

# **Do Financial Reforms and Financial Development Enhance Merchandise Trade Performance?**

## **Evidence from Eastern and Southern African Countries**

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### **Abstract**

This paper analyses how financial reforms, financial development and trade flows are related in seventeen selected Eastern and Southern African countries. The paper measures trade flows in terms of the shares of exports and imports in world totals for each country, while financial development is proxied by domestic credit to the private sector as a proportion of GDP. A trend analysis of these variables is buttressed by the computation of correlation coefficients. The overall outcome is that financial reforms can be supported as catalysts for financial development which leads to increases in the flows of merchandise trade among ESA countries. The associations appear stronger for exports than they are for imports. However, the exact nature of the associations (as well as their implications on trade balances) tend to vary across countries.

### **1. Introduction**

This paper analyses how financial reforms and financial development are related to exports and imports in the Eastern and Southern Africa (ESA) region. Governments in this region (as well as most of the rest of Africa) adopted financial reforms during the 1980s and the 1990s. In most cases, the reforms were part of broader unilateral Structural Adjustment Programmes (SAPs) supported by the International Monetary Fund (IMF) and the World Bank, aimed at achieving greater economic liberalisation. Financial reforms within SAPs have sequentially focused on, *inter alia*, the decontrol of interest rates and credit levels, removal of entry restrictions and credit rationing, current and capital account liberalisation, adoption of more market-oriented monetary and exchange rate policies, introduction of more market-based financial instruments, as well as strengthening of regulatory functions.

At the multilateral level, financial services liberalisation has also drawn attention under the General Agreement on Trade in Services (GATS). At that level, financial services liberalisation (i.e., trade policy reform in financial services) focuses on the removal of discriminatory regulation (i.e., quantitative or qualitative regulations that discriminate against foreign and domestic financial services providers) with respect to market entry or commercial presence. It entails opening up the domestic financial sector through all four modes of services supply, namely cross-border supply, consumption abroad, commercial presence and permission of entry of foreign natural persons. Policy coherence between SAPs and the multilateral efforts is central, such that the programmes of the IMF and World Bank emphasise the complementary relationship between trade policy reform and domestic reform in order to strengthen the domestic financial systems of member countries (see Jansen & Vennis, 2006).

The unilateral and (to a less extent) multilateral initiatives have resulted in more developed financial sectors among ESA countries. While the reforms and resultant financial development are largely justified as being catalytic to economic growth and development in general (see Francois & Schuknecht, 1999), their hypothesised effects on trade in goods is equally critical.

Several authors have analysed how international trade flows are affected by financial development (see, for instance, Manova 2008; Berthou 2007; Chang et al., 2005; Hur et al., 2006; and Beck 2002). Arguably, financial development can render specific differential benefits between firms that produce for the domestic market and those in the export sector. Exporting firms are assumed to be relatively more restricted by initial entry costs (and fixed costs of exporting) vis-à-vis firms that cater exclusively to the domestic markets. The roles of firm heterogeneity and fixed costs in exporting are increasingly being recognised by trade economists (Melitz 2003; Helpman et al., 2008). Ahn et al. (2011) demonstrate that domestic sales are not affected by the banks' providing trade finance. Chen et al. (2012) observe that trade finance contractions alone could explain about one-third of the drop in exports during the 2008 global financial crisis. Manova (2008) identifies financial development as an added source of comparative advantage. Since every export also reflects an import, these arguments equally locate the significance of financial development on imports. In addition, since the key argument in support of financial development is that it is positively associated with growth and incomes (McKinnon, 1973; Shaw, 1973), this suggests that financial development should also increase imports in addition to exports. The effect of financial development on a country's trade balance is, therefore, unclear and varies according to each economy.

The theoretical expectation, therefore, is that both exports and imports should increase with financial development. However, most of the studies assume that financial development (generally measured as the size of the private financial sector relative to total output) is the direct result of financial reforms, hence attribute the trade effects of financial development to such reforms. It is common in the literature, therefore, to consider increased credit to the private sector as a measure of financial development (e.g., Manova, 2008), and of financial reforms (e.g., Hanif et al., 2008).

