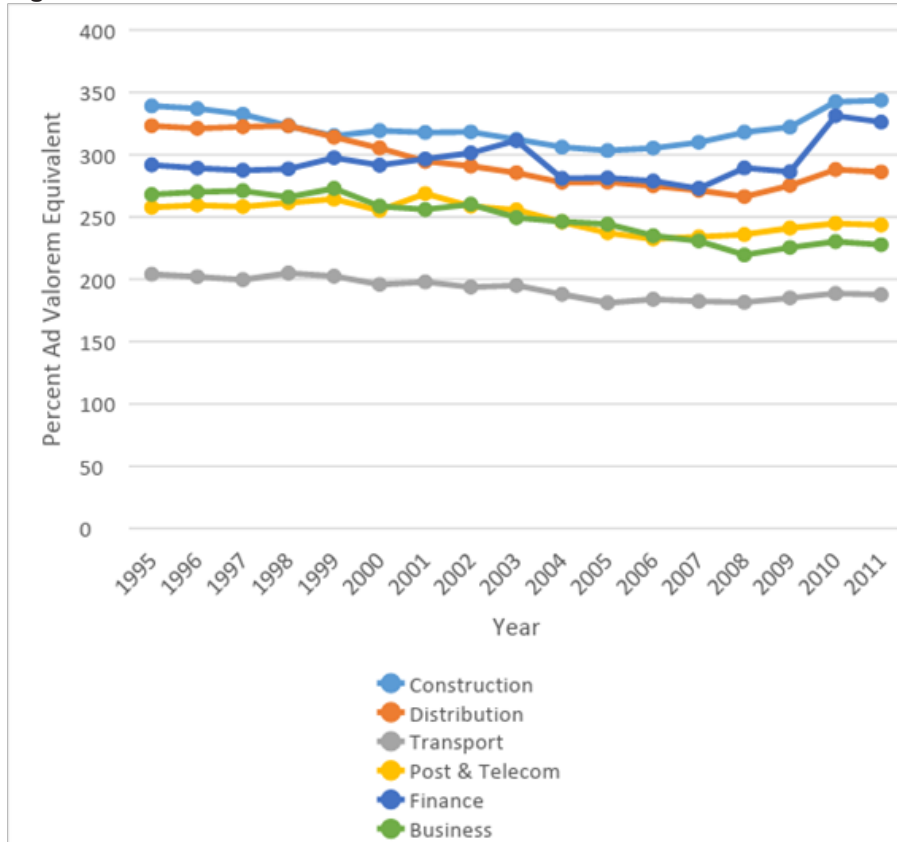
services resource allocation shifts are a driver of productivity growth in the same way as in goods-producing sectors. Young (2014) finds that average productivity growth in services is similar to that in other sectors. The presumption that most services are unproductive, is incorrect. Growth in the production (and consumption) of services as countries grow richer is not just a function of final demand patterns and income elasticities (Herrendorf et al, 2013).

Historically many services were nontradable, reflecting their nonstorable and intangible nature. An implication was that international trade in many services required the cross-border movement of providers – in turn involving the movement of capital and labour. The need for such factor movement has been declining as the result of technical change, but trade costs for services remain much higher than trade costs for goods. Figure 4 reports estimates of the ad valorem tariff equivalent of international trade costs for different services sectors. As can be seen, costs are high. One consequence of high trade costs is that many services tend to be traded indirectly. Recent initiatives to measure trade in value added have revealed that services account for a significant share of the value added of all sectors in the economy. As this value added is embedded in traded goods, services also play a much larger role in international exchange than is measured by a nations' balance of payments (BOP). At least 50% of global trade on a value-added basis comprises services: the sum of the value of services output that is traded directly and is captured in BOP statistics (some 20% to 25% of total exports), plus the value of services that are embedded in trade goods (another 25% to 35%) (Francois and Hoekman, 2010). Case study evidence suggests that at the level of the enterprise the services-content of output (the share of services in total costs or total value added) is high in both developing and developed countries (Low, 2013).

The fact that high services trade costs mean that imports of services often entails inward FDI has implications for growth and employment impacts. As long as greater foreign factor participation is associated with increased competition, FDI inflows will expand the scale of activity, and hence increase the scope for generating growth-enhancing effects. Conversely, a larger scale achieved merely by eliminating domestic barriers to entry and attracting domestic resources from other sectors could also generate larger endogenous growth as resources are allocated to more productive resources. Even without scale effects and even if services sectors do not possess endogenous growth attributes, inward FDI following services sector liberalization can have positive effects on growth by bringing in new technology. Moreover, because services are produced locally, greater foreign competition through FDI will generally have less of an effect in forcing a reallocation of employment across sectors than in the case of liberalization of trade in goods (Konan and Maskus, 2006). There is substantial empirical evidence that FDI has positive effects on productivity by inducing greater competition and providing access to higher quality, greater variety and cheaper services (Francois and Hoekman, 2010). An increasing number of studies and reports have analysed the role of services trade and related policies from an economic development perspective (see Mattoo and Payton, 2007; Cali et al, 2008, Saez et al, 2015; Dihel and Goswami, 2016; Balchin et al, 2016), complementing studies of developed economies – e.g., Breinlich and Criscuolo (2011). This literature has generated findings that apply to both developing and developed country contexts, e.g., that firm heterogeneity plays an important role in shaping patterns of services trade, much as is the case for trade in goods, as do barriers to trade and regulatory regimes for product markets. We will discuss one important determinant of

services performance and thus economy-wide productivity – policies towards trade and investment in services – focusing on the role that services play as inputs into production of both goods (manufactured) and other services.

Figure 4: Estimates of trade costs for services



Source: Miroudot and Shepherd (2016).

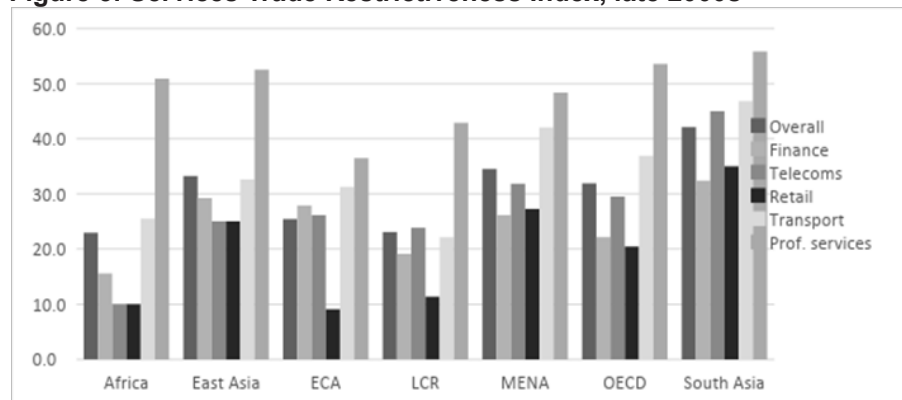
Services trade policies and economic performance

Services trade policies matter for many dimensions of economic performance. For example, services trade policy has been shown to matter for product differentiation and diversification. Building a gravity framework for more than 100 countries Nordås (2011) finds that price-reducing liberalization in business services is associated with more product differentiation, particularly in the motor-vehicle industry. Based on these findings she argues that services market opening should be considered as an element of strategies for industrial upgrading in developing countries. Miroudot and Shepherd (2016) find that a 10% increase in the level of services trade restrictiveness is associated with an increase in trade costs of 2.7% to 3.1%, using trade costs data compiled by Arvis et al (2016), with the biggest effects for postal services and telecommunications. Borchert

et al (2017) note that many landlocked African countries restrict trade in services that are particularly important for overall trade performance – e.g., on average air-transport policies are significantly more restrictive than in other countries, reducing connectivity with the rest of the world. The consequence is more concentrated market structures and less access to transport services. Even moderate liberalization of air transportation services by landlocked sub-Saharan countries could generate a 20% increase in the number of flights.⁸

Research on the effects of services trade policies has been impeded by data limitations. Information on policies often is patchy at best, with time series data on key policy variables generally not being available on a cross-country, comparable basis, and such information frequently not existing at the country level either. This situation has changed with the development of new datasets that characterizes the restrictiveness of policies towards services trade and investment (Borchert et al, 2014). The World Bank database covers five services sectors and three modes of supply: cross-border trade, commercial presence (FDI) and temporary movement of service suppliers. These are not relevant for all sectors, and in some case policies affecting a mode of supply apply to many or all sectors. The services trade restrictiveness indicators (STRI) are a numerical summary of applied services policies believed to affect trade flows. The more restrictive a country is towards trade and investment in services, the higher the STRI.

Figure 5: Services Trade Restrictiveness Index, late 2000s



Source: World Bank Services Trade Restrictions Database. See Borchert, Gootiiz and Mattoo (2014).

Figure 5 summarizes the data. These are available for only one year at present, although work is ongoing by the WTO and the World Bank to update and expand these data. The reported STRIs present an overall indicator, in the sense of a summary number that covers all sectors and modes. The average STRI for sub-Saharan countries included in the database is 32. The general picture that emerges is that African countries are relatively liberal when it comes to Mode 1 (cross-border supply of services), but have higher levels of trade restrictiveness in place for Mode 3 (sales through establishment

by foreign affiliates, i.e., FDI) (not plotted). However, policy measures vary considerably by sector and country. Although Africa is relatively liberal (open) based on the STRI measures, it should be kept in mind that the STRI covers only one dimension of services policies – the extent to which policy discriminates against foreign providers. It does not capture the types of trade costs associated with corruption and inefficient border clearance for services suppliers or the performance of services sectors such as transport and logistics. As discussed below, the available evidence suggests that the quality of economic governance broadly defined plays an important role in determining the extent to which African firms and households benefit from reductions in services trade restrictions.

A more detailed breakdown of the STRI data for selected African countries is reported in Table 1. This illustrates the high degree of heterogeneity in policies that prevails across services sectors and countries. The data help identify sectors where many countries are already open to trade and investment and those where there is likely to be a challenge in integrating markets. The indexes range from totally open (1) to closed (100). The fact that the STRI data dates back to the late 2000s needs to be borne in mind – it may well be that reforms have occurred in recent years to open sectors (e.g., rail transport). Overall, although some countries maintain restrictive trade policies for many services sectors (e.g., Ethiopia), many African countries are relatively open and are roughly comparable to what is observed for large trading powers such as China and the US. In specific sectors – e.g., air transport, banking, retail distribution – many countries are mostly open; others – e.g., legal services – tend to be more closed. Most countries have some sectors with high STRIs.

Table 2 reports estimates of the ad valorem tariff equivalents (AVEs) that are implied by the STRIs. These are obtained from Jafari and Tarr (2017), who describe in some detail the underlying methodology and assumptions that were used to generate the estimates. This reveals that fixed line telecommunications, rail, and professional services (accounting, legal) and insurance have relatively high AVEs, while air and road transport (in several countries), banking (several countries), mobile telephony and retail distribution services have very low AVEs. While these data are indicative only and are somewhat outdated, they point to the fact that some sectors tend to be highly protected, and that this often concerns activities where greater trade and investment is likely to have an intra-regional dimension – e.g., transport, fixed line telecoms and professional services.

High AVEs matter as they reduce the incentive to engage in cross-border trade and investment. Research on the effects of services trade policies has documented that liberalization of services markets can improve the productivity performance of “downstream” industries that use services as inputs into production – see, e.g., Arnold et al (2011) for the Czech Republic, Bas (2014) for India, or Duggan et al (2013) for Indonesia. Similarly, Van der Marel (2012) shows that services trade and investment policies are a determinant of TFP growth in services sectors. Hoekman and Shepherd (2017) use World Bank enterprise survey data for 58,000 firms across some 100 developing countries and find that service sector productivity matters for the productivity of downstream firms producing goods, especially for firms that use services relatively intensively in

their overall input mix. The strength of the productivity linkages varies substantially across African countries in their sample, reflecting differing intensities of use of services inputs in the production process.

Table 1: Estimated services trade restrictiveness indexes, selected countries

Sector	Cameroon	DRC	Ethiopia	Ghana	Cote d'Ivoire	Kenya	Rwanda	Senegal	S. Africa	Tanzania	Uganda	Zambia	China	USA
Accounting	32	37	25	37	65	34	27	59	41	55	51	33	40	60
Legal	44	46	92	32	71	92	19	83	92	66	62	34	92	41
Air	7	13	99	2	12	1	7	74	43	30	1	9	41	45
Rail	31	100	35	23	100	100	100	100	15	46	22	19	10	20
Road	25	35	100	0	34	0	21	19	15	9	20	30	13	13
Banking	1	4	99	40	22	2	18	17	8	16	2	7	28	3
Insurance	30	98	98	32	17	44	32	17	35	39	21	30	26	15
Fixed line	14	34	94	42	36	45	37	24	36	29	31	93	58	25
Mobile line	5	34	88	38	23	29	35	23	42	17	65	25	51	24
Retail	10	10	85	11	5	5	41	5	6	9	4	5	40	11
Maritime	20	32	80	37	19	16	na	16	19	34	n/a	na	30	17

Source: Jafari and Tarr (2017).

Table 2: Estimated Ad Valorem Equivalents of Services Trade Restrictiveness Indexes, Selected Countries

Sector	Cameroon	DRC	Ethiopia	Ghana	Cote d'Ivoire	Kenya	Rwanda	Senegal	S. Africa	Tanzania	Uganda	Zambia	China	USA
Accounting	26	29	19	29	51	26	21	46	32	44	40	26	32	47
Legal	34	36	73	25	56	73	15	65	73	52	49	27	73	33
Air	0	0	84	0	0	0	0	81	70	54	0	0	68	21
Rail	56	84	62	26	84	84	84	84	0	72	18	0	0	0
Road	37	62	84	0	60	0	5	0	0	0	0	53	0	0
Banking	1	3	106	34	17	2	14	13	6	13	2	5	22	2
Insurance	25	104	105	26	13	38	27	13	29	33	16	24	21	12
Fixed line	29	915	915	915	na	915	915	60	23	915	915	915	13	2
Mobile line	0	1	37	1	na	1	3	1	1	1	4	2	2	1
Retail	2	2	14	2	1	1	7	1	1	1	1	1	6	2
Maritime	0	58	82	65	0	0	na	0	0	0	n/a	na	53	17

Source: Jafari and Tarr (2017).

