I. Introduction

This research brief is based on the publication of ‘The Self-Financing of Industrial Development in Developing Markets: Case Studies in Brazil, China, India and South Africa’, which was Working Paper #157 of the FESSUD project. This Working Paper analysed alternative source of financing development in developing countries. This brief focuses on three distinct policy mechanisms for mobilising domestic resources in Brazil, South Africa, India and China. These include development banking, public pension funds and retention of foreign exchange.

II. Global Context

Revived interest in emerging markets stresses their role in global growth. The latest revised projections by the International Monetary Fund (IMF) predict that the average growth of emerging markets and developing countries will reach 4.1% in 2016. This is almost 1 percentage point higher than the global average (3.2%) and double that of advanced countries (1.9%). In the coming years, 70% of global growth is predicted to originate in emerging markets, with China and India accounting for 40%. In addition, by 2020 these markets are expected to account for 50% of the global GDP measured at purchasing power parity and 55% of the world fixed capital investment.

Contrary to the optimistic assessments of emerging markets’ prospects, the financial crisis starting in 2008 demonstrated the volatility of external finance for these countries. Contraction of private capital flows and bank lending had the biggest negative impacts on middle income countries. The subsequent volatility of portfolio flows and financial flows in the post-2008 period points to the crucial role of domestic resource mobilisation in emerging markets in maintaining their levels of investment.
In reviewing the patterns of international financial flows this paper has analysed a number of alternative sources of financing industrial development.

### III. Development Banking

Development banks played a crucial role in the industrialisation of advanced countries and East Asian and other newly industrialised countries. The Brazilian Development Bank (BNDES) established in 1952, is the world’s second largest development bank. The biggest source of BNDES funding is the Workers Assistance Fund, a merger of two payroll tax programs (PIS-PASEP), which accounts for between 30% and 70% of the BNDES resources. The second largest contributor to the Bank is the National Treasury. BNDES provides the majority of long-term loans in the country. In 2012 it accounted for 70% of all long-term credit.

The aerospace and automotive sectors are among many of the beneficiaries of the bank’s lending, but the use of the loans was more effective in the former. Brazil was the first developing economy to enter the global aerospace competition. Its biggest aerospace manufacturer, Embraer, is Brazil’s largest domestic exporter. A preferential custom regime (RECOF), financial assistance administered by the Ministry of Science and Technology and an export-promotion programme managed by Banco do Brasil and BNDES have transformed the company into a national champion.

In contrast, the industrial strategy for Brazil’s automotive industry has relied on trade liberalisation and attracting foreign direct investment. However, the rapid expansion of foreign car manufacturers did not translate into increased investment in the auto-parts sector. In fact, the industrial strategy has resulted in crowding out of local producers. The majority of the supply chain is dominated by foreign companies, with Brazilian auto-parts manufacturers concentrated in second and third tiers of production.

The government strategy to finance industrial development in Brazil brought about contradictory results. In the case of the aerospace industry, the country successfully promoted R&D activities and product development despite limited localisation of the supply chain. In addition, Embraer’s expansion abroad and acquisition of foreign technology and expertise would not have been possible without financial assistance from BNDES.
However, government’s support for the automotive industry has not resulted in the technological spillovers that have been predicted by FDI proponents. Not only is significant migration of R&D activities to Brazil restricted to three producers, but the internationalisation of the supply chain has also led to crowding out of domestic companies. BNDES has been a key financial instrument in Brazil’s industrial development and the main driver of internalisation of Brazilian companies. Long-term nature of BNDES investment in crucial industries alleviates capital constraints caused by insufficient commercial lending in the country.

IV. Pension Funds

In 2014 South Africa had the world’s third fastest growing pension fund system.\(^5\) Pension funds, together with sovereign wealth funds, came to be seen as a new source of global finance, which can provide liquidity for a wide range of assets. These are instruments for channeling pension fund contributions into financial markets in order to provide savings for financing capital investment. The growth of the pension fund industry has significant implications for emerging markets not only due to the increasing demand for their assets and their penetration into developed markets, but also due to their ability to become a key source of long-term finance.

The Government Employee Pension Fund (GEPF), the largest public fund, invests half of its assets in equities listed in the Johannesburg Stock Exchange and one third of its assets in bills, bonds and securities. However, while R11 billion of the GEPF assets have been invested in private equities, out of which 51 per cent has gone to the industrial sector, R29 billion has been allocated to property. In fact, between 2008 and 2014 investment in real estate rose more than 10 times, from 0.4 percent of total assets to 4.5 percent.

Equities purchased by the GEPF are located in telecommunication, finance, real estate and retail. In particular, the GEPF’s largest equity holdings are located in MTN (telecommunication), Sasol (the energy and chemical sector) and the Standard Bank (See Table 1).

In Brazil, the regulatory environment restricts investment of closed pension funds (which are similar to public pension funds in South Africa) to private equities issued by domestic companies. Due to high interest rates and stricter regulation, Brazilian pension funds are complementary to the investment strategies of BNDES, and allocate their holdings to government controlled entities in the petrochemical, metallurgy and steel industries. While in South Africa, the allocation of public
pension funds reinforces biases towards mining, finance and real estate, the focus on long-term profitability of Brazil’s closed pension funds complements the country’s industrialisation strategy.