This paper analyses how financial reforms, financial development and trade flows are related in seventeen ESA countries. Relative to the existing literature, the paper provides new insights in two ways. First, we contend in this paper that financial development is potentially attainable without financial reforms (e.g., it is possible for private sector credit to exhibit an upward trend in real terms in the absence of major financial reforms), and that it is possible for reforms not to lead to financial development (e.g., when the banking sector becomes more risk-averse after reforms). Hence, we isolate the effects of the two – financial reforms and financial development – on trade flows. Second, most studies investigate the relationships in a panel data context in which few African countries are included among many others globally, hence do not explicitly bring out the specifics relating to African countries (see, for instance, Chen et al., 2012; Manova, 2005; Beck, 2002). To address this, we present the results from country-specific analyses of trends and correlations. The paper provides evidence in support of financial reforms and financial development in most of the countries included in the analysis.

## **2. Specific Objectives and Methodology**

### **2.1 Specific objectives**

We address the following four specific questions in relation to financial reforms, financial development and trade flows in the ESA region:

- a. Have financial reforms led to greater financial development?
- b. Have financial reforms increased trade flows?
- c. Has financial development increased trade flows?
- d. Has the association between financial development and trade flows increased with reforms?

### **2.2 Scope**

This study is conducted on a selection of seventeen ESA countries for which distinct commencement dates for financial reforms can be identified, and adequate data are available on our variables of interest in this paper (see section 2.3), as well as variables tracked in subsequent causal relationships not included herein. The countries and commencement dates for the reforms are presented in Table 1.

Unless otherwise stated, the study analyses experiences for the period 1970 – 2012. Although financial reforms are an ongoing activity and may have been implemented in various forms prior to the commencement dates chosen in this paper, we identify the starting point in such reforms as the point where distinctly major changes (such as relaxation of ownership restrictions and/or interest rate and credit regulation decontrols) occur.

1. Botswana (1987)	10. Mauritius (1988)
2. Burundi (1989)	11. Rwanda (1995)
3. Congo, Democratic Republic (2001)	12. Seychelles (1993)
4. Egypt (1991)	13. South Africa (1980)
5. Ethiopia (1992)	14. Sudan (1997)
6. Kenya (1991)	15. Swaziland (1994)
7. Lesotho (1993)	16. Tanzania (1992)
8. Madagascar (1994)	17. Uganda (1991)
9. Malawi (1989)	

Note: Commencement dates for financial reforms are in brackets

### **2.3 Analytical tools and data**

Two basic tools are employed in this study. First, we conduct a time-trend analysis of exports, imports and financial development. Thus, we analyse the mean values of the trade flows and financial development over time, as well as their time-varying slopes.

Second, we augment the trend analysis results by computing correlation coefficients between exports and financial development, as well as between imports and financial development. Although both the time trends and correlations do not exhibit causal relationships, they provide very revealing responses to all the four specific questions being addressed by the study.

The data used in this analysis are annual time series from 1970 to 2012, but few data gaps relating to our measure of financial development exist for some countries as described in Table 2. Export and import flows are measured as percentages of world totals for each country, and the data are from UNCTAD Statistics. Financial development is measured by domestic credit to the private sector (hereafter private credit) expressed as a percentage of gross domestic product (GDP) for each country, and the data are from the International Financial Statistics of the IMF.

Country	Data Gap
Botswana	Data start in 1972
Ethiopia	Data end in 2008
Lesotho	Data start in 1973
Rwanda	Data end in 2005

Note:  
Save for the few exceptions included in this table, data were for the period 1970-2012 in all other cases

## **3. Results**

### **3.1 Trend analysis**

As a precursor to our country-specific trend analysis, we consider the aggregate picture. Figure 1 presents time plots of aggregate variables for all the seventeen countries in the sample. Since the year of commencement of reforms is not standard across the countries (see Table 1), we consider the period 1970-1984 as the pre-reform period, and 1998-2012 as the post reform period in this investigation. The period 1985-1997 (between the two central vertical lines in the figure) is omitted to