Hoekman and Shepherd (2017) also find that lower barriers to services trade and investment increase the productivity performance of domestic manufacturing industries: at the average rate of services input intensity, a 10% improvement in services productivity is associated with an increase in manufacturing productivity of 0.3%, as well as higher exports of manufactures. As discussed further below, country-specific and institutional variables may play an important intermediating role in determining how services trade policies affect productivity.

The upshot of the foregoing is that (i) services trade barriers are quite heterogeneous across countries; and (ii) opening services markets can have substantial positive effects on economic performance. The latter observation is supported both by empirical analysis of the type alluded to above and by applied general equilibrium modelling of the welfare effects of liberalization. The latter incorporate estimates of the AVEs of services trade policies and show that the opportunity cost of not focusing on reform of services policies can be significant. Jensen, Rutherford, and Tarr (2009), for example, estimate that removing restrictive services trade and investment policies could increase welfare (real consumption) in Tanzania by 16% in the long run. In the case of Kenya, Balistreri, Rutherford, and Tarr (2010) conclude welfare gains would be even greater, with real consumption increasing by some 50%.

Beyond services trade liberalization: Regulation and governance

In designing trade policy reforms and pursuing efforts to liberalize regional trade in services it is not enough to focus only on the policies that result in high STRIs. Recent research has documented the importance of good governance for economic development—political stability, rule of law, control of corruption. Such factors impact on the gains from liberalization and may reduce net gains significantly. Regional integration can be used as one instrument to improve economic governance at the sector-specific or economy-wide level through agreement on enforceable rules of the game or the creation of common institutions. The question here is where rules/cooperation could have significant payoffs in the African context and how they could be structured. Beverelli, Fiorini and Hoekman (2017) analyse the role played by governance quality as a determinant of the effects of trade liberalization and consider the implications for the design of (regional) integration initiatives. They use industry level data for 58 countries to assess the effect of STRIs on productivity in downstream manufacturing industries, controlling for the quality of economic governance. They find that countries with high quality institutions, proxied by indicators of control of corruption and rule of law, and high STRIs are likely to benefit more from lowering barriers to services trade than countries with economic governance. An explanation for the sensitivity to institutional quality is that trade in many services often requires a physical presence. Thus, foreign firms will consider the national business environment they must operate in, and not just the level of the STRI that applies to their sector in an export destination.

The relationship between institutional quality and STRIs is illustrated in Table 3 for seven sub-Saharan African countries included in the sample analysed by Beverelli et

al (2017). For each country, the effect of STRIs on labour productivity in downstream sectors is calculated for the largest and the second largest manufacturing industry in the country.⁸ “Impact” in Table 3 refers to the estimated percentage change in sectoral labour productivity of removing all barriers to FDI in financial, transport, communication and business services, as measured by the World Bank’s STRI for Mode 3. The column “current institutions” is simply the estimated impact, while the numbers in the columns labelled “High Institutions (Africa)” and “High Inst. (DNK)” measure the effect on labour productivity under counterfactual scenarios where the governance variable (rule of law, regulatory quality, control of corruption, respectively, in panel A, B and C) is set at level of the African country with the best performance on each respective variable or at the level of Denmark, generally the highest performing country in the world in terms of economic governance indicators. The last two columns report the ranking of countries in terms of STRI levels (openness) and governance quality.

Food processing tends to be the largest or second largest manufacturing activity in the countries in the sample. Botswana and Mauritius have the best governance in this set of countries. If Botswana were to remove all Mode 3 barriers, this would generate a productivity increase in the food and beverages sectors of some 24% to 34%, depending on the governance indicator that is used. Similar magnitude effects are estimated for Mauritius and South Africa. However, for the other countries, the impacts would be substantially smaller, despite the level of Mode 3 restrictions being higher than in the other three countries. If, however, the four countries with weaker governance were to improve their institutional environment to that prevailing in the best performing sub-Saharan African country the positive productivity impact of services liberalization would increase by a magnitude of four to 10. Moving towards the Danish benchmark would increase impacts by another 50% to 100%. While the magnitudes of the estimates are only indicative – the estimates for the four countries with weaker governance are not statistically significant – the results are nonetheless informative: they illustrate the importance of economic governance as a determinant of the gains from trade liberalization. The implication for national policy and regional integration initiatives is that attention should focus on governance, not just reducing STRIs.

Table 3: Impact of removing services FDI barriers on downstream labour productivity (% change)

	Biggest manuf. Industry	Second biggest manuf. Industry	Country Ranking	Impact	Sector	Current Inst.	High Inst. (Africa)	High Inst. (DNK)	STRI	Institutions
Panel A: Rule of Law (Highest Africa: Mauritius)	Sector	Impact	High Inst. (Africa)	High Inst. (DNK)						
Botswana	furniture/nec	28.2	34.0	57.4	food/bev	31.4	37.9	63.8	6	2
Burundi	food/bev	-6.2	27.6	46.5	metals	-2.2	9.9	16.7	2	8
Ethiopia	food/bev	7.7	97.2	163.9	minerals	12.6	159.5	268.8	8	7
Malawi	food/bev	8.8	26.4	44.5	chemicals	8.5	25.4	42.8	4	4
Mauritius	textiles/app	18.3	18.3	30.9	food/bev	30.22	30.2	50.9	1	1
South Africa	food/bev	27.1	54.7	92.2	coke/oil	8.3	16.8	28.3	7	3
Tanzania	food/bev	9.4	41.2	69.4	minerals	12.0	52.4	88.3	5	6

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Table 3 Continued

	Biggest manuf. Industry	Second biggest manuf. Industry	Country Ranking	Impact	Sector	Current Inst.	High Inst. (Africa)	High Inst. (DNK)	STRI	Institutions
		Impact	High Inst. (Africa)	High Inst. (DNK)						
	Sector	Current Inst.								
Panel B: Regulatory Quality (Highest Africa: South Africa)										
Botswana	furniture/ nec	24.9	26.72	55.3	food/bev	27.7	29.7	61.6	6	3
Burundi	food/bev	-7.6	21.64	44.8	metals	-2.7	7.8	16.1	2	8
Ethiopia	food/bev	-7.6	76.33	158	minerals	-12.5	125.2	259.2	8	7
Malawi	food/bev	4.8	20.73	42.9	chemicals	4.6	19.9	41.2	4	6
Mauritius	textiles/ app	14.2	14.39	29.8	food/bev	23.3	23.7	49.1	1	2
South Africa	food/bev	43.0	42.97	88.9	coke/oil	13.2	13.2	27.2	7	1
Tanzania	food/bev	9.4	32.35	67.0	minerals	11.9	41.1	85.1	5	5

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Table 3 Continued

	Biggest manuf. Industry	Second biggest manuf. Industry	Country Ranking	Impact	Sector	Current Inst.	High Inst. (Africa)	High Inst. (DNK)	High Inst. (Africa)	High Inst. (DNK)	STRI	Institutions
		Impact	High Inst. (Africa)	High Inst. (DNK)								
Panel C: Control of Corruption (Highest Africa: Botswana)	Sector	Current Inst.										
Botswana	furniture/nec	34.3	34.32	62.2	food/bev	38.2	38.2	69.3	38.2	69.3	6	1
Burundi	food/bev	-1.6	27.80	50.4	metals	-0.57	10.0	18.1	10.0	18.1	2	8
Ethiopia	food/bev	20.1	98.05	177.8	minerals	32.9	160.8	291.6	160.8	291.6	8	7
Malawi	food/bev	6.4	26.63	48.3	chemicals	6.1	25.6	46.4	25.6	46.4	4	6
Mauritius	textiles/app	14.2	18.48	33.5	food/bev	23.5	30.5	55.2	30.5	55.2	1	2
South Africa	food/bev	34.7	55.19	100.1	coke/oil	10.6	16.9	30.7	16.9	30.7	7	3
Tanzania	food/bev	14.1	41.56	75.3	minerals	18.0	52.8	95.8	52.8	95.8	5	5

Notes: Source of governance variables: World Bank Governance Indicators. Services trade policies from the World Bank Services Trade Restrictiveness Database. Labour productivity (output per worker) from UNIDO industrial statistics database. Sectors based on ISIC 2-digit classification (Food/Bev: 15+16; Textiles/Apparel: 17+18+19; Furniture/nec: 36+37; Metals: 27; Mineral Products: 26; Chemicals: 24; Coke/Oil: 23). "Current institutions" estimates are statistically different from zero only for Botswana, Mauritius and South Africa.

Source: Fiorini and Hoekman (2017), based on the empirical analysis in Beverelli, Fiorini and Hoekman (2017).

This type of analysis is informative in pointing to the importance of governance quality as a determinant of the effects of services trade policy, and thus potential trade reforms, but it is only a first step. We do not know, for example, to what extent the country-level governance variables reflect sector-specific policies. Dealing with corruption or enhancing the rule of law clearly is important but from the perspective of the design of trade integration efforts such as the CFTA and sub-regional arrangements such as the EAC and ECOWAS, it is necessary to know if and how specific sectoral policies interact with trade policies or customs/border clearance procedures.

As discussed below, this suggests it is important to inform the design of regional integration efforts and related policy reforms with detailed analysis and consultations with stakeholders, including the business community and national sectoral regulators (Hoekman and Mattoo, 2013). Particularly important is to recognize the need to go beyond the general findings relating to the importance of governance and to "unpack" how different dimensions of the business environment and economic governance institutions, including sectoral policies and regulation, impact on different services industries (see the contributions in Mattoo and Payton, 2007, for an example of such analysis for Zambia). While trade policy pertaining to goods and services trade should not be neglected, even in countries with weak governance, given that an openness can be expected to be a force for better governance as more foreign firms enter the market, the point is that trade reforms need to be complemented by efforts to improve governance.

Integrating African services markets

Regional integration has long been a stated priority of many African countries. An increasing recognition by African leaders that the patchwork of partially overlapping regional economic communities was sub-optimal led to a decision to gradually move towards the creation of a continent-wide free trade area (the CFTA). A feature of regional integration efforts in Africa as well as the PTAs that African countries have been negotiating or have signed with non-African nations – most notably the Economic Partnership Agreements (EPAs) with the EU – is that the focus predominantly has been on policies affecting trade in goods. This is unfortunate from the perspective of the economic relationship between access to services and measures of economic performance, including the role that services play as determinants of productivity in agriculture, mining and manufacturing. For example, overall, across Africa, temporary cross-border movement of service suppliers often is quite restrictive and much remains to be done to address opposition by incumbent operators and sector associations to regional liberalization of services trade. Karingi and Davis (2016) note that the average African citizen needs to obtain a visa in advance of travel for 55% of the countries he or she may want to travel to. Dihel and Goswami (2016) and Dihel et al (2012) document there are still many regulatory barriers as well as outright discrimination against foreign professional service providers in the East and Southern African context.

Insofar as barriers to trade in services and differences in regulatory regimes pertaining to services impede services trade, regional integration efforts will have less impact on performance. Moreover, insofar as incumbent (national) services suppliers and industries oppose opening up markets to competition from foreign firms, the exclusion of services from PTAs implies an opportunity cost, as the role that PTAs can play in changing political economy equilibria to allow pursuit of efficiency-enhancing reforms

is removed from the table. While services have been left to the future in the context of the EPAs with the EU, intra-Africa RECs increasingly include a focus on services. Although in many cases the extent to which PTAs liberalize trade in services and result in domestic reforms is still limited, significant progress in some dimensions has been made in some contexts. An example is the EAC Common Market Protocol, which spans trade in services and imposes a standstill on new measures restricting intra-regional trade in services and has as objective the progressive liberalization of all four modes of supply. Liberalization follows a so-called positive list approach (as in the WTO), where governments make commitments to liberalize specific sectors and modes of supply. The sectors chosen for initial liberalization were business and professional services, communications, distribution, education, financial services, tourism and travel-related activities and transportation. Commitments in these sectors vary across EAC members and were to be implemented by the end of 2015.¹⁰ They are complemented by efforts to mutually recognize professional qualifications obtained by service suppliers in EAC states. As noted below, assessments of the extent to which commitments were implemented suggest progress has been slow.

There are several reasons to focus more on services in the context of regional integration efforts. One important reason is that the potential for trade between neighbouring or regional countries is significant and often substantially greater than formal statistics suggest as a result of informal cross-border trade. The case study above illustrates that intra-regional trade in many services is already occurring and has been dynamic. Creating conditions to move transactions out of the informal sphere and to facilitate cross-border exchange will not only support existing regional trade by lowering transaction costs but encourage firms to invest in higher value-added services offerings and grow along the extensive margin of trade.

In principle, it should be easier to pursue services trade liberalization in a regional cooperative setting than on a global basis. The political economy dynamics that affect services liberalization efforts are similar but somewhat different than for goods because of the role many services play as inputs into production in many different sectors. Thus, inclusion of services on the agenda of regional integration may help overcome resistance by domestic services producers by mobilizing downstream sectors that stand to benefit from access to cheaper or better services. A regional focus may also facilitate liberalization given that a complicating factor affecting trade in services is the prevalence of regulation in many services sectors. There may be a need for mutual acceptance or recognition that regulatory requirements in different countries are equivalent in satisfying minimum levels of quality. This is likely to be more feasible to achieve among a small group of countries.

Various factors may explain the limited attention given to services in the context of regional integration efforts and the neglect of using these vehicles to pursue mutually beneficial reforms that would support greater trade in services. One reason is a lack of understanding of the importance of growth and productivity of services. While this has little to do with trade per se, it may be a factor that has led services trade to be neglected in trade agreements. Another likely reason is that even when policymakers recognize the potential benefits of focusing on services trade policies, there may be uncertainty over how to go about doing so in the context of trade agreements in a way that ensures that the domestic economy benefits (households and firms obtain greater access to better

services; firms and workers will be able to utilize improved access to partner country markets; local services providers will not be swamped by foreign suppliers, etc.). This raises questions regarding the design of trade agreements (e.g., sequencing; safeguard provisions; adjustment impacts) and a need to ensure that regulatory institutions are adequate to encompass provision of services by foreign firms.