Table 1: Largest Equity Holdings by GEPF 2009-2014

<table>
<thead>
<tr>
<th>Top 10 companies</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sasol limited</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>chemical</td>
</tr>
<tr>
<td>MTN group limited</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>ICT</td>
</tr>
<tr>
<td>Billiton Plc</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>mining</td>
</tr>
<tr>
<td>Standard Bank Group Limited</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>finance</td>
</tr>
<tr>
<td>Anglo American Plc</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>mining</td>
</tr>
<tr>
<td>Telkom SA Limited</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ICT</td>
</tr>
<tr>
<td>Impala Platinum</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mining</td>
</tr>
<tr>
<td>South African Breweries</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>food and beverages</td>
</tr>
<tr>
<td>British Tobacco Plc</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>agriculture</td>
</tr>
<tr>
<td>Naspers Ltd</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>media</td>
</tr>
<tr>
<td>FirstRand</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>finance</td>
</tr>
<tr>
<td>Anglo American Platinum</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mining</td>
</tr>
<tr>
<td>Richmont Securities AG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>finance, property</td>
</tr>
<tr>
<td>Sanlam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>construction material</td>
</tr>
</tbody>
</table>

Source: GEPF annual reports

V. Foreign Exchange Retention Mechanisms

Retention of foreign exchange is a common instrument in export-led industrial strategies, which include policies such as reduction of tariff barriers, export promotion, import restriction and multiple exchange rate systems. Acquisition of foreign exchange and its impact on development of two industrial sectors have been analysed in the cases of China and India.

Export-led industrial strategy and its recent shift towards investment in high value industries adopted by China have benefited from its clear objective of generating foreign exchange. China’s foreign reserves are currently estimated at USD3.9 trillion. China has gradually eased its restricted foreign exchange regime. Foreign currency operations previously had to be managed through foreign trade corporations using dual exchange rates. But the current regime is characterised by increasingly liberalised capital controls administered by the People’s Bank of China (PBC).

Retained foreign exchange is allocated through the China Investment Corporation (CIC). The CIC serves as the country’s major investment vehicle for domestic investment, provision of loans for foreign companies and investment abroad. In addition to the CIC, foreign exchange reserves are
reinvested through the China Development Bank (CDB) and the Exim Bank. Both banks have provided, for example, financial assistance to newly developed wind manufacturing industry. The combination of targeted industrial policy and effective long-term finance aimed at large domestic manufacturers has facilitated domestic and international expansion of Chinese indigenous wind turbine manufacturers (such as Sinovel and Goldwind).

In contrast with China, India lacks a centralised mechanism for allocating foreign exchange similar to the CIC. The government’s need for foreign exchange led India on the path to developing software exports. On the basis of the increasing liberalisation in the 1990s, the role of the information and communication technology sector (ICT) shifted from that of foreign exchange saver to foreign exchange earner. During the industrialisation period, India’s government promoted export of software in order to obtain foreign exchange, which was then intended to finance the development of high value-added hardware industries. The government’s bias towards software export locked the country into dependence on the import of foreign produced components, which are simply assembled in India. In addition, the export of the ICT industry is dominated by low value-added services, such as customer interaction services, the processing of credit cards and medical transcriptions.

Such dependence on exports of low value-added services and the inability to move beyond assembling hardware prevents the Indian ICT industry from producing widespread economic and social benefits. In addition to the low value-added structure of exports, the dominance of multinational corporations prevents the government from acquiring the necessary revenue for further improvement of both the country’s software and hardware industries.

Overall, the exchange retention system has enabled China to control the inflows of foreign exchange in a more effective way than other developing countries. As demonstrated in the case of India, unsuccessful retention of foreign exchange changed the direction of the ICT industry, making it more dependent on export and thus altering its structural characteristics.

VI. Concluding Remarks
The alternative sources of financing presented in this paper accentuate three challenges for the industrial strategies of emerging countries. Firstly, the case of development banking showed that the existence of a large and relatively effective disbursement institution, such as BNDES, does not guarantee an integration of local production networks into wider investment strategies. Secondly, the
financialisation of the global pension fund market has shifted the aim of funds away from supporting domestic socio-economic objectives towards profit maximisation. The challenge arising from the comparison between the South African and Brazilian pension systems is therefore how to combine effective management of resources with their allocation for the purpose of increasing economic growth.

The third self-financing mechanism, retention of foreign exchange, relates to export strategies pursued by many emerging and developing countries. India’s objective to obtain foreign reserves through software export resulted in its dependence on the export of low value-added ICT services. In contrast, China’s institutionalisation of foreign exchange mechanism contributed to successful retention of export profits and their reinvestment in industrial activities. The investment of foreign reserves in various sectors of the economy has been realized by the main investment vehicles of the CIC, CDB and Exim Bank. Thus, the main lesson arising from this study is that the process of the allocation of investment is as crucial as a country’s ability to mobilise domestic resources.


5 Datz, G. (2013) ‘Brazil’s Pension Fund Developmentalism’, Competition & Change, vol. 17, no. 2, pp. 111–129. According to the latest Tower Watson Global Pension Asset Study (2015) 10-year growth rate of South Africa’s pension funds assets was 12.9% while Brazil pension funds assets grew by 9.8%. (The rates are compound annual growth rates at local currencies.)
Financialisation, Economy, Society and Sustainable Development (FESSUD) is a 10 million euro project largely funded by a near 8 million euro grant from the European Commission under Framework Programme 7 (contract number: 266800). The University of Leeds is the lead co-ordinator for the research project with a budget of over 2 million euros. **Website:** [www.fessud.eu](http://www.fessud.eu)

The views expressed during the execution of the FESSUD project, in whatever form and or by whatever medium, are the sole responsibility of the authors. The European Union is not liable for any use that may be made of the information contained therein.

Published in October 2016, in Leeds, U.K. on behalf of the FESSUD project.