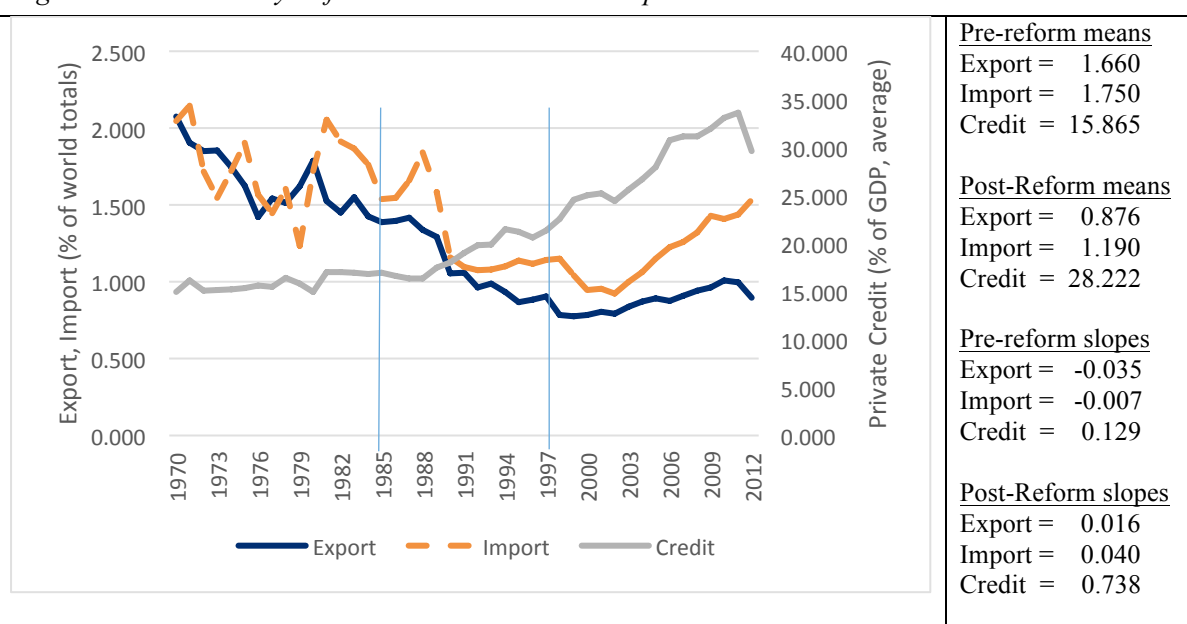
account for the differential commencement dates of the reforms. The key conclusions drawn from this analysis are three-fold:

First, financial reforms have led to greater financial development. Private credit increased by 77.9 percent from an annual average of 15.9 percent of GDP per country in the pre-reform period, to an annual average of 28.2 percent. Moreover, the growth rate in private credit was very slow for all the countries during the pre-reform period (slope of 0.129 in the time trend) but very fast after the reforms (slope of 0.738).

Second, trade flows are significantly lower during the post-reform period than before. The share of world exports by these countries has dropped by 43.7 percent from an average of 1.7 percent before reforms to only 0.9 percent after reforms. Import shares have also declined from 1.8 percent to 1.2 percent. But this observation can be misleading if not viewed alongside (c) below.

Third, both the export and import shares exhibit an upward trend after reforms, compared with the downward trend witnessed during the pre-reform period. From slopes of -0.035 and -0.007 (i.e., negative trend slopes) in export and import shares of world trade respectively, the slopes are reversed after reforms to positive values of 0.016 and 0.040, respectively. At this trend, the higher pre-reform average shares are bound to be surpassed over the next few years.