A third possible reason centres on the political economy of trade agreements. As noted above, in principle the political economy of services reform should be less difficult to manage than liberalization of trade in goods as there are many more industries and groups in society who would benefit from better access to services. However, if this is not evident to these groups, or, as is often the case, these groups are not consulted and have no voice in trade negotiations – an outcome that is particularly likely if the focus is mostly on goods – these pro-reform dynamics may remain weak. An implication is that analysis is required to enhance understanding of the costs of prevailing (restrictive) policies and the magnitude of the benefits (rents) that accrue to incumbent economic actors.

There are mechanisms that can be used in the context of regional integration efforts to both identify regulatory weaknesses and priorities for joint reform to support liberalization goals. One template is to create knowledge platforms that bring together groups with a stake in a given set of activities that together impact on the performance of a sector or value chain. Take the case of trade facilitation, a priority for many countries. This goes beyond customs clearance and the operation of border crossings. Enhancing regional connectivity through trade facilitation and cooperation between Customs and tax agencies to establish joint border posts and single windows needs to be complemented by cooperation to create efficient road corridors and effective transit regimes that allow trucks and people to move across borders and along transport routes, and cooperation in the setting and enforcement of health and safety standards and certification/licensing of service providers. A knowledge platform (Hoekman and Mattoo, 2013; Dihel and Goswami, 2016) that brings together representatives of financial institutions (trade finance, insurance), clearing and forwarding agents, logistics providers, transport companies, and shippers can provide valuable insights into the design of reforms. Including import competing private companies and parastatal entities that may be benefiting from the existing policy and regulatory framework and actively oppose change is important in recognizing where there will be adjustment costs and addressing these in a credible manner.

An example of what such an approach might generate is provided by Rwanda. The National Logistics and Distribution Services Strategy was developed to help mitigate Rwanda's logistical challenges. The strategy (i) provided an enhanced role for Rwanda's logistics system; (ii) incorporated logistics services with value-added activities; (iii) strategically aligned logistics and distribution facilities to production centres; and (iv) led Rwanda to export logistics services. The strategy supported the development of projects and mobilization of investments in logistics facilities to capitalize on longer value chains in the horticultural sector; regional logistics centres and land bridge improvements for the extended market's transit traffic; and air cargo market development to respond to overlapping market opportunities (Njinkeu and Hartman, 2015).

These considerations point to a need to consider (re-think) the design and approach

towards negotiation and implementation of regional economic integration agreements to support welfare-enhancing opening of services markets. The empirical literature on the design (content) and effects of services trade agreements suggests most such initiatives have not been very effective at opening services markets (Fink and Jansen, 2009; Miroudot, Sauvage and Sudreau, 2010).¹¹ Regional reform programmes need to go beyond a focus on specific technical issues and pay attention to political implications of the status quo – understanding who benefits and who loses, or who perceives they will benefit or lose from a policy or a proposed reform. This requires identifying the interests of the different stakeholders, how they are represented, how pro-reform coalitions can be built and strengthened and how anti-reform interests can be accommodated. The organized (formal) private sector will play an effective and proactive role if they see clear business opportunities.

In East Africa, for example, as Kenyan firms have increased their investment in other EAC Partner States, they have increasingly lobbied their government for implementing the EAC protocols of direct relevance to their sectors.¹² This has been particularly true for trucking companies that heavily invested and have aggressively lobbied for more competition and improved efficiency. They have generally supported efforts to eliminate restriction to foreign competition in the transport sector. Other businesses that are more focused on the domestic market have acted in a different direction. For example, the Kenya International Freight Forwarders and Warehousing Association and Tanzania Freight Forwarders Association have seen regional integration in the transport sector as a threat to their business and, as a result, they have been lobbying for lesser competition. Some members of these associations oppose foreign clearing and forwarding agents being able to handle domestic cargo, while others see it as an opportunity for partnerships and mergers between the Tanzanian and/or Kenyan forwarders and their counterparts in landlocked partner countries. Apex business association bodies can promote harmonization of business processes and better engagement with governments. In the case of the EAC, the East Africa Business Council, the Kenya Manufacturing Association, and the Kenya Private Sector Alliance, among others, played such a role. The transport sector associations like Kenya Shippers Council and the Uganda Shippers Council have made the Shippers Council of East Africa a powerful advocate for regional integration. Partly as a result, EAC member states are making some progress on regulatory harmonization in the transport sector, particularly axle load harmonization through which all EAC member states use the same policy for axle loads.

Such successful examples suggest pragmatic acceptance of variable geometry-based approaches should be encouraged in the design/pursuit of regional integration initiatives. Tanzania, and to some extent Burundi, has for a long-time preferred a slower pace in integration of EAC than Kenya, Rwanda, and Uganda. Head of State of the latter three countries have supported a variable geometry-based time table in such areas as infrastructure development, single tourist visa, and enhanced labour mobility. This has facilitated the implementation of a Single Customs Territory along the Northern Corridor and has led to reduced border crossing times, elimination of many weighbridges and police checkpoints on the roads, and growing compliance with weight restrictions. For example, a Regional Customs Transit Guarantee scheme covers transit goods from or to the ports and has eliminated multiple national transit guarantees. The regional scheme is accepted throughout the customs territory and this

has supported greater intra-EAC trade and lowered costs for firms using the Northern Corridor. This in turn has had positive spillover effects on Tanzania and Burundi, as well as South-Sudan and Eastern DRC.

Flexibility in the design of cooperation and use of deliberation mechanisms such as knowledge platforms needs to be complemented by information on prevailing policies and objective analysis of their economic effects. Given agreement to commit to specific reforms, it is also important to monitor implementation to inform stakeholders and policymakers on progress and to identify areas where progress is not being made and assess why. The EAC has developed a mechanism (supported by the donor community through TradeMark East Africa and the World Bank) to generate information through a “scorecard” that tracks compliance in implementing EAC services liberalization commitments. The latest scorecard (World Bank and EAC, 2016) indicates that the two large EAC countries lag other countries on road transport liberalization and that most instances of noncompliance – across all EAC members – are for professional services (some three-quarters of all nonconforming measures). The scorecard process makes transparent where progress has been achieved and where attention needs to focus. Between 2014 and 2016 only six out of 63 nonconforming services restricting measures were removed and two new ones put in place. The fact that most nonconforming measures in the EAC pertain to professional services and that there are fewer nonconforming measures for transport may be explained in part by the types of regional mechanisms mentioned previously focusing on regional transport and logistics.

Conclusion

Services play a critical role in economic growth and development. Trade in services is a key channel through which countries can exploit their comparative advantage. Sectors such as tourism or business process outsourcing are important activities that can generate substantial employment and foreign exchange earnings. More generally, however, it is important to recognize that services activities affect economic development through a variety of indirect channels. Opening trade and investment in services to foreign competition is a source of new knowledge and new products that can have a major impact on the productivity, and thus competitiveness, of many firms in the economy. Services account for a substantial share of the total costs of production of many firms in many sectors. Reducing the costs and increasing the quality of available services is therefore a mechanism through which to increase economy-wide performance. That said, the economic research literature also makes clear that services liberalization is not a panacea. The quality of prevailing economic governance, implementing institutions and regulatory regimes will determine how much a country stands to benefit from opening services markets to foreign competition. This strengthens the case for a concerted and consistent focus on improving economic governance as a necessary condition for sustained growth. The more that trade agreements are designed to promote that goal the more valuable they will be from a development perspective. The question is how to do so, a subject that has not attracted the attention it deserves. Mechanisms of the type that have been put in place in the EAC context are steps in the right direction, but a precondition is that governments are willing to use regional integration processes to liberalize services trade and to identify where this needs to be complemented by regulatory reform and regional regulatory cooperation.

Trade agreements are primarily instruments to improve access to markets. Improving the quality of domestic regulation is generally not a major focus. Insofar as regulation is addressed in trade agreements, the aim is to constrain the use of measures that discriminate against foreign products and firms and thus erode the value of negotiated market access concessions. Inclusion of provisions aiming to improve the quality of services regulation could help enhance the welfare benefits of regional services liberalization. In practice, improving regulatory quality will require actions by the national governments concerned. Trade agreements can support such actions by creating a focal point for the consideration of regulatory quality and mobilizing resources to improve regulatory performance. Creating a focal point in trade agreements to improve regulatory quality can help ensure that this area of policy gets greater attention in domestic reform efforts and the allocation of external development assistance. Improving regulatory quality does not figure prominently in the allocation of foreign aid. For example, according to the OECD Creditor Reporting System the percentage shares of total official development assistance (ODA) disbursements by EU institutions in 2015 for policy and administrative management in the transport, communication and financial sectors were 1%, 0.04% and 0.9% respectively. The share of business support services and institutions was 0.8% (Fiorini and Hoekman, 2017).¹³

Revisiting the design of integration initiatives to include a stronger focus on improving the quality of services regulation can take different forms but a common denominator is that this requires analysis, deliberation, joint action and monitoring of outcomes and impacts. Deliberation among government officials, regulators, economic operators and consumer groups, informed by analysis, can help identify priorities for action and capacity constraints that need to be addressed. Meaningful forms of deliberation on the quality of regulation and its effects should encompass both transparency-related activities and permit a broad set of actors to participate in the identification of priorities (Hoekman and Mattoo, 2013). A complementary approach could centre on efforts to agree on good regulatory practices and to use trade agreements as a mechanism to commit to their implementation. This could include linking services liberalization (market access) commitments to the adoption of good regulatory practices and the provision of technical assistance and aid as has been done in the 2013 WTO Agreement on Trade Facilitation (TFA). The TFA involves WTO members agreeing to implement what has collectively been determined to constitute good regulatory practices that will facilitate the cross-border movement of goods. However, countries have the flexibility to specify that specific trade facilitating measures will only be implemented after adequate assistance has been provided – thus ensuring that it will be able to realize the benefits from the agreement.¹⁴ Whatever approaches are adopted, what matters is to increase the attention for improving the quality of services regulation to increase the benefits of services liberalization.

Notes

1. Presented at the AERC Senior Policy Seminar XX, Kampala, Uganda, March 12-13, 2018. This paper draws on previous work, including Hoekman (2018) and Hoekman and Njinkeu (2017).
2. See African Union website at: <https://au.int/en/about/vision>.
3. AU, AfDB and UNECA (2016) develops and reports an index monitoring progress in achieving regional integration objectives. Afesorgbor (2017) provides a recent

- meta-analysis of the empirical literature estimating the effects of African regional integration initiatives in fostering intra-regional trade.
4. The external market access–related dimensions of further regional integration are not addressed in this paper. African economies have negotiated (or are in the process of negotiating) Economic Partnership Agreements (EPAs) with the European Union which may need to be revisited as Africa integrates. Relevant and important external dimensions of trade policy in this regard include Brexit, which may have significant effects for African exporters depending on what form Brexit takes and that LDCs have duty-free, quota free access to many high-income markets. Thus, different members of the CFTA will have diverse external market access conditions, with firms not only confronting possible variation in tariffs in export markets in the rest of the world but having to satisfy different sets of rules of origin depending on where they are located.
 5. Data are from the World Bank’s World Development Indicators.
 6. Dihel and Goswami (2016) provides a number of excellent case studies and informed discussion of trade in services in Africa. See also Cattaneo et al (2010), Saez et al (2015) and Balchin et al (2016).
 7. Further discussion of these different linkages can be found in Schettkat and Yocarini (2006) and Eichengreen and Gupta (2009).
 8. There is substantial heterogeneity across African countries in the openness of services trade and investment policies, and these policies have been changing in the last decade or so. A number of African countries have very liberal air transport regimes.
 9. Fiorini and Hoekman (2017) provide summary descriptions of the methodology used. The underlying estimation of downstream productivity effects of STRIs is provided in Beverelli, Fiorini and Hoekman (2017).
 10. Of the EAC members, Tanzania made the fewest commitments (59) and Rwanda the most (101) (World Bank and EAC, 2016).
 11. Unilateral reform instead appears as the prime channel through which steps toward liberalization have been made. Djiofack-Zebaze and Keck (2009), for example, show that the effect of WTO commitments in telecommunications services for the economic performance of the African telecommunication sector was weak, in contrast to a strong positive effect of unilateral reforms in this sector.
 12. What follows draws on Njinkeu and Hartman (2015).
 13. The relative neglect of support for economic regulation and related institutions is a more general feature of ODA disbursements. Similar ratios apply in the aggregate across all donors covered in the OECD database.
 14. See Hoekman (2016) for an in-depth discussion on the TFA.

