

INTERNATIONAL STOCK MARKET LINKAGES IN SOUTHERN AFRICA

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Context

The major world stock markets have become more closely linked in recent years, and this has brought intense interest in the impact of those linkages. A big concern is that stock price movements and other shocks are likely to be transmitted rapidly between markets, which means that the interdependence between markets may lead to the rapid transmission of national financial disturbances, with wide-ranging implications for other markets. This occurred in the October 1987 collapse of equity prices worldwide, the crash of the Mexican market in 1995, and the disturbances in currency and stock markets in East Asia in 1997. A second concern about stock market linkages is that they can influence international portfolio diversification. If the impact of price movements in one market is unnecessarily and undesirably disruptive in other markets, it may distort the allocation of financial capital within an economy.

What is the problem?

The concern about portfolio investment flows is particularly important for developing countries because many have investment environments that promise potentially very large benefits. *If international stock market linkages lead to changes in the relationships of price changes among those markets, or alters the stability of the relationships, then this can have major implications for the flow of investment between countries.* The concern is important in sub-Saharan Africa, even though it has not yet been a major beneficiary of inward portfolio investment, because the increasing liberalization of its economies makes it an increasingly attractive investment destination. But there has as yet been little research interest in the linkages among sub-Saharan Africa stock markets, even though stock markets have been growing in importance in a number of African countries. This paper begins to fill this

information gap by studying the linkages among the stock markets of Botswana, Zimbabwe and South Africa. The study also considers the extent to which these markets are related to emerging markets more generally and to the larger international markets. It also reviews the efficiency of the markets and the extent to which stock prices in the markets are related to economic fundamentals.

Stock markets in southern Africa

At the time this study was carried out there were 14 stock markets in Africa, 11 of which were in sub-Saharan African, and new markets were being established in Malawi, Tanzania and Uganda. With the exception of the Johannesburg Stock Exchange, most of the SSA markets are relatively small in terms of capitalization and turnover and number of stocks. Most, including Johannesburg, are also illiquid by global standards; this has implications for market efficiency because liquidity has been found to be one of the most important links between stock markets and economic growth.

The Johannesburg Stock Exchange (JSE) is the oldest in Africa; it was established in 1887 after the discovery of gold on the Witwatersrand. It remains dominated by mining firms and despite its apparent sophistication is criticized as being a forum for speculation rather than for serious capital raising. By the end of 1996 the JSE had 626 listed shares with a total market capitalization of R1,130 billion (US\$242 billion), making it the sixteenth largest in the world in terms of market capitalization and accounting for 85% of the total capitalization of African stock markets. Share ownership is dominated by large conglomerate companies, meaning that most of the shares are not available for purchase by portfolio investors. On the other hand, the political rebirth of South Africa and a series of reforms to the financial sector should contribute to the transparency and efficiency, and ultimately the growth, of the JSE.

The Botswana Stock Exchange (BSE) is one of the newer markets, having been established in June 1989 as part of the government's effort to expand and diversify the financial sector. At the end of 1996 the BSE had 12 listed securities with a total market capitalization of P1,190 million (US\$326 million). More than half of the listed companies are financial institutions; others are in trade, property and brewing. Botswana's important mineral sector is not represented, and ownership of shares remains highly concentrated with large shareholdings by controlling parent companies. Market turnover is small so far, but growth of the exchange has been rapid. The number of listed shares has more than doubled (there were only five when it started) and capitalization grew by 900% between 1989 and 1996 in local currency terms and 409% in US dollar terms. The market index grew at an annual rate of 17% in pula

terms and 7% in dollar terms over the period. There are some exchange controls on inward investments, but there are no restrictions on the outflow of capital from share sales. Although capital gains from investments in listed securities are exempt from capital gains tax, there is a 15% withholding tax on dividends.