Figure 1: A trend analysis for all countries in the sample



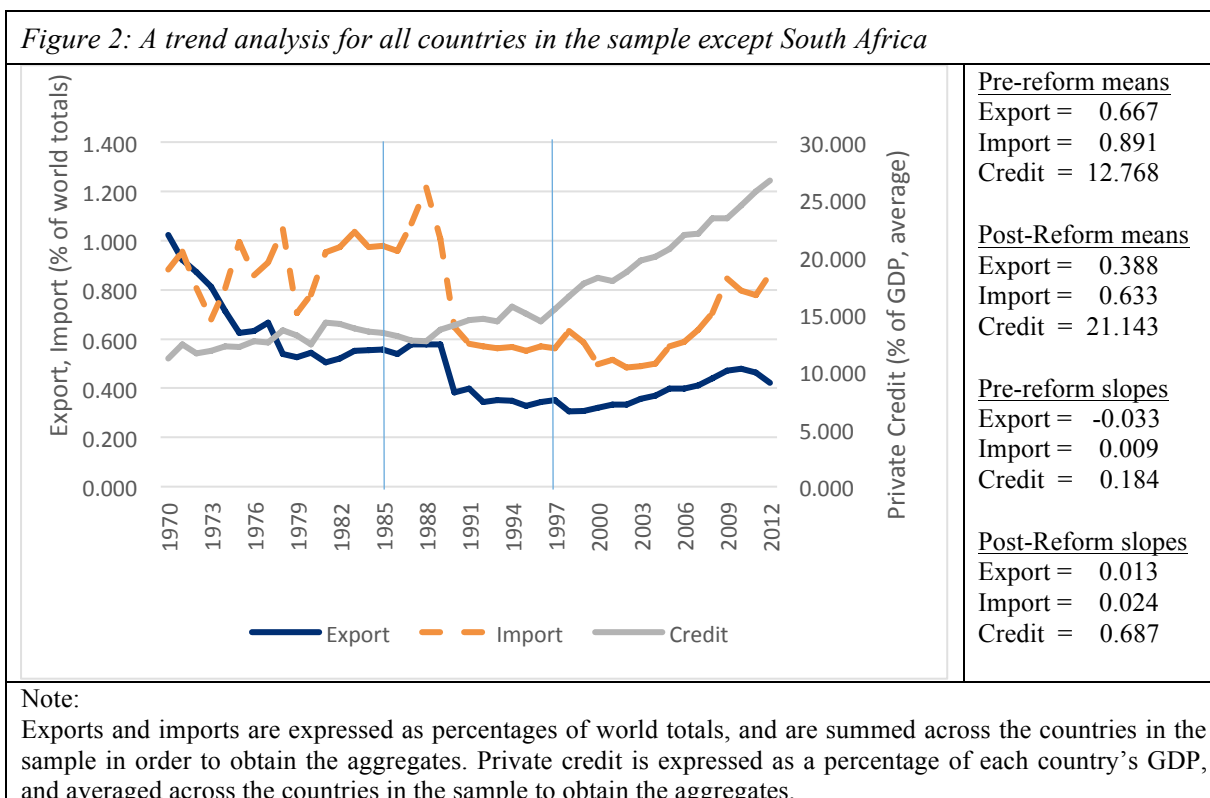
Note:

Exports and imports are expressed as percentages of world totals, and are summed across the countries in the sample in order to obtain the aggregates. Private credit is expressed as a percentage of each country's GDP, and averaged across the countries in the sample to obtain the aggregates.

Figure 2 replicates the foregoing aggregate analysis, but omits data on South Africa. This omission is necessitated by the observation that South Africa dominates all the series on trade flows and domestic credit to the private sector. In particular, as shares of world totals, South African exports and imports respectively average 0.722 percent and 0.662 percent during 1970 - 2012, while the totals for all the sixteen remaining countries average 0.500 percent and 0.260 percent. The averages for domestic credit as percentage of GDP are 98.323 for South Africa and 16.103 for the rest of the sample countries. As such, the omission in Figure 2 is undertaken to account for the potential influence of South Africa in the foregoing aggregate results. The conclusions drawn from this analysis are similar to those derived when South Africa is included, except for some major changes in mean values (due to the aforesaid significance of South Africa) and minor changes in slope values. In particular, financial

reforms are associated with a 65.9% increase in private credit, and this increase is itself associated with a reversal in the declining trends in exports and imports witnessed before financial reforms.

Figure 2: A trend analysis for all countries in the sample except South Africa



Note:

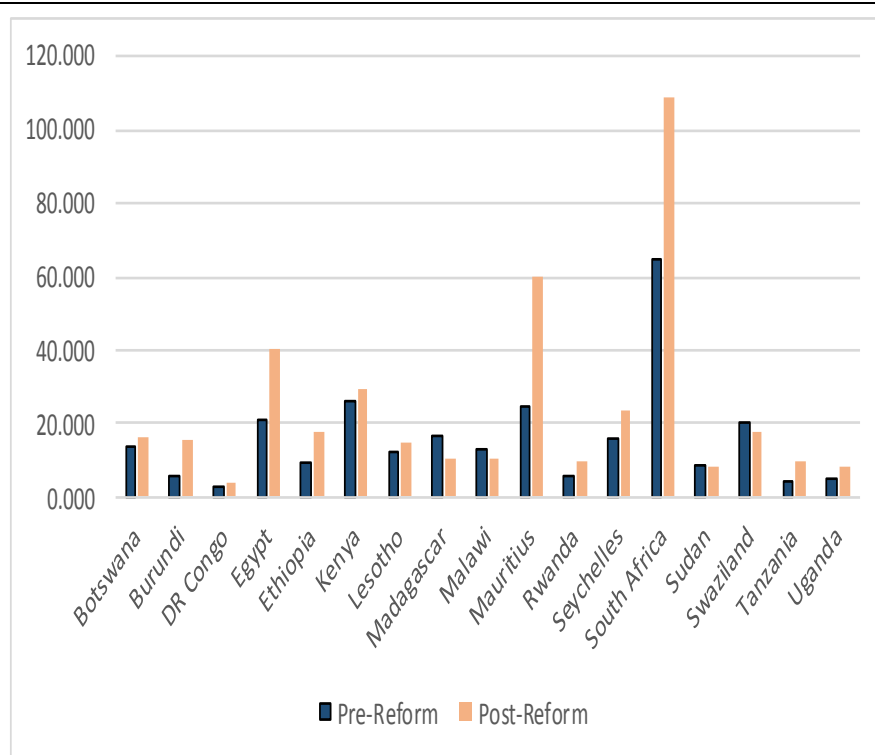
Exports and imports are expressed as percentages of world totals, and are summed across the countries in the sample in order to obtain the aggregates. Private credit is expressed as a percentage of each country's GDP, and averaged across the countries in the sample to obtain the aggregates.

A country-specific analysis of the foregoing trends yields more informative results. Appendix 1 presents the country graphs. Figure 3 shows that mean private credit increases after reforms in thirteen (76.5%) of the seventeen countries (except Madagascar, Malawi, Sudan and Swaziland). The change in mean private credit is highest in Burundi (182.1%) and Mauritius (141.8%), but lowest in Madagascar (-37.7%). This evidence confirms the thesis that financial reforms are associated with substantial increases in private credit, in line with the aggregate results described above.

The significantly higher mean values of private credit in the post-reform period relative to the pre-reform period reflect the fact that reforms induced positive shocks in credit expansion in most countries. Figure 4 shows that the rates of growth in private credit are must faster after reforms than before in thirteen (76.5%) of the countries, except Egypt, Kenya, Lesotho and Madagascar. Post-reform acceleration in private credit extension is highest in South Africa (where the slope changes from -1.1 to 3.0), followed by Mauritius from (0.5 to 2.8). Private credit is least responsive to reforms in Lesotho, where the slope deteriorates from 0.7 to -0.6.

Table 3 provides a summary of the mean export and import shares during the pre-reform and post-reform periods, as well as their percentage changes. Mean post-reform export shares are lower than mean pre-reform shares in twelve (70.6%) of the seventeen countries. The exceptions are Botswana, Lesotho, Mauritius, Seychelles and Sudan, hence include the region's strongest economies. The increase in mean export shares is highest in Lesotho (157.5%) and Botswana (87.7%), while the largest drop in export shares occur in Burundi (-78.2%) and Uganda (-72.1%). This picture is replicated when import shares are considered. Mean import shares also decline in thirteen (76.5%) of the sampled countries as we move from the pre-reform to the post-reform periods, with the exception of Botswana, Ethiopia, Mauritius, and Seychelles. The highest import growth occurs in Botswana (31.4%) and Seychelles (29.9%), while the highest decline occurs in Rwanda (-85.9%) and Tanzania (-41.3%).

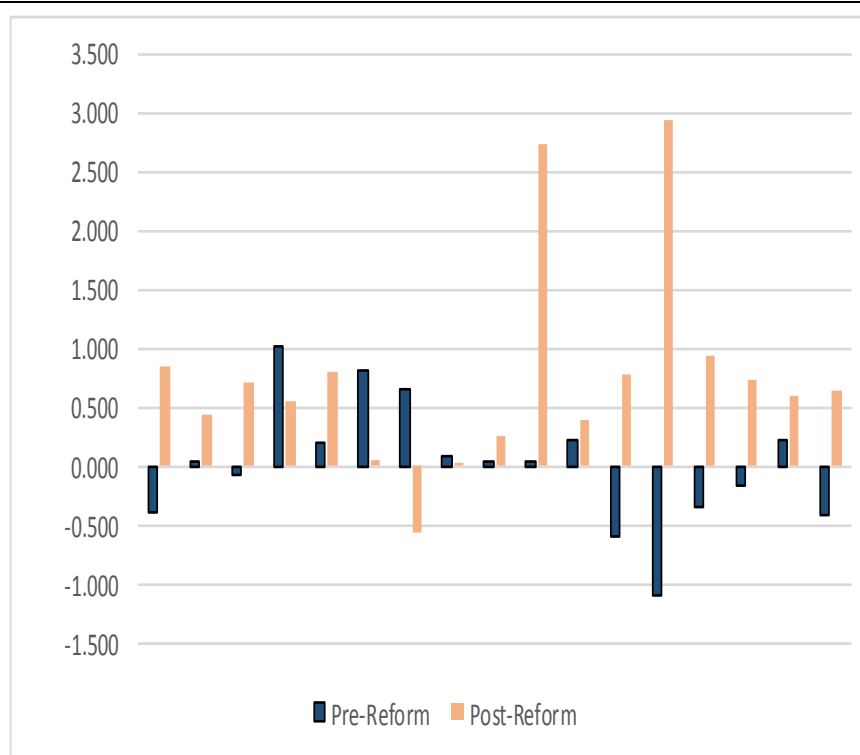
Figure 3: Mean private credit during pre-reform and post-reform periods