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Four

The fiscal foundations of deep regional integration: From customs unions to economic and monetary union[†]

Christopher Adam

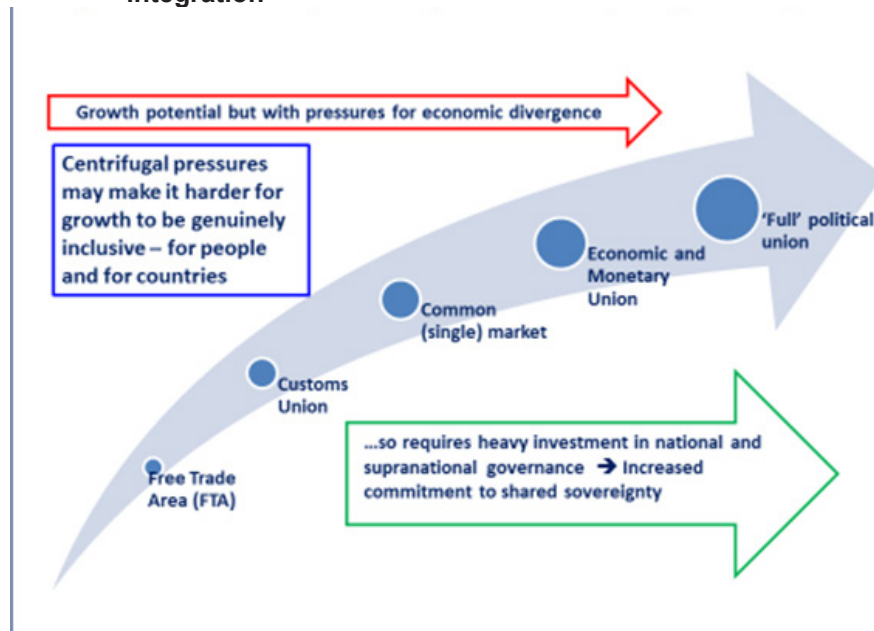
Introduction

At the end of November 2013, the presidents of the then five Partner States of the East African Community initialled the Protocol on the Establishment of the East African Community Monetary Union, committing them to full monetary union by 2024.¹ This step, however tentative it may turn out to be and however attenuated the eventual process is (and it is not unreasonable to think that full monetary union will not take place for a very long time, if ever), marks an important transition point in the process of regional integration in East Africa. Taking the step from integration based on a common market for goods and services towards the deep integration implied by monetary union significantly changes the demands placed on national fiscal policy. In particular, it requires a careful re-examination of how the institutional economic architecture of regional integration needs to be modified, at the national and regional level, if deep integration is to be effective and sustained. In this paper, I draw on the experiences of actual and putative monetary unions to explore how the economics of monetary union change the institutional and political demands on countries contemplating deep regional economic integration. The paper draws widely on the evidence but rather naturally tends to emphasize both the lessons from Europe and the current experiences of the countries of East Africa where the journey towards deep integration has begun. The lessons from this discussion are, however, relevant for any and all regional economic groupings.

[†] This paper draws in part on work carried out by the author under the auspices of the International Growth Centre (www.theigc.org) for the Secretariat of the East African Community in Arusha and the Committee on Fiscal Affairs. The opinions expressed are solely those of the author. I am grateful to my discussant, Dr Gibson Chigumira, and to participants at the AERC Senior Policy Seminar held in Kampala on 12-13 March 2018.

The essential argument of this paper is that while deep regional integration has the potential to create opportunities for enhanced aggregate economic growth, by unlocking gains from scale and market expansion, it also exposes the region to centrifugal forces that drive economic divergence within regional groupings that are not necessarily self-correcting, at least over the medium term, and as such can risk overwhelming the aggregate gains and threaten the sustainability of deep integration. Thus, as countries move from free trade and customs union arrangements, through single markets for labour, capital and land ownership, and towards full economic and monetary union, the challenges of ensuring that the growth payoff to regional integration is balanced and inclusive, both across and within countries, are elevated. Figure 1 provides a simple representation of this challenge.

Figure 1: Economic and political implications of deeper regional integration



One reaction to this challenge is to argue that monetary union, of the form that exists in Europe today and is being envisaged for East Africa, cannot be a stable (economic and political) equilibrium: potential member countries, therefore, face the choice between either advancing, possibly quite rapidly, towards full and credible political union, such as the political federation envisaged by the East African Community,² or retreating back to much looser structures of regional integration based on a customs union and a single market for goods and services (but possibly not for factors of production). The argument behind this "hard line" position is that the pressures for economic divergence inherent in the deep integration of monetary union can only be managed if underpinned by a fiscal union which, in turn, must be underpinned by a political authority of sufficient strength to impose macroeconomic and budgetary policies aimed at avoiding imbalances. Only

the national or supranational state (the political federation), it is argued, has sufficient political legitimacy to deliver this authority. The logic is that unless potential members are committed to moving to political federation with all deliberate speed, they must question the wisdom of seeking to establish monetary union and should instead focus their attention on consolidating the customs union and single market model of regional integration.

An alternative view, the implications of which this paper seeks to explore, takes a more sanguine position on the necessity of full political union. It starts with the claim that the crisis that afflicted European monetary union over the past decade was not inevitable but rather reflects specific errors in design, particularly in the fiscal domain, that rendered the Eurozone an "incomplete monetary union"; it was these errors, rather than any fundamental determinism, that precipitated the crisis. The corollary of this review is that a monetary union can endure as a broadly stable equilibrium, even without full political union, but only if the inherent economic tensions that such a monetary union entails are recognized and if a robust institutional architecture that explicitly engages with these tensions (and recognizes that they will not automatically be resolved by market forces alone) can be constructed. Critically, however, successful "monetary-union-short-of-full-union" still entails significant dilution of economic sovereignty, the creation of fiscal and/or risk-sharing mechanisms at the supra-national level, and requires that these institutions are adequately resourced.

Creating effective fiscal institutions to manage a monetary union is likely to require a greater degree of coordination on fiscal issues, and possibly closer political integration than currently prevails amongst the current champions of deep regional integration in Africa. This is certainly the case in the East African region, the explicit commitment of the EAC to eventual political federation notwithstanding.³ The extent to which countries committed to deeper regional integration will need to pool political and economic sovereignty in support of monetary union is hard to determine at this stage, but it is likely to be greater than many in the region are prepared to acknowledge. In practical terms, therefore, the challenge facing those designing a monetary union in East Africa, or elsewhere in Africa, is to strike a balance between the need to establish effective national and supranational governance institutions for the union on the one hand, and to recognize the inevitable resistance on the part of national governments to the delegation and pooling of authority and accountability this demands, on the other. The relevant institutions include not just the fiscal and monetary institutions that are the focus of this paper but also those governing the payments system, financial sector surveillance and regulation, and the generation of harmonized economic statistics for the union.

The European experience

It is natural in any contemporary discussion of regional integration to reflect on the European experience. And while other monetary unions exist – the Common Monetary Area of Southern Africa, the East Caribbean Currency Union (ECCU) and the Communauté française d’Afrique (CFA) Franc Zone of west and central Africa, for example – and indeed have endured for much longer than the Eurozone, the European experience remains highly relevant. Critically, these other unions have tended to emerge from particular historical configurations and are invariably characterized by deep asymmetries in size and power or other structural characteristics that do not

translate directly into the context in which current discussions of deep integration are situated. In particular, what makes contemporary discussions of deeper regional integration strikingly different from these examples is the ambition to create economic unions between "communities of equals" with common currencies that go beyond currency boards but are guaranteed by neither a regional nor an international hegemon. Such structures will therefore only be guaranteed by the credibility and a balanced commitment of the partner states to the union.

It is in this respect the European experience remains highly relevant; there is no external guarantor to the Eurozone and while different members inevitably wield differential economic power, their actions are governed by an explicit representative governance framework. Moreover, since 2010, and often under the pressure of events, there have been significant efforts in Europe aimed at correcting earlier errors in design.⁴ Policymakers in Africa therefore need to ensure these original European design errors are not baked into the institutional architecture of deep economic integration in Africa and that the lessons currently being learnt in the context of the Eurozone are taken on board.

Perhaps the key lesson from Europe is the depth of the institutional foundations on which the Eurozone is built and the scale of financial and other commitments that have been made to the institutions of a monetary union. The global financial crisis and the events that followed have placed the Eurozone under immense stress that has shaken many member states' commitments to the monetary union. But so far — and setting Brexit to one side — the Eurozone has survived and this probably owes something to a convergence process that occupied nearly three decades and, in doing so, conferred substantial political legitimacy on supranational policymaking bodies and to a shared view by member states that the union was inviolate and membership irreversible, even to the extent that there is no provision in the enabling legislation for exit from the Eurozone. Its ability to ride out the storms of crisis also reflect improvements in cross-border financial regulation and to substantial financial commitments, including through structural and stabilization funds and the range of facilities used by the European Central Bank, that have allowed economic policymakers to restore stability to the Eurozone. Although the African initiatives differ substantially from the Eurozone in many respects, the scale of these commitments must be acknowledged.

The remainder of this paper is structured as follows. Section 2 discusses the basic economics of regional integration with a focus on the tensions between growth and its distribution. The section also focuses on the additional divergence pressures that the step towards monetary union bring. Section 3 then discusses the politics of integration. Section 4 looks at the design of specific fiscal institutions and their resourcing are examined. Section 5 concludes.

Economics of deep regional integration

Economics of regional integration

Regional economic integration entails combining previously distinct national markets for goods and services — initially through free-trade or customs union arrangements and subsequently for labour, capital and, potentially the ownership of land — into a single integrated market. Larger integrated markets typically produce greater competition

between producers and the erosion of local monopoly power; they offer greater opportunities for operation at scale in production and in distribution with the attendant potential for positive productivity effects. These markets also provide greater capacity for firms and markets to absorb "lumpy" infrastructure. The cumulative effect of these scale effects create a more attractive environment for capital flows, be they FDI flows, debt or portfolio flows, which in turn lays the foundations for increased productivity growth, supporting higher real wages and incomes for members of the region. These same gains can make goods produced by firms inside the regional grouping more competitive relative to imports and by the same token more competitive in world markets.

This simple economic case for integration, based on trade creation, productivity and the reduction of transactions costs is only part of the argument for regional integration. Viewed over a broader canvas, however, much of the impetus for regional integration centres on non-economic, political and security considerations. As the various phases of European integration highlights, the development of ever-closer interlocking economic arrangements were seen as a way of reducing the risks of conflict (the European Coal and Steel Commission of 1952, for example, was explicitly established to, as its founder Robert Schuman stated, "make war not only unthinkable but materially impossible"). This closer economic interaction, as a by-product, demands ever closer political and functional cooperation, builds trust and reduces the cost of cooperation, both in economic and other spheres. Moreover, participation in regional economic institutions creates obligations that can also help anchor domestic policy commitments; in this case, regional institutions provide a form of external "agency of constraint", a role that may be extremely important in helping stabilize fledgling nations. This was the case in the "new" democracies in Europe (e.g. Spain, Portugal, Greece in the 1970s and the Central European accession countries in the 1990s) and may be an important stabilizing force for the Republic of South Sudan, for example. Similarly, regional integration can also give voice to small member states, possibly through governance institutions within the region, and through the collective leverage of power in global markets.

However, regional integration becomes difficult when the aggregate gains to integration are realized at the cost of powerful distributional pressures that are intimately entwined with processes of regional integration and are capable of outweighing the aggregate gains. These start with the well-known processes of trade creation, trade diversion and trade location. Creating a customs union entails eliminating tariffs on internal trade between the members while establishing a common tariff on imports from outside the union. At an aggregate level, this change in relative prices lowers transactions costs within the union, favouring regional supply relative to imports – the trade creation effect. At the same time, however, the same change in relative prices sees consumption switch from imports to higher-cost (i.e. less efficient) but-protected regional production. This is the trade diversion effect. The third element is that these changes in the internal terms of trade will favour locations and producers that enjoy the protection of the common external tariff. Hence, while the net benefits to consumers from trade creation tend to be dispersed across the regional grouping, the gains on the production side following the elimination of internal tariffs on trade tend to be location- and sector-specific. Hence the net welfare gains may vary substantially across members of the union. Moreover, while these initial gains may reflect static comparative advantage, these initial distributional

effects can be locked in as economies of scale and agglomeration in specific locations are reinforced. Thus skill-intensive production will tend to converge to these high-skill and high productivity locations, a process that can be reinforced by the location of regional infrastructure, both hard, such as roads and communications, and soft in the form of higher education and training institutions. Viewed through a lens of dynamic comparative advantage, these processes of divergence may reflect intrinsic advantage but equally may reflect the cumulative effects of "first-mover" advantages.

These pressures towards economic divergence can and do threaten the political viability of regional economic arrangements when the benefits from economic integration are perceived to be poorly distributed. Many analyses of the collapse of the original East African Community in the 1970s identify perceptions that the trade diversion gains from integration were increasingly concentrated in favour of the dominant economy of the time, Kenya, as the root cause for its collapse (Hazelwood, 1979). Similarly, an important and much-contested element in the history of the origins of the American Civil War – aside, of course, from the primary issue of slavery – concerns how changes in the (common) external tariff in ante-bellum America generated powerful distributional effects that triggered a deep and ultimately existential threats to the United States and brought to the fore deep questions about the rights and autonomy of individual States relative to those of the Federal government. Essentially, manufacturing (and shipping) interests in the Northern US benefited from increased tariff protection for its industry; agricultural interests in the Southern states which were dependent on shipping and also net consumers of manufactured goods from the North, were opposed, as each tariff increase adversely affected their external and internal terms of trade. Tariff increases through the early 19th century – starting with the so-called 'Tariff of Abominations' of 1828 – put the Union under increased stress and precipitated regular and intensified political and constitutional crises through the decades leading towards the cessation of the Confederate States in the early 1860s.

As the paper discusses later, the management of these pressures centre on the deployment of fiscal arrangements. First, however, we consider how these stakes are raised with monetary union.

Upping the stakes: the economics of monetary union

Countries enter into monetary unions for three main reasons, the balance of which may vary even across partners within a given union. These reasons are: to accelerate a process of union-wide political integration; to improve the quality of monetary and exchange rate policy; and, to promote and support trade, financial and real economic integration with union partners and the rest of the world.

The first of these motivations is virtually always present and is a crucial part of the motivation for unions across Africa. The second is particularly relevant for countries with histories of monetary instability: these countries may view the delegation of policy to a supra-national authority as a way to reduce inflation bias and promote greater macroeconomic stability. The final motivation is a stated objective of the EAC and has typically played a role in grand plans for monetary unions across sub-Saharan Africa, although as the European case has shown, questions of political confederation are highly contentious.

At a technical level, creating a monetary union involves the member countries relinquishing nominal exchange rate adjustment as an instrument of (country-level) economic policy and simultaneously accepting a common monetary and exchange rate policy, typically set and/or managed by a supra-national central bank. The common monetary policy may take various forms, depending on choices over the nominal anchor: the bank may choose to fix the common exchange rate (as in the CFA Franc Zone); it may let the (common) exchange rate float and set the common interest rate in order to stabilize the union-wide aggregate economy in the face of external shocks (as occurs in the Eurozone, at least in normal times, and is anticipated in the EAMU Protocol); or it may adopt some hybrid framework in which it uses both the interest rate and exchange rate intervention to pursue an agreed set of objectives (see, for example, Ostry et al, 2012). The hybrid framework is the closest to the current national monetary policy frameworks adopted across many African countries, including the "Big Three" EAC partner states, where monetary frameworks are fundamentally focused on hitting an inflation target but where consideration is also given to managing exchange rate movements, at least over the short-term.