Dating from 1896, the Zimbabwe Stock Exchange (ZSE) is also one of the world's oldest, but its uninterrupted operations date only to 1946. It is the second largest in SSA, with total capitalization of US\$255 million at the end of 1996 and 64 listed securities. The ratio of market capitalization to GDP in 1995 was 31%, rather more than Botswana but much less than South Africa. Capitalization increased by 1542% in local currency terms and 240% in US dollar terms between 1989 and 1996. One of the sources of the boost was the relaxation of controls on foreign investment. In fact, the foreign presence accounted for 78% of total trading in the year ending March 1996. Nonetheless, there are still some restrictions on foreign investment and taxes are fairly high. The increasing activity led to a rise in turnover from US\$36 million in 1989 to US\$255 million in 1996 and a consequent increase in market liquidity from 4% to 9%, which makes the ZSE liquidity about comparable with Botswana and Johannesburg.

Results: Stock market linkages

The study finds that there is evidence of linkage between the BSE and the JSE, but little evidence of linkage between the ZSE and the other two. This empirical evidence supports the historical record of relationships among the countries. Botswana and South Africa have a highly open economic relationship; they are partners in the Southern Africa Customs Union (SACU) and are important trading partners (75% of Botswana's imports come from South Africa). Zimbabwe also has close economic links with both Botswana and South Africa and substantial levels of trade. However, Zimbabwe is less integrated regionally; it is a member of the Southern African Development Community rather than SACU, and many of its companies are locally owned rather than linked to larger regional or international groups.

A second conclusion is that the southern African markets, both individually and as a group, are not closely linked either to the two major developed country stock markets (the USA and the UK) or to other emerging stock markets. In terms of short-term relationships, the JSE appears to be more closely linked than the BSE or ZSE to the emerging and developed markets, likely because of the larger size and more efficient operation of the JSE. This could make the JSE more vulnerable to portfolio readjustments and contagion effects from other financial markets.

Results: Stock markets and economic fundamentals

The JSE also shows the closest relationship to variables that are expected to be important. The main transmission of international influences is through the real exchange rate. The market index has a positive long-term relationship with real GDP and the real exchange rate, and a negative relationship with the real long-term interest rate. The ZSE has long-term relationships with some economic variables, primarily domestic real GDP and domestic real interest rates, which probably reflects the high level of control over market process that existed until just recently. The BSE index was stationary over most of its lifespan and so could not exhibit any long-term relationship with economic variables. Over the short-term, however, the real exchange rate and the domestic and South African GDP growth have a positive influence and the domestic real interest rates having a negative influence. This indicates that as the BSE matures it will reflect the impact of economic variable in a way that will enable it to play a more effective role in the economy.

Implications for policy makers

The lack of linkages between southern African and other international markets suggests that the region will continue to experience capital inflows, as fund managers seek the international diversification of risk that these markets appear to offer. However, the relationship between the JSE and the BSE suggests that there may be little diversification benefit between the two markets, which will tend to work against Botswana. The ZSE has potential for diversification gains even for those already investing in the JSE. Portfolio investment poses some challenges, however. For countries to benefit, supportive policies must be in place and there should be macroeconomic stability. Efforts should be made to prevent the appreciation of the real exchange rate, excessive monetary expansion or speculative asset price bubbles, a combination that can be quite demanding of monetary authorities.

A second policy concern is that portfolio investment may be constrained at the level of the market itself, for example through restrictions on foreign shareholding. The three markets are reasonably well monitored by relevant authorities, but scope remains for ensuring that rules and regulations governing the stock markets, as well as the transparency of operations, evolve according to international best practice. It is also important to encourage more listings.

Moreover, policy makers need to consider further regional economic integration in order to allow the free flow of capital between countries of the region. For example, Botswana has surplus domestic savings while South Africa and Zimbabwe are in the opposite position. There would be some

regional logic in allowing firms to raise capital in Botswana and allowing this capital to be invested in the other countries of the region. This would help to provide Botswana savers with a greater range of financial instruments and regional investors with an additional source of funds.