% Changes in Mean Private Credit

Botswana	20.716
Burundi	182.087
DR Congo	56.619
Egypt	90.420
Ethiopia	83.187
Kenya	13.566
Lesotho	20.536
Madagascar	-37.655
Malawi	-21.291
Mauritius	141.752
Rwanda	63.441
Seychelles	51.876
South Africa	67.716
Sudan	-1.208
Swaziland	-11.612
Tanzania	113.864
Uganda	68.324

Figure 4: Slopes of private credit plots during pre-reform and post-reform periods



Changes in Slopes of Private Credit Time Plots

Botswana	1.246
Burundi	0.416
DR Congo	0.787
Egypt	-0.478
Ethiopia	0.610
Kenya	-0.754
Lesotho	-1.237
Madagascar	-0.064
Malawi	0.212
Mauritius	2.701
Rwanda	0.178
Seychelles	1.374
South Africa	4.051
Sudan	1.279
Swaziland	0.895
Tanzania	0.384
Uganda	1.048

*Table 3: Mean export and import shares during pre-reform and post-reform periods*

Country	Exports (% of world totals)			Imports (% of world totals)		
	Pre-Reform	Post-Reform	% Change	Pre-Reform	Post-Reform	% Change
Botswana	0.023	0.043	87.749	0.029	0.039	31.436
Burundi	0.005	0.001	-78.218	0.008	0.004	-54.310
DR Congo	0.085	0.025	-70.640	0.039	0.024	-37.380
Egypt	0.168	0.107	-36.142	0.408	0.249	-38.978
Ethiopia	0.024	0.010	-57.372	0.038	0.041	9.062
Kenya	0.063	0.033	-48.078	0.095	0.058	-38.676
Lesotho	0.002	0.005	157.456	0.019	0.015	-17.340
Madagascar	0.022	0.010	-55.745	0.026	0.016	-40.753
Malawi	0.015	0.008	-47.476	0.020	0.012	-38.717
Mauritius	0.025	0.025	2.784	0.030	0.035	17.373
Rwanda	0.005	0.001	-71.054	0.010	0.001	-85.932
Seychelles	0.032	0.039	20.898	0.004	0.006	29.917
South Africa	0.983	0.642	-34.622	0.828	0.612	-26.126
Sudan	0.034	0.042	22.449	0.056	0.048	-14.462
Swaziland	0.017	0.015	-9.244	0.020	0.016	-20.850
Tanzania	0.033	0.016	-51.268	0.061	0.036	-41.344
Uganda	0.031	0.009	-72.145	0.024	0.022	-6.851

The graphs in Appendix 1 show that the rates of growth in export and import shares have not been uniform during the pre-reform and post-reform periods. Table 4 summarises the implied slopes.