The central policy challenge facing policymakers is that when countries form a monetary union, they accept a centralized common monetary and exchange rate policy, set and managed by a supra-national central bank, yet continue to operate a decentralized fiscal policy, which remains under the control of national governments. This two-level assignment of responsibility is what distinguishes a monetary union from a full fiscal or political union,⁵ and unless or until countries move toward full fiscal and political union, the proposed monetary union requires the creation of explicit fiscal institutions to coordinate between the two levels of authority.

These institutions are required to function both over the medium term to secure the integrity and prosperity of the union in the face of pressures leading to economic divergence; and over the short-term to ensure that individual partner states can implement efficient response to macroeconomic imbalances when nominal exchange rate adjustment is not an option but where "internal devaluation" may be difficult and/or protracted.⁶ The former task – adjustment – is concerned with eliminating misalignment of the economy relative to its medium- to long-run equilibrium, in particular, when the economy's long-run equilibrium is altered by, for example, shocks to technology, demographic pressures, resource discovery and external developments such as structural changes in the terms of trade, world interest rates and capital flows. The latter, which is a stabilization task, is concerned with the deployment of policy instruments in the short-run to keep the economy on or close to its equilibrium path, where the latter is the level of economic activity characterized by low and stable inflation combined with the absence of significant involuntary unemployment of resources. Both matter, but our focus here is primarily on the issue of stabilization.

Assignment and policy coordination: the single country case

It is useful to first recap the principles of monetary and fiscal policy coordination in the context of a single country. This benchmark highlights the precise nature of the policy coordination problem that confronts monetary unions. In a single country, the authorities have the freedom to deploy their fiscal and monetary policy instruments

as they wish to achieve their stabilization objectives. However, contemporary views on macroeconomic policymaking in a single country have settled on a relatively straightforward view of the fiscal-monetary coordination problem that has proven relatively robust, the Global Fiscal Crisis notwithstanding.

In this setting, monetary policy is assigned the task of providing a nominal anchor for prices ("controlling inflation") which, in turn, depends on the choice of nominal exchange rate regime and, subject to this, stabilizing the economy in the face of shocks that otherwise knock it off its equilibrium path. It does this using the interest rate (or reserve money) as its policy instrument. Faced with excess aggregate demand leading to over-heating, a rise in the interest rate would reduce excess demand, by reducing the interest-sensitive components of expenditure, and thus bring inflation back to target. The same runs in reverse if there is a deficient aggregate demand. The effectiveness of this stabilization function depends on strength, reliability and predictability of the monetary transmission mechanism, a topic on which there has been substantial research, including on the economies of low income countries (for example, Mishra et al, 2012). With monetary policy shouldering the burden of short-run macroeconomic stabilization, fiscal policy is assigned a dual mandate of anchoring the long-term sustainability of public debt which in turn means targeting an overall fiscal balance that is consistent with debt-sustainability, and determining the composition of public expenditure and the structure of taxation. These compositional considerations are fundamentally long-run or supply-side considerations where the aim is to make sure the economy operates with an efficient quantity of public infrastructure capital and that this is financed by a tax system that minimizes distortions and is consistent with society's distributional considerations.

In reality, of course, the clean separation of roles implied by this description of the assignment is less distinct. For example, in mature economies, the tax and expenditure systems also embody a fairly powerful degree of "automatic stabilization" – taxation falls and non-discretionary expenditures such as unemployment benefits and other welfare spending rise as the economy goes into recession and vice versa without purposive changes in tax rates or spending decisions. Automatic stabilizers add a counter-cyclical element to fiscal policy thereby supporting the stabilization efforts of monetary policy. Automatic stabilizers tend to be weak(er) in emerging markets and developing countries. On the expenditure side, countries are less likely to have well-developed unemployment benefits and other welfare-based payments, and on the revenue in part because tax revenue – which tends to be dominated by indirect taxes – tend not to be less cyclical. As a result, in many emerging market and developing countries the fiscal stance tends to be pro-cyclical (i.e. it has an element of "automatic destabilization") so that other things equal a "do-nothing" fiscal strategy exacerbates rather than eases the stabilization burden placed in monetary policy, requiring a more aggressive deployment of monetary policy.

On the other side of the ledger, monetary policy may also play a quasi-fiscal role, most notably through its role as lender-of-last-resort, under which the central bank can use its own balance sheet to supply liquidity to distressed institutions. Since the central bank is generally a public institution, this ultimately entails pro-cyclical quasi-fiscal effects.⁷ The coordination between fiscal and monetary policy can usefully be described in game-theoretic terms where both parties have well-defined and incentive-compatible

objectives. Suppose the central bank has a clear mandate to pursue price stability and that its actions are credible in the sense that the fiscal authorities know and fully anticipate the reaction of the central bank to its fiscal actions. Specifically, if the fiscal authorities loosen the fiscal stance thereby generating excess aggregate demand, the central bank will tighten the monetary stance to neutralize the fiscal expansion and vice versa if the fiscal authorities tighten fiscal policy. Anticipating the central bank's response, the fiscal authorities will therefore internalize the monetary policy reaction when they, the fiscal authorities, make their own policy choices. This generates an essentially stable outcome and is sometimes referred to as the fiscal authorities acting as a "Stackelberg-Leader".

As described, this policy assignment is internally consistent and since questions of policy coordination are incentive compatible no specific institutions of policy coordination are required beyond the creation and maintenance of an independent central bank with a clear stabilization mandate and fiscal authorities that value macroeconomic stability and understand the rules of the coordination game.

Policy assignment in a monetary union

Things are different in a monetary union, since there is an additional dimension of how responsibilities are partitioned between national and supra-national institutions. The conventional assignment of stabilization to monetary policy and medium-term fiscal discipline and public sector solvency to fiscal policy still applies except now the former is centralized under a single supra-national agency – the regional central bank – and the latter is decentralized to national fiscal authorities that retain full authority over taxation, aggregate government expenditure and the issue of public debt. This creates two tensions, the management of which constitute the essence of macroeconomic policy in a monetary union.

The fiscal free rider problem

The first challenge a monetary union must contend with is a fiscal *free rider problem*. This problem, which does not arise in the single-country case (although does raise its head in federal states, where states have discretionary tax and spend powers), emerges from the fact that in a monetary union, national fiscal authorities have an incentive to run a looser fiscal stance (or face a lesser incentive to adopt necessary fiscal contraction in the face of adverse developments) than if they operated in a unitary system. This is because the supra-national central bank will respond to the impact of fiscal expansion on the aggregate demand of the union *as a whole* and hence the consequences of its offsetting actions are shared across all union members. This creates an externality: the nation state enjoys the full benefit of its fiscal action but bears only a fraction of the cost of the offsetting action by the central bank. In other words, the internal consistency that characterises the Stackelberg coordination game in the single-country case is weakened; the individual country thus expands more than it otherwise would (it free-rides), creating an inflation bias in which the monetary union economy as a whole will end up with higher inflation and lower external competitiveness for all members of the union but without generating any output gains to the country in the long run.

This fiscal free rider problem is of particular concern when the costs are borne by an external guarantor, such as in the CFA franc zone. The willingness of France to bear

the cost of the continuously loose fiscal position amongst most, if not all, CFA member states meant that by the mid-1990s the CFA real exchange rate was severely overvalued. The 1994 devaluation, which saw the CFA franc depreciate by 100% against the French Franc/ Euro, restored competitiveness for a while but did not address the underlying problem and in both the West African and especially the Central African Franc Zones, real exchange rate misalignment and loss of competitiveness remains a serious concern.

Thus, when fiscal policy is a delegated function, the collective action problem means that the system is not self-regulating as in the single country case and so the fiscal free-rider problem needs to be confronted in the design of monetary union institutions. Addressing these spillover risks requires some additional constraints on national fiscal behaviour. In practical terms, this translates into the set of targets on countries' fiscal deficits and public debt stocks, often accompanied by a schedule of sanctions or other punishments for non-observance.

In the European context, this was the central function of the fiscal chapters in the Maastricht Treaty (1992) and associated Stability and Growth Pact (1997). The macroeconomic criteria defined in the EAMU Protocol (both for attaining and maintaining monetary union) mirror the Maastricht and Stability and Growth Pact (SGP) criteria. But as will be seen in the next section, while these inflexible rule-based measures seek to address free-riding concerns, they may have important negative implications for the extent to which fiscal policy can also be used to address the second concern about macroeconomic stabilization in a monetary union, namely, the need for an active counter-cyclical fiscal policy to counter latent pressures for real economic divergence.

The need for active counter-cyclical fiscal policy

The need for an activist fiscal policy arises as a direct consequence of the transition from the single country to the monetary union which removes monetary instruments from the policy toolkit of national authorities. With monetary policy no longer addressing stabilization *at the individual country level*, fiscal policy may need to take greater responsibility for macroeconomic stabilization, particularly in environments where the countries in the union are subject to asymmetric and/or idiosyncratic shocks. Failure to do so exposes individual countries and hence the monetary union to pressures of economic divergence, the resolution of which through other means is inefficient and disruptive.

The Walters Critique

The clearest way to understand how centrifugal forces can play out in the macroeconomic policy domain is through the lens of the so-called "Walters Critique". Named after Alan Walters, who served as economic adviser to British Prime Minister Margaret Thatcher in the late 1980s, the Critique probably did more than anything to keep the UK outside the single currency arrangement. It starts from the observation that the key relative prices keeping an economy on its balanced and sustainable growth path, as defined above, are the real exchange rate and the real interest rate where the latter governs the inter-temporal balance between aggregate consumption and aggregate saving. Monetary union fixes the nominal exchange rate between partner states while the supra-national central bank sets a single nominal interest rate for all partner states. What then determines a country's real exchange rate and hence competitiveness relative to other members of the union is the difference in their respective price levels; and what

determines a country's real interest rate is the difference between the supra-national nominal interest and its country-specific domestic inflation rate. Given actions at the supra-national level, both these relative prices are endogenous; in other words, they are not under direct policy control of the partner states.

To see how this can lead to macroeconomic divergence, consider the case where a member of a monetary union experiences a positive demand shock (for example, an unbudgeted increase in public salaries) that puts upward pressure on prices and inflation in that country, and where this shock is not experienced by other countries in the region. If this country was operating its own monetary policy, the national central bank would raise the nominal interest rate so as to increase the real interest to choke off the excess demand and bring inflation back to target.

But if the supra-national central bank does not change the nominal interest rate, because the expanding country is small relative to union as a whole, or does so by less than the increase in domestic inflation, then the rise in domestic prices means the real interest rate (defined as the nominal interest rate adjusted by inflation) in the country will actually fall. But this is precisely the opposite of what is needed! In the face of a booming economy, the falling real interest rate further stokes price pressures, leading to a further overheating of the economy and, as prices rise, the economy becomes less and less competitive and the current account balance with the rest of the union and the rest of the world worsens. This is a process of economic divergence.

Exactly the same mechanism works in reverse: a negative shock which reduces aggregate demand and reduces inflation should be accompanied by a fall in the real interest rate to stimulate demand. But with the nominal rate given by the central bank, the fall in domestic inflation leads to a rise in ex post real interest rates which would exacerbate the recession. Appendix I shows how this divergent process emerged in Europe over the first decade of European monetary union.

This is the Walters Critique: the corollary is that since the centralized monetary policy does not react to these pressures towards divergence, then national fiscal policy may need to step in to play a more active counter-cyclical role to lean against the tendency for the monetary union's common monetary policy to exacerbate the problem of macroeconomic stabilization. Thus, when the economy is over-heating relative to the union as a whole, fiscal policy should be tightened and vice versa when it is in (relative) recession.

Clearly, if all countries faced similar shocks then the aggregate monetary policy would be optimal for each country and the Walters Critique would evaporate. Similarly, if the monetary union was truly an optimal currency area where factor mobility was complete and wage and price rigidities were absent, then private adjustment to even idiosyncratic shocks would be efficient and fiscal policy would have no role to play. But these textbook settings do not exist in reality and hence the Walters Critique remains relevant: left to its own devices, a monetary union subject to asymmetric shocks will be vulnerable to cumulative pressures towards economic divergence with expanding countries running ever expanding current account balances and those on the other side ever greater surpluses.

Without active counter-cyclical fiscal policy, the resolution of these pressures can come through two channels, neither of which is attractive but both of which have characterized different phases of the European experience. First, on the gradualist path, when there is no access to nominal exchange rate adjustment, convergence will eventually occur through "internal devaluation". As domestic inflation rises in the booming country, the real exchange rate becomes less competitive and eventually output growth slows as export demand falls and that sector contracts, laying off workers. This starts to put downward pressure on domestic prices and equilibrium will eventually be restored. The cost of internal devaluation is that it is slow and requires prolonged recession in the domestic economy; the "sacrifice ratio" is high.⁸ The alternative is more abrupt and comes about when creditors are no longer willing to finance the current account deficit. In this case, debt is not rolled over, there is a "sudden stop" and the current account adjustment must take place rapidly and at considerable cost, typically through an abrupt and very deep domestic recession, debt restructuring or some other form of emergency adjustment, such as an IMF adjustment programme. This too entails "internal devaluation", albeit more dramatic.

Summary and implications

How then should policymakers respond to these competing pressures on fiscal policy? To what extent should they privilege fiscal rules to address the free-rider problem relative to fiscal discretion to offset the Walters Critique problem? What is striking about original European Stability and Growth Pact was the apparent absence of concerns about the Walters Critique and the need for stabilization role of fiscal policy; the rationale for the Pact rested entirely on the concern about the free-rider problem. This seems to reflect in part a widely-held belief that the automatic fiscal stabilizers would be strong enough to give fiscal policy the counter-cyclical leverage required to support short-run stabilization objectives; in other words, a belief that the system was self-correcting. As the evidence from the periphery countries such as Ireland, Greece, Spain and Portugal during the Eurozone crisis showed, this was not the case: even with some degree of automatic stabilization in the fiscal system, the overall fiscal stance was strongly pro-cyclical.