*Table 4: Slopes of time plots of export and import shares during pre-reform and post-reform periods*

Country	Slopes of Plots of Export Shares			Slopes of Plots of Import Shares		
	Pre-Reform	Post-Reform	Change	Pre-Reform	Post-Reform	Change
Botswana	0.0021	-0.0012	-0.0034	0.0012	-0.0007	-0.0020
Burundi	-0.0001	-0.0001	0.0000	0.0002	-0.0001	-0.0003
DR Congo	-0.0056	0.0019	0.0075	-0.0010	0.0016	0.0026
Egypt	-0.0022	0.0053	0.0076	0.0186	0.0054	-0.0132
Ethiopia	-0.0014	0.0004	0.0018	-0.0005	0.0018	0.0022
Kenya	-0.0031	-0.0002	0.0029	-0.0038	0.0015	0.0053
Lesotho	0.0000	0.0002	0.0002	0.0004	-0.0004	-0.0008
Madagascar	-0.0016	-0.0002	0.0014	-0.0017	0.0004	0.0022
Malawi	-0.0004	-0.0002	0.0003	-0.0010	-0.0001	0.0009
Mauritius	0.0000	-0.0010	-0.0010	0.0001	-0.0008	-0.0009
Rwanda	-0.0002	0.0001	0.0003	-0.0001	0.0004	0.0005
Seychelles	0.0025	-0.0009	-0.0034	0.0001	-0.0001	-0.0001
South Africa	-0.0057	-0.0181	-0.0124	-0.0757	-0.0073	0.0683
Sudan	-0.0028	0.0031	0.0059	-0.0030	0.0029	0.0058
Swaziland	-0.0002	-0.0004	-0.0001	0.0001	-0.0005	-0.0006
Tanzania	-0.0034	0.0008	0.0041	-0.0034	0.0012	0.0046
Uganda	-0.0032	0.0002	0.0035	-0.0014	0.0008	0.0022

In keeping with the results depicted in Figures 1 and 2 for country aggregates, export flows exhibit a declining trend before reforms in thirteen countries (76.4% of sample) except Botswana, Lesotho, Mauritius, and Seychelles. Although the declining trends are completely reversed after reforms in seven of these thirteen countries (DR Congo, Egypt, Ethiopia, Rwanda, Sudan, Tanzania and Uganda), they continue to decline after reforms in the remaining six countries, but generally more slowly than prior to reforms. Hence, improvements in the negative trends (increasing trends or slower post-reform declines in export shares relative to import shares) are observed in all the countries except five (29.4 percent of the sample), namely Botswana, Mauritius, Seychelles, South Africa, Swaziland. A somewhat similar picture emerges when import shares are considered, in which case increasing trends or slower post-reform declines are observed in all countries except seven (42.2% of the sample), being Botswana, Burundi, Egypt, Lesotho, Mauritius, Seychelles and Swaziland.

### 3.2 Correlation analysis

Table 5 presents correlation coefficients that formally measure the degree of association between financial development and trade flows in the aggregate samples. While in the full sample the correlations are consistently negative for both exports and imports, this clearly miss-represents the picture in the sub-samples<sup>1</sup>. In particular, exports are clearly negatively correlated with financial development before reforms, and positively associated with it after the reforms. In the case of imports, a positive association is depicted in both sub-periods, but the association is positively stronger after reforms than before. The overall conclusion, therefore, is that financial development is more positively associated with trade flows after financial reforms than before.

Country	Correlations with Export Shares			Correlations with Import Shares		
	Whole Period	Pre-Reform	Post-Reform	Whole Period	Pre-Reform	Post-Reform
Full sample	-0.752	-0.667	0.953	-0.515	0.278	0.828
Sample without RSA	-0.517	-0.825	0.912	-0.368	0.521	0.817

An analysis of the experiences of individual countries largely supports the observations made from aggregate data (see Table 6). For exports, it is observed that correlations change from positive to negative after reforms in only three countries or 17.6 percent of the sample (Mauritius, South Africa, Swaziland), and become more negative after reforms in yet another three countries (Botswana, Burundi, Lesotho). These cases represent the case that exports decrease more with financial development after reforms relative to the pre-reform experience. For the remaining eleven (64.7%) of the countries in the sample, the positive association between financial development and exports is accentuated by financial reforms. This association becomes less negative after reforms than before in Egypt, Madagascar, Rwanda and Seychelles, while it becomes more positive after reforms in the remaining seven countries. Thus, the general observation is that the export-increasing effect of financial development is potentially greater after reforms than before.

For the case of imports, the observation is partially similar. The association between imports and private credit switches from positive to negative after reforms in seven countries (Burundi, Egypt, Mauritius, Rwanda, Seychelles, South Africa, and Swaziland), but is positively accentuated after reforms in the remaining ten countries which represent 58.8 percent of the sample.

<sup>1</sup> Recall that the full sample includes 13 middle observations that are omitted in our definition of the sub-samples for the purpose of the aggregation.



To summarise, despite that the exact nature of association is largely country-specific, there is strong support for the thesis that financial development is more positively associated with trade flows after financial reforms than before. At the country level, the association is more pronounced for exports (in 64.7% of the sample) than for imports (58.8%).

*Table 6: Correlations between trade flows and private credit – individual countries*

Country	Correlations with Export Shares			Correlations with Import Shares		
	Whole Period	Pre-Reform	Post-Reform	Whole Period	Pre-Reform	Post-Reform
Botswana	-0.417	-0.626	-0.823	-0.306	-0.612	-0.426
Burundi	-0.874	-0.488	-0.765	-0.807	0.132	-0.658
DR Congo	0.006	0.253	0.886	-0.075	-0.128	0.882
Egypt	-0.536	-0.223	-0.165	-0.220	0.763	-0.419
Ethiopia	-0.598	-0.485	0.051	0.002	-0.183	0.322
Kenya	-0.688	-0.855	0.176	-0.552	-0.848	0.580
Lesotho	-0.130	-0.115	-0.793	0.277	0.257	0.703
Madagascar	0.389	-0.408	-0.319	0.344	-0.287	0.194
Malawi	0.269	-0.089	0.096	0.353	0.002	0.496
Mauritius	-0.479	0.116	-0.961	-0.140	0.128	-0.917
Rwanda	-0.672	-0.381	-0.229	-0.443	0.174	-0.692
Seychelles	-0.485	-0.846	-0.541	0.203	-0.531	-0.053
South Africa	-0.856	0.090	-0.816	-0.516	0.900	-0.508
Sudan	0.520	0.414	0.761	0.747	0.725	0.930
Swaziland	-0.189	0.131	-0.647	0.153	0.637	-0.705
Tanzania	-0.173	-0.109	0.809	-0.117	-0.122	0.919
Uganda	0.114	0.808	0.679	0.468	0.586	0.766

#### 4. Conclusion

This paper analyses how financial reforms, financial development and trade flows are related in seventeen countries drawn from the Eastern and Southern Africa (ESA) region. The underlying hypotheses are that (a) financial development increases with financial reforms; (b) trade flows increase with financial reforms (c) trade flows increase with financial development; and (d) the positive association between trade flows and financial development is accentuated by financial reforms. The paper measures trade flows in terms of the shares of exports and imports in world totals for each country, while financial development is proxied by domestic credit to the private sector as a proportion of GDP. A trend analysis of these variables is substantiated by the computation of correlation coefficients between trade flows and private credit.

The paper generally reaffirms all four hypotheses, although country-specific deviations are also noticeable. More specifically, the paper makes the following observations:

- a) Financial reforms are associated with greater financial development in the region. Private credit increases much faster after reforms than before in 76.4 percent of the countries studied.
- b) Financial reforms are associated with a reversal or improvement in steadily declining export and import shares in 69.5 percent and 42.2 percent of the countries, respectively.
- c) The implication of (a) and (b) is that financial development – achieved through financial reforms – is associated with an increase in exports in most of the countries included in the study, while its association with imports is weaker. The result favours efforts to improve trade balances.
- d) In 64.7 percent of the countries, the positive association between exports and financial development is stronger after reforms than before reforms. The same occurs in terms of the positive association between imports and financial development in 58.8 percent of the countries.

The overall outcome is that financial reforms can be supported as catalysts for financial development which leads to increases in the flows of merchandise trade among ESA countries. It is clear, however, that the exact nature of the associations (as well as the implications on trade balances) tend to vary across countries. Hence, results based on country aggregates can be misleading. The analysis also cautions against drawing conclusions based on differences in mean values: although mean values of country share of world exports and imports are higher prior to reforms than after reforms, the reforms themselves reverse declining trends in these shares in most countries. The post-reform mean values are set to be higher than pre-reform values over time, and not too far into the future for most of the countries.

The time trends and correlations examined in this analysis present necessary but not sufficient material for the purpose of drawing causal conclusions in the interrelationships involving financial reforms, financial development and trade flows. Our subsequent research extends the foregoing analysis by regression models to address this concern.

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## Appendix 1: Plots of Exports, Imports and Private Credit

Note: Export and Import are exports and imports as percentages of world totals; private credit is domestic credit to the private sector as percentage of GDP. The commencement of financial reforms is identified by the vertical line cutting through the plots.