This is an important observation since we know that automatic stabilizers are weak or non-existent in low-income countries, including those in Africa. It is notable, though, that in the EAC Protocol and the broad discussion of convergence criteria in the Economic Community of West African States (ECOWAS), the CFA zone and elsewhere tend to closely follow the original European SGP and are defined in terms of ceilings rather than reference rates around which the fiscal position can move over the short- to medium-term.

Other beliefs appeared to reinforce this confidence in the systems' self-correcting ability. First, it was believed in Europe that the act of forming a monetary union itself would accelerate the deep real economic integration set in motion by the Single Market provisions of the EU, so that labour mobility and wage flexibility would be enhanced. Moreover, several influential academic papers from the early 1990s argued that a monetary union would lead to a convergence of economic cycles so that shocks were less likely to be asymmetric across member states. Taken together, these two anticipated developments – which did not in the end come about – would weaken the force of the Walters Critique. Moreover, even if asymmetric shocks persisted and automatic stabilizers were weak,

there was the expectation that financial markets would be the missing a "disciplining institution" in the system. The expectation was that markets would enforce medium-term fiscal discipline by pricing the debt of countries differentially. Countries on an excess demand path whose current account deficits were growing rapidly – because of either Walters Critique or spill-over effects – would find investors demanding ever higher risk premia which would choke off lending and hence force adjustment, and vice versa.

The experience from the EU was that a disciplining device did not materialize – at least not until the risk of full sovereign default became apparent – when market discipline was anything but disciplined. Rather, at least up to 2007, there was a strong belief in the financial markets that Eurozone country debts were treated as inter-changeable because market investors did not believe the "no bailout" provisions in the Maastricht Treaty and SGP were credible. Not only did markets genuinely believe that credit risks had truly reduced in the brave new world of the Euro, they could not conceive that the various institutions of the Commission and the ECB, would ever allow sovereign default. This belief was sufficient to reduce country risk premia and as a consequence to neutralize the markets as institutions of country-level fiscal discipline.

As it turned out, this belief was correct; when pressures did seem to threaten the systemic integrity of the Eurozone – at which point the country risk premia on the debt of distressed economies of Portugal, Ireland, Greece, Spain and Italy became astronomically high – "troika" of the IMF, European Commission and ECB, took actions to prevent open sovereign default (although it got very, very close with Greece).⁹

The final reason is political: powerful nations in Europe, most notably Germany, were sufficiently concerned about moral hazard problems – small countries would free ride on the macroeconomic discipline of the large – that they were implacably opposed to granting too much discretionary fiscal autonomy. Hence the strict SGP rules and the absence of any bailout or lender of last resort provisions. Much of the Eurozone history, certainly since the Eurozone crisis of 2010, has been a process of ex post adjustments to the architecture to address the consequences of these earlier errors and misconceptions. There remains a reluctance on the part of many policymakers, especially in Germany, to allow for greater fiscal flexibility in the Eurozone, but some progress is being made. Clearly, if the architects of deeper regional integration in Africa believe the same structural features prevail on the continent – and there are strong reasons for believing they do – it is advisable to address them from the beginning.

Political foundations of deep regional integration

There are two opposing views about the fundamental nature of deep regional integration – as exemplified by the monetary union. The first is that an "incomplete" monetary union such as exists in Europe today cannot be a stable (economic and political) equilibrium and hence participants in such a union face the choice between either advancing towards full and credible political union, possibly quite rapidly, or retreating back to structures of regional integration based on single markets for goods and services (and possibly for capital and labour) factors but retaining macroeconomic sovereignty at the national level. In terms of the four stages of the EAC project,¹⁰ for example, this view holds that unless the Partner States are committed to moving to political federation (Stage Four) with all deliberate speed, they must seriously question the wisdom of seeking to establish a monetary union (Stage Three) and instead focus

their attention on consolidating Stages One and Two (the customs union and single market) of regional integration.¹⁴

The alternative view argues that the "instability" of the European monetary union, for example, is not inevitable but rather reflects errors in design. In other words, a monetary union can endure as a broadly stable equilibrium without full political union, even though an effective and resilient design will necessarily require that some degree of economic sovereignty be ceded to the supranational level.

Proponents of the former view that a monetary union cannot survive in the long run without deep political union, often point to the historical record which reinforces the claim that monetary unions not embedded in full political unions tend not to endure. It is no accident, they would claim, that three of the more successful monetary unions of current times are the United States, the United Kingdom and, perhaps, the United Republic of Tanzania. The clue is the same: common currencies persist only when underpinned by a sovereign state. Supporters of this view also tend to cite examples of "failed" monetary unions: the incomplete Latin Monetary Union between France, Belgium, Switzerland and Italy that existed from the mid-19th century until the First World War; the Scandinavian Monetary Union of 1873, which eventually collapsed when Norway gained its own political independence from Sweden in 1905; and the Irish monetary union with the UK which ended in 1979 as the Republic of Ireland sought to align itself with the European exchange rate "snake", the precursor of the exchange rate mechanism of the European Monetary System.¹² Amongst those successful unions, the sequencing may differ. In the case of the United Kingdom, political unification (the "Union of the Crowns" in 1603) predated monetary union ("the Union of Parliaments" in 1707) by more than a century. But as the example of 19th Century Germany shows, political union may in fact actually post-date monetary union, although the forces driving the political union were very much in the train by the time the functional components of unification were enacted. The north German Zollverein (customs union) was formed in 1834 out of a panoply of smaller state-level customs arrangements but was dominated by the emergent Prussian state. By 1847, a common central bank and single currency had been established to serve the Zollverein, some 25 years before Chancellor Otto von Bismarck's eventual creation of the modern German state in 1871. The common central bank became the Reichsbank in 1875 before it was replaced by the Bundesbank at the end of the Second World War.

One of the leading scholars on monetary union in Europe, Paul de Grauwe, recently offered a robust summary of this "full integration" position in a paper aimed at drawing lessons for East Asia from the recent European experience. His conclusion is worth quoting in full:

"The only governance that can be sustained in the Eurozone is one where a Eurozone government backed by a European parliament acquires the power to tax and spend. This will then also be a government that will prevail over the central bank in times of crisis and not the other way around. This will also be a government that has the political legitimacy to impose macroeconomic and budgetary policies aimed at avoiding imbalances. Put differently, the Eurozone can only be sustained if it is embedded in a fiscal and political union" (De Grauwe, 2016:16).

If de Grauwe is correct and African governments are not genuinely committed to full political union, however this is configured, this leads to the question of whether effective real economic integration – in terms of goods and services (the customs union) and factor markets (the single market) – requires monetary union. Or, to put it slightly differently: does the absence of a full monetary union significantly limit the gains from real economic integration between separate sovereign states, particularly over the medium- to long-run? Part of the impetus behind the Eurozone was clearly that it does,¹³ but this view is not universally held. For example, the position that ultimately prevailed in the UK in the context of the debate over British membership in the Eurozone in the late 1990s was that the real gains from participation in the European single market would not be jeopardized by failing to adopt the Euro and that the balance of risks favoured remaining outside monetary union. The UK thus remained a full and (at least at that time) enthusiastic member of the EU but chose not to participate in the Eurozone.¹⁴ This view is also held much more widely outside the European context, with the foremost example being the relationship between Canada and the US (and Mexico). At no stage in the development of the Canada-US Free Trade area in the 1980s or its successor, the North American Free Trade Agreement (NAFTA) which was created in 1994, was there a view that real economic integration or the integrity of the free trade area was threatened by the absence of a monetary union. A similar story could be told about the ASEAN nations who have made significant steps towards real integration but have not, despite much discussion, made any substantive moves towards a monetary union. This is, in fact, the fundamental message of de Grauwe (2016).

These are powerful arguments that need to be taken seriously. However, the view is contested by an extensive and respected literature that argues that a well-designed monetary union that recognizes the inherent economic tensions that will arise can be constructed and sustained without full political union or confederation. As I noted above, however, such a design is likely to require the partner states to reform their domestic political structures; put in place fiscal and/or risk-sharing mechanisms at the supra-national level; and ensure that these are adequately resourced.

In the next section, some of the key implications from this review for the design of specific fiscal and quasi-fiscal institutions are examined.

Institutional design and resourcing

To recap, deep regional integration requires fiscal and other institutions to secure convergence and place countries on a path towards an initial macroeconomic equilibrium as the union is formed without "baking-in" structural imbalances to the post-union configuration; to maintain macroeconomic convergence once a monetary union has been established; and to allow member countries to adjust to idiosyncratic and asymmetrical shocks across the union when nominal exchange rate adjustment is not an option but where "internal devaluation" may be difficult and/or protracted so that the Walters Critique looms large. In addition, the supra-national central bank will require lender-of-last-resort facilities to manage liquidity to government and the financial sector.

Stabilization facilities in monetary unions

Stabilization facilities are risk-sharing mechanisms designed to mitigate the costs of adjustment faced by member states faced by shocks that are less than fully

accommodated by the common union-wide monetary actions, either because the shocks are idiosyncratic (and hence elicit no common monetary response), because they are asymmetric (so that from the perspective of one or more partner states monetary policy moves in the "wrong direction"), or because the magnitude of the shocks differ (policy moves in the right direction but not far enough). Since a monetary union removes a policy instrument at the country level, national central banks no longer have the capacity to tighten or ease liquidity off their own balance sheets to support short-run macroeconomic adjustment. Governments can borrow in the common currency, of course, but this becomes akin to foreign currency debt in a single-country setting (since, in popular terms, the national central bank can no longer "print money" to "inflate away" domestic debt through their own balance sheet operations and hence this debt can only be serviced from the government budget). To avoid macroeconomic and fiscal shocks generating liquidity crises, therefore, monetary unions need to be supplemented by back-stop lending facilities.

The rationale for supranational stabilization facilities is based on three ideas. First, when the authorities are unable to use monetary policy, the whole burden of adjustment falls on fiscal instruments. Even if counter-cyclical fiscal policy is in place, fiscal policy can be temporarily overwhelmed by events. It cannot react quickly enough or to an appropriate magnitude to address incipient imbalances. Second, even if fiscal policy is effective in the long-run, since relative prices never adjust as quickly as a flexible exchange rate could, real exchange rate adjustment still relies on "internal devaluation" which is necessarily more sluggish, even when supported by fiscal policy and, as a result, is more costly to achieve. Finally, even in the context of short-term stabilization, the premium on external market finance may be strongly counter-cyclical, falling when the economy is strong and rising when it is hit by adverse conditions so that external private market finance may be punitively expensive or even unable exactly when government most needs to borrow.¹⁵

This rationale is directly analogous to the fundamental principles of IMF core lending facilities in the Bretton Woods fixed exchange rate era. Article I[v] of the IMF Articles of Agreement outlining the purposes of the IMF states:

"To give confidence to members by making the general resources of the Fund temporarily available to them under adequate safeguards, thus providing them with opportunity to correct maladjustments in their balance of payments without resorting to measures destructive of national or international prosperity."

Drawing lessons from international experiences in the use of stabilization facilities is not straightforward. Formal stabilization facilities do not play an important role in the small monetary unions of the Common Monetary Area (CMA) or the Eastern Caribbean Currency Union (ECCU). Nor are they an important explicit feature of the CFA Zone. Stabilization facilities do exist but they are intimately linked with the role of France as the external guarantor of the CFA Franc and as such tend to be negotiated on an ad hoc basis and without full transparency. Moreover, for the (smaller) member states of the CMA and ECCU and for all of the CFA zone countries, the IMF has played an important role as a back-stop (and occasional front-line) provider of stabilization facilities. This has, of course, also been the case for the countries of the EAC – and may continue to be so in the future – but it is important to draw a distinction between

"external" stabilization facilities and "internal" risk-sharing mechanisms.

National-level fiscal stabilization may be feasible if a high degree of fiscal flexibility prevails and/or if automatic stabilizers are strong. On the other hand, a supranational mechanism is likely to be favoured if domestic fiscal structures are relatively inflexible and pro-cyclical and if domestic debt markets are thin.

It follows, that, as with IMF resources, stabilization facilities should be revolving funds that are neutral in the long run and based on temporary loans that are repaid and allocated under clear conditionality. Stabilization facilities should grow over time – through increased subscription – but only in line with the level of economic activity in the union. Crucially, given the powerful incentives arising from the fiscal free-rider problem, stabilization facilities should not be used to support "permanent" transfers and should not undermine incentives at the national level to put in place appropriate policy measures to improve fiscal flexibility and resilience. The relevant principle in this case is one of solidarity and mutual self-interest (since the whole of a union will generally bear at least some of the cost of protracted recession in any member state).

Rules vs discretion and the design of stabilization funds

Successful stabilization facilities need to be able to respond quickly to (or even in anticipation of) shocks that might otherwise have triggered a monetary policy response which requires a degree of discretion in fiscal policymaking. But the need for fiscal discretion must deal with a range of problems. Failing to address these problems increases the likelihood that an initially flexible stabilization fund designed to operate as a rotating "insurance-like" institution morphs into a "transfer union" that channels resources from consistent creditors to consistent debtors in a manner that leads to the exhaustion of the fund, pressures to replenish and a growing perception that the underlying insurance rationale has been eroded.

The first concerns the nature of the shocks to which the facility is designed to respond and hence the efficient size of the fund. Conceptually, the payout pool would need to be large enough to cover the expected value of the loss of consumption faced by the group. Clearly this expected value will increase the larger the individual shocks are assumed to be, the longer their duration (or the more serially correlated they are through time) and the more correlated they are across members of the group.¹⁶ The harder issue to address concerns the duration of shocks. The theory of "consumption smoothing" tells us that it only makes sense to draw finance from the stabilization facility if the initiating shocks are perceived to be transitory. If the shocks are persistent, the appropriate policy response entails some degree of structural adjustment (to the level of consumption) rather than drawing down on a stabilization fund (although some resources may be released to smooth the transition). The problem facing policymakers is to determine whether a shock, such as a fall in commodity prices, is transitory and when it is permanent. Treating shocks as transitory when in fact they are actually persistent, not only undermines the financial sustainability of the fund (since timely repayment of advances is not possible) but more problematically delays the necessary adjustment by the debtor partner state. And if the stabilization facility is debt-based delayed adjustment raises the risk of an unsustainable accumulation of debt.

This problem of delayed adjustment is exacerbated by the fiscal free rider problem as

discussed above. Countries are subject to potential economic shocks and can confront these by investing in domestic mitigation mechanisms (ex ante) or by undertaking costly measures to deal with the shock (ex post). The third option is to declare a fiscal crisis, avoid the costly remedial measures (ex ante or ex post), and appeal to the stabilization fund for relief. Those running the stabilization fund can choose to grant relief or enforce a "no-bailout" rule and deny financing from the fund on the grounds that countries have not undertaken the relevant investment in mitigation or response to the shock. The fundamental problem is that denial is difficult and the stabilization fund comes under pressure to provide the bailout. But knowing this, the country authorities will face incentives to underinvest in mitigation and to run policies that leave them more vulnerable to shocks in the knowledge that the fund will step in. The incentive to do so is simple: the national authorities enjoy the full domestic benefit of their fiscal choices while bearing only a fraction of the costs (i.e. their contribution to the stabilization fund). The free-rider problem undermines both the financial integrity of the stabilization fund and its political credibility as a risk-management institution.

It may prove difficult for the stabilization fund to credibly enforce the fiscal rule (so that a stabilization fund can function as designed). The most obvious is the "Samaritan's dilemma", the idea that the fund is not able to credibly commit to withhold stabilization funds when the costs are concentrated on a particular group or groups of individuals; but denial is also difficult when a stabilization fund operates by country vote or consensus it can end up being run as a "solidarity network" in which country delegates do not want to deny clemency to their compatriots, in order not to be denied clemency themselves in the future.

This challenge may be exacerbated if the union is perceived to include a deep-pocketed player that may find it hard to deny a bailout to a partner state in distress. This is the challenge facing federal governments in the US, India and Nigeria, for example, and it is the same challenge facing France in its role as implicit guarantor of the CFA Franc zone. Germany plays the same role in Europe (although the German electorate and its government have demonstrated a remarkable resistance to pressures to yield, even in circumstances where a supra-national response may be warranted).

The key lesson from this discussion is that this form of socially inefficient outcome for the union may be an equilibrium unless a fiscal stabilization facility can be underpinned by a credible institutional entity that operates independently of short-term political advantage.

Design and resourcing

Stabilization funds can be set up as a budgetary "transfer union", making direct fiscal transfers from a supranational budget, replenished on the basis of regular contributions from members. But given that a stabilization facility should be able to provide quick-dispersing support to partner states, a short-term lending facility providing short-term credits (in the regional currency) to member states under the monitoring and enforcement of a supra-national institution, either the common central bank or a separate institution. The facility could be part-funded by member state contributions and augmented by the sale of mutualized bonds issued against the balance sheets of the partner states. These bonds could be issued in the new regional currency and/or foreign

currency, depending on the cost of capital and on-lent through the stabilization fund.

One important final lesson from the European experience is that the costs, both economic and political, of introducing stabilization or other risk-sharing mechanisms are likely to be much lower if these institutions are in place *ex ante* rather than built *ex post* following a crisis. If they are in place, such stabilization facilities are more likely to be perceived as genuine insurance mechanisms, available to any country that finds itself the victim of a shock; when constructed after the event such mechanisms are often perceived as a bailout or one-way transfer mechanism and hence attract hostility from the population or taxpayers of the creditor nation with all its attendant problems.¹⁷

The underlying principle is that a good medium-term fiscal stabilization mechanism diminishes the need for countries to call on it. Good design promotes greater investment in domestic fiscal resilience and flexibility which obviates the need for external financial support, while the more credible the underlying fiscal structures, the more likely private capital markets will be willing to provide finance at non-punitive rates.

But stabilization funds do demand significant capitalization. Again there is little comparable evidence but the scale of European schemes is instructive: Funding of the European Stability Mechanism is based on countries' GDP with paid-up capital subscribed from European member states of €140 billion (1.25% of Eurozone GDP) and around a further €560 billion of bonds raised on private capital markets which together support lending activities of around €500 billion, and equivalent to 4.5% of Eurozone GDP. Whether the efficient relative scale of stabilization funds for African regional groupings is likely to be larger or smaller is a moot point. On the one hand, given that African financial sectors are smaller the insurance required against systemic financial crises may be lower. Similarly, if African regional groupings are smaller in number and if shocks are more highly correlated, the common monetary policy will do more of the stabilization work. On the other hand, however, weaker automatic fiscal stabilization capacity and countries' exposure to larger idiosyncratic shocks may argue for relatively larger fund financing. The final consideration for African stabilization mechanisms is the currency in which capital contributions need to be made. In the ESM, given the reserve-currency nature of the Euro and the fact that the shocks to the region are overwhelmingly "internal", contributions are exclusively in the currency of the monetary union. For African arrangements, including the EAC, however, there may be a case for requiring contributions to be partly in the new East African currency and partly in foreign currency.

Structural funds

Given the pressures for economic divergence that deep integration generates, stabilization facilities need to be supported by structural funds. These provide medium- to longer-term support to peripheral areas and to sectors that might be perceived as particularly vulnerable to the centrifugal forces created by economic integration. The members of a union need to stand ready to provide this long-term adjustment financing but this should be seen as a separate lending instrument with no presumption that it is self-financing: in other words, structural funds ought to be budgetary transfer arrangements. Structural and region funds have played an important role in the development of the European Union with outlying regions and "sunset" sectors receiving

transfers from the common budget either to improve access to the core of the regional economy (the "European Roads Fund" for example); to help the management of declining industries that may have moved to lower-cost locations within the union (for example, transitional support to the UK steel industry when the UK was still a member of the EU) or to industries in long-run decline (through agricultural support mechanisms). The current budget for structural funds is approximately US\$100 billion per annum or 0.5% of the GDP of the EU.

Lender-of-last-resort facilities

The final component of institutional support to the deep economic integration associated with monetary union is to substitute for lender-of-last-resort facilities targeted at domestic financial sectors that national central banks can no longer provide. The rationale is straightforward. Within a monetary union, national governments can still issue debt (in the common currency and against the collateral of their own national balance sheet) but the inability of national central banks to directly provide liquidity to the financial system effectively "converts" local currency debt instruments into the equivalent of foreign-currency debt.¹⁸ Because banks operate an inherently risky business model – borrowing short and lending long – they face a rollover risk (the risk that short-term funders do not roll over their lending / deposits). Most of the time the access to the short-run liquidity required to finance rollover risk is provided by the short-run interbank money market but ultimately the model only works if depositors believe that the banks can be rescued by a "lender of last resort" – typically the national government (for example through deposit insurance) or the central bank. In relatively underdeveloped financial markets, where the interbank market is relatively thin, much of the market liquidity is provided by claims on governments (treasury bills, for example); hence without lender-of-last-resort functions national short-term liquidity problems can quickly turn into solvency problems, both for the debtors and, as a result, for the bondholders themselves. The latter are often the banking sector and other financial institutions and the risk is that liquidity crises in the financial sector can quickly get amplified and become self-fulfilling if bondholders fear that liquidity will dry up. This can create a so-called "doom loop" where the banking sector holds substantial claims against government, voluntarily and to meet regulatory requirements. As concerns about the quality of government debt mount these spill over to concerns about banks' balance sheets and as their balance sheets weaken they demand an even higher risk premium on government debt, or engage in fire-sales of assets, putting further pressure on fiscal sustainability. Left unchecked, the spiral of rising risk premiums and deteriorating budget deficits can suck nations into a debt default vortex.¹⁹ The "doom loop" needs a circuit breaker and the supranational central banks' lender-of-last-resort capacity is one such institution. The key point of a lender-of-last-resort facility is simple: it is a "back-stop" commitment device that promises to use the central bank's money-creation facilities to provide liquidity to solvent but illiquid institutions in whatever amounts required to ensure that private investors and banks have confidence in the currency. This is not an ex post transfer or bailout provision but an ex ante promise. Credible lender-of-last resort mechanisms work because they are "off-equilibrium" mechanisms: if successful the provision is never called because their mere existence is sufficient to give confidence to markets. The idea is often summarized in the phrase: "in a crisis instead of staring into an abyss, investors and financial institutions should be able to see a floor".

Lender-of-last-resort provisions are in addition to other short-term standing loan facilities that the supranational central bank may provide. Within a monetary union they must operate at the supra-national level, even if, in practice, they may be implemented through the integrated central bank system.

Conclusion

This paper has reviewed the demands placed on policymakers as they consider and plan steps towards deeper regional economic integration, and particularly towards economic and monetary union. It is easy but wrong to think the creation of a single currency is a technical monetary step. As this paper argues, it is not: it is much more about real economic integration, the pooling of economic sovereignty and the demands this places on national and nascent supra-national fiscal institutions. In considering these steps, three core tensions must be confronted and assessed:

The first is the need to reconcile the tension between the "fiscal free-rider problem", which places an emphasis on fiscal rules designed to constrain debt and the deficit, and the need for fiscal policy to bear more of the stabilization burden, which places an emphasis on fiscal discretion. This "rules versus discretion" tension is particularly acute when shocks are asymmetric across the union, where automatic fiscal stabilizers are weak, when fiscal policy is naturally pro-cyclical and when debt mark are relatively thin, characteristics that describe many African economies. The architects of European monetary union placed disproportionate weight on ensuring the "free rider" problem was contained. In the end, it was not and in fact the lack of attention on the need for fiscal discretion played an important role in the build-up of the crisis. Striking the balance between these conflicting demands will be difficult but it seems clear that the outcome is unlikely to be at either extreme; institutions (and politics) are required to limit free-rider problems but when fiscal policy tends to be pro-cyclical, somewhat greater discretion may be required.

Second, and for this very reason, the basic fiscal-monetary coordination process needs to be supplemented by a clear and flexible supranational stabilization facility that can be deployed quickly and under adequate safeguards to ensure fiscal policy is not overwhelmed in the face of shocks to macroeconomic stability. This entails urgent consideration of the design and governance of stabilization funds and the issue of local (supranational) currency bonds.

Finally, although the paper does not discuss this in depth, the creation of these additional fiscal and other institutions entails a significant resource cost. Surveillance and collective policymaking requires a capacity similar in scope and authority to the surveillance and assessment role currently carried out at a country level by the IMF. Any such body needs to be able to specify the fundamental principles of fiscal discipline to be followed by member states; to assess the macroeconomic coherence and feasibility of members' macroeconomic performance and policies; to formulate policy recommendations for corrective action in response to incipient macroeconomic imbalances; and to follow-up and monitoring of such actions. This is a demanding task which, in effect, requires regional grouping to have their own "regional IMF". Securing this quantity of technical (PhD-level) capacity, without cannibalizing the built capacity already in national central banks and finance ministries will be a serious challenge for the region and one that will have a non-trivial budgetary implication for member states.

Notes

1. President Yoweri Museveni of Uganda; President Pierre Nkurunziza of Burundi; President Uhuru Kenyatta of Kenya; President Paul Kagame of Rwanda; and President Jakaya Kikwete of Tanzania. The sixth member of the East African Community, the Republic of South Sudan, joined the EAC in March 2016 and hence is not a signatory to the Protocol.
2. As stated by the EAC itself, "The process towards an East African Federation is being fast tracked, underscoring the serious determination of the East African leadership and citizens to construct a powerful and sustainable East African economic and political bloc" (see <https://www.eac.int/overview-of-eac>).
3. Although the fourth pillar of the EAC's ambition for regional integration is to establish an East African political federation, progress in advancing this goal has been extremely slow. A "Committee to Fast-Track the EAC Political Federation", known as the Wako Committee, reported on the constraints to federation to the Summit in November 2004 (at a time when the EAC consisted only of the "Big three" of Kenya, Uganda and Tanzania). The Committee recommended an "overlapping and parallel" process to accelerate the move towards federation that would fast-track the functional economic elements of integration (customs union, single market and monetary union) and would institute the election of a federal head of state and executive and legislative branches of government. The Wako Committee report anticipated the first federal elections to take place in 2010, and as a result of the consultative process, the office of Deputy Secretary-General responsible for Political Federation was established in 2006 to coordinate this process. As of the time of writing, however, there has been no formal revision to the Wako Committee report nor has a new timetable for political federation been issued.
4. See, for example, European Commission (2015).
5. Full fiscal union would typically entail an explicit sovereign bailout fund, a banking union and the capacity for individual member states to issue debt in a common debt instrument. Full political union would then bring these enhanced fiscal functions under a single system of political authority and accountability granting it authority in addition over tax and spending powers to a single authority, whether federal or unitary.
6. The key relative price here is the real exchange rate, which can be defined as $e = EP^*/P$ where E is the nominal exchange rate, P^* the "world" (i.e. extra-union) price level and P the 'internal' price level. Devaluation of the real exchange rate (an increase in e) requires either a nominal devaluation or a *fall* in the domestic price level. The fall in domestic prices is referred to as "internal devaluation".
7. When a central bank engages in lender-of-last-resort actions, it typically issues credit against bad or doubtful debts of financial institutions. The losses associated with these rescue operations reduce the dividend the central bank would otherwise remit to government. *Ceteris paribus*, this reduces the fiscal balance. Lender-of-last-resort operations are meant to respond to liquidity rather than solvency crises so that the central bank may reasonably expect to recover these funds in due course (as was the case for the Fed and the Bank of England during their lender-of-last-resort activities in 2008 and 2009).
8. The sacrifice ratio is a measure of output lost percentage reduction in the inflation rate, a measure of the real cost of alternative macroeconomic stabilization efforts.

9. See Varofakis *Adults in the Room: My Battle with Europe's Deep establishment* (Bodley Head, 2017) for a discussion of the unfolding of the Greek crisis and how close Europe came to "Grexit".
10. See <https://www.eac.int/integration-pillars>
11. The Brexit debate in the UK is not about a monetary union but more fundamentally about the earlier stages of integration and the relationship between national sovereignty and the so-called "four freedoms" of Europe – the free movement of goods, services, labour and capital – which define the customs union and single market.
12. By the 1970s, Ireland was the last country of the former Sterling area to retain its original parity with Sterling.
13. See, for example, the (much contested) empirical work by Rose (2000), which suggested a common currency had a very large positive effect on trade. Subsequent analysis suggested that this effect was, in fact, much smaller.
14. In 1997, the Labour Chancellor of the Exchequer, Gordon Brown, established "five tests" designed to assess whether the UK would benefit from membership of the putative monetary union. These were billed as purely economic criteria focused on issues of growth, employment, macroeconomic convergence and the role of the financial sector, although many argued that the five tests had been constructed in such a manner that it would have been virtually impossible to generate an unambiguously positive case for membership, thereby allowing the government to avoid the debate over euro membership becoming (what it surely is) a fundamentally political debate about sovereignty. The Treasury assessment was, in fact, broadly positive but sufficiently cautious to allow the Chancellor to rule out membership "for the foreseeable future". The UK became the only EU member with a permanent opt-out from the Euro. Other members of the European Union have an obligation to move towards membership of the Eurozone with all deliberate speed.
15. Note, the presumption here is that the loss of monetary autonomy deprives a country of its capacity to conduct short-run stabilization precisely because monetary policy was previously effective in stabilizing output. While this might have been the case in Eurozone countries, it is less clear that in low income countries monetary policy actually played any decisive role in stabilizing output (as opposed to anchoring inflation over the medium term). This does not preclude consideration of a stabilization facility in the future: the relevant criteria is whether such a mechanism supports effective macroeconomic management in the future, regardless of individual countries' past track-record on stabilization.
16. There is a caveat to this last point since the more correlated the shocks are across countries, the more the common monetary policy in the union will act in the interest of each member and the less demand will be placed on the stabilization fund.
17. This was the experience in Europe where reform proposals – such as European Stability Mechanism (ESM) and its predecessor the European Financial Stability Facility (EFSF) – that would probably have been accepted initially by member states faced consistent opposition from Europe's major creditor nation, Germany, on the ground that they function simply as bailout mechanisms for Greece and other southern debtor nations.
18. This is the reason why the creation of a monetary union is often described as swapping exchange risk for credit risk.
19. This happened to Greece, Ireland and Portugal and came close to happening to Italy, Spain and Belgium. The "doom loop" is a cause of the sudden stop and contagion in the sense that it opens the door to self-fulfilling crises. It makes monetary union

vulnerable to shocks that get amplified all out of proportion even if the initial debt imbalances are not extreme.

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Appendix

Cumulative divergence and delayed response: Lessons from the Eurozone

The period from the introduction of the euro in 1999 until about 2007 saw a substantial build-up of macroeconomic imbalances within the Eurozone area. On the one side the periphery countries of Greece, Ireland, Italy, Spain and Portugal (the GIIPS) ran large current account deficits while the northern countries of the Eurozone, especially Germany, ran large surpluses. The debt flows associated with these aggregate imbalances were both public (in the case of Greece) and, at least initially, private (especially in the cases of Ireland and Spain). Moreover, a major feature of these imbalances is that capital flowed into non-tradable sectors, especially real estate and the associated construction sector.

This had three related effects.

- The growth in aggregate demand in the periphery countries was high – this was the era when Ireland was dubbed "the Celtic Tiger" – and this growth boosted public finances, through increased taxes on income and consumption and lower welfare payments.
- Second, however, those sectors attracting capital inflows were not those with high intrinsic growth potential; productivity growth was relatively poor and slipping behind that of the capital-exporting countries such as Germany.
- And finally, since capital was flowing into the non-tradable sectors, demand pressures were dissipated into non-tradable prices; local inflation in the periphery thus rose relative to the northern core countries such as Germany, further exacerbating the loss of competitiveness and driving relative productivity further apart.

The powerful centrifugal process of divergence discussed in the text were thus well-rooted in the Eurozone from its inception and continued right up to the crisis in 2008-2010 (see Baldwin et al, 2015).

To illustrate these dynamics and for simplicity, we focus on only two of the periphery countries, Ireland and Spain, and two of the northern core countries, Germany and the Netherlands. Figure 1 plots the output gaps for the four countries and shows how by late 2001 while output in Germany and the Netherlands was on or just below trend, Ireland and Spain were beginning to experience excess demand.

Under a single-country assignment these pressures would have called forth a rise in the nominal interest rate. However, at the time the Eurozone as a whole was facing a mild recession to which the ECB (correctly) responded by lowering the nominal policy rate to support aggregate demand. But with prices rising faster in Spain and Ireland than in the rest of the Eurozone, ex post real interest rates in both countries were falling (Figure 2) just as aggregate demand was booming, fuelling rather than dampening the boom.

Figure 1: Eurozone output gaps as % of GDP

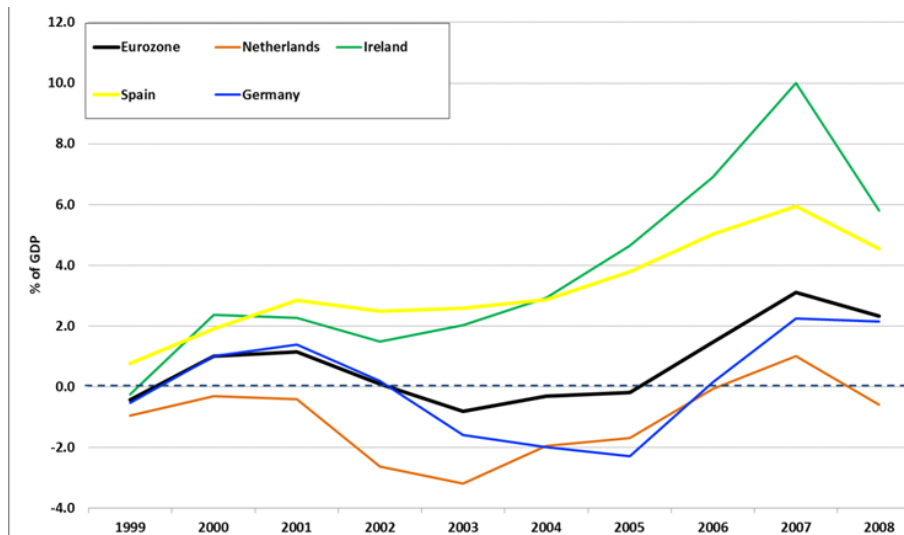
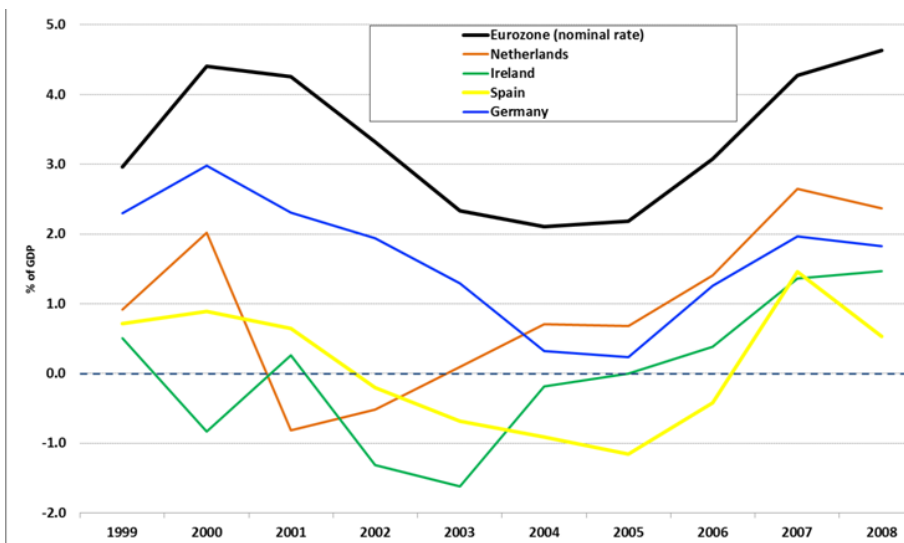


Figure 2: ECB Nominal and Ex post real rates by country

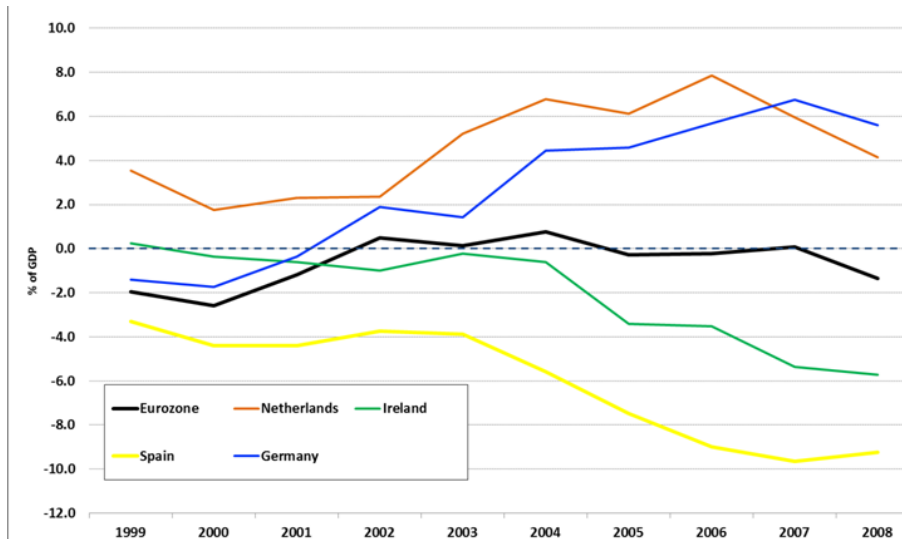


Although rates began to rise after 2005, real rates in the periphery remained extremely low so that aggregate demand continued to surge in both countries, sucking in imports, sharply widening the current account deficit (Figure 3).

What is striking from this figure is that throughout this entire period, the Eurozone current account (i.e. with the rest of the world) remained more or less in balance; the

enormous current account imbalances were almost entirely internal to the zone.

Figure 3: Eurozone Current Account Balances as % of GDP

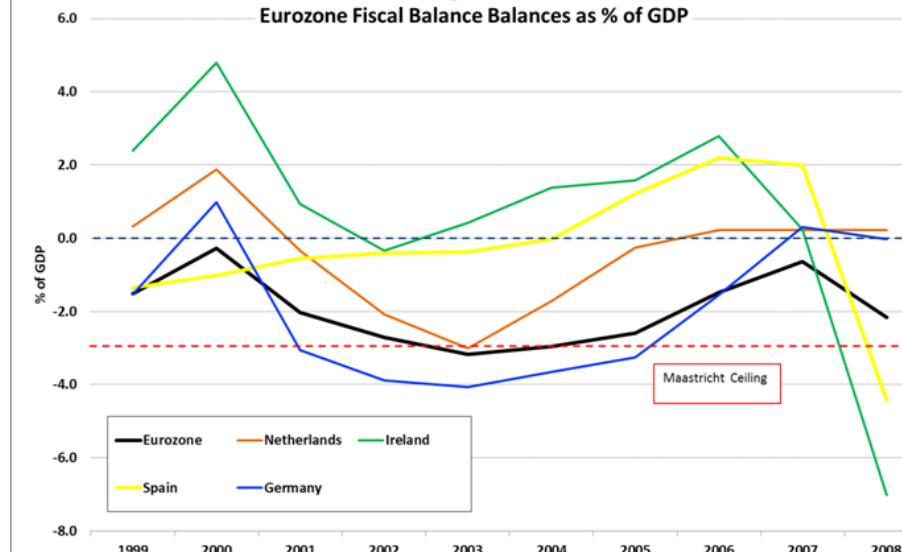


Noting that the current account balance is simply the excess of domestic savings over investment, what was happening at this time was that the excess savings in Germany, the Netherlands and other surplus countries were channelled through the banking system to Ireland, Spain and the other "Southern" deficit countries, where, by definition investment exceeded (domestic) saving.

It is worth reflecting on the nature of the investment. From a neoclassical perspective we would expect capital to flow "downhill" from rich(er) to poor(er) countries, taking advantage of the higher marginal returns to capital in poorer countries (because the latter are relatively capital scarce). The pattern of net saving positions across the Eurozone could (and probably was) viewed as the manifestation of the greater abundance of investment opportunities in these fast-growing "emerging market" economies on the fringes of the European core that were enjoying the initial surge of enthusiasm enjoyed in all the small countries that accompanied the creation of the Eurozone.

Moreover, taking this neoclassical logic to its conclusion, these imbalances would be expected to unwind over time as savings rise in the periphery (savings rise with income and may be accelerated by demographic factors), and as diminishing returns to capital set in and hence lower the expected return to and hence level of investment. From this perspective, these "early" imbalances were seen as intrinsic to a monetary union on a stable convergent path. And maybe they would have been – possibly strongly so – had other factors not intervened. Fiscal policy should have reacted to these developments but it didn't, either at the national or the supra-national level. This failure, however, was compounded by a complacency that markets mechanisms would be sufficient to manage the build-up of current account imbalances. These current account imbalances were increasingly viewed as "a feature" of the system rather than "a bug" that demanded corrective action.

Figure 4: Eurozone fiscal balance balances as percentage of GDP



The final key aspect of this period was the fiscal balance, the only national-level convergence criterion thus far considered. As Figure 4 makes clear, right up to the crisis in 2008, the fiscal position in both Ireland and Spain appeared strong and very substantially in excess of the Maastricht criteria. The corollary to the combination of high current growth, low real interest rates and a strong fiscal position in the run-up to the crisis was that the government debt position was favourable and well below the 60% of GDP as established in the Maastricht ceilings. In 2007, the ratio of public debt to GDP was 24% in Ireland and 34% in Spain. The problem was that these fiscal positions were not sustainable. They were boosted by the combination of the periphery economies "running hot" with output above trend and, moreover, with the sectors of most rapid growth being relatively tax intensive, so that even if debt was relatively low, the true underlying fiscal position in these countries was relatively weak.

