UNIVERSITI PUTRA MALAYSIA

EFFECTS OF STRUCTURAL ADJUSTMENT PROGRAMS ON SAVING, INVESTMENT AND GROWTH:
A CASE STUDY OF SUDAN

AHLAM ABD ELHADI HASSAN

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2003
EFFECTS OF STRUCTURAL ADJUSTMENT PROGRAMS ON SAVING, INVESTMENT AND GROWTH: A CASE STUDY OF SUDAN

By

AHLAM ABD ELHADI HASSAN

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in fulfillment of the requirement for the Degree of Doctor of Philosophy

April 2003
DEDICATED TO MY MOTHER, MY FATHER
MY BROTHERS AND SISTERS
THOSE WHO HAVE CONTRIBUTED SOMETHING INTO MY LIFE
Sudan economy has experienced a prolonged period of internal and external imbalances. Inappropriate policies have caused misallocation of resources and the lowering of productivity and employment. Macroeconomic instability placed further strain on growth by reducing investors’ confidence in the economy. To cope with the situation, Sudan, by the end of fiscal year 1978, has resorted to international borrowing which ushered in the Structural Adjustment Programs (and stabilization): the reform measures required by the International Monetary Fund and the World Bank as a condition for their loans.

The Structural Adjustment Program is an economy-wide, all embracing, and comprehensive set of policy reforms aimed at expanding and strengthening the role of the market forces for efficient allocation of resources. The main objective of the study is to examine the effects of the Structural Adjustment Programs on the Sudanese economy. In particular, the study analyzes interactions between structural reform and selected macroeconomic variables including saving, investment and growth. Annual data covering the period 1955 to 1998 was used.
A six-equation model with six variables was used in the study. A dummy variable was included as an exogenous variable to capture the effects of a Comprehensive Strategy Structural Program, which was implemented in Sudan.

The results of this study indicate that there was a positive correlation between growth, investment, and savings and show the important role of structural reform in determining all three variables. The structural programs in the Sudanese economy had positive effects on saving and investment, but its impact on the growth rate was negative in the short run. The findings tend to confirm the predominant view that sound macroeconomic policies and structural reforms are crucial for saving, investment and growth.

To improve the productivity of investment, the Sudanese government should identify and undertake investments that have positive net returns. Increased emphasis on education and the adoption or maintenance of outward oriented policies, for example removal of export taxes, and improvement in investment policies, in all fronts, are needed. These are capable of stimulating investment and spurring sustainable long-term economic growth.

Coordination and better targeting of foreign assistance resources on specific projects that can create the conditions for trade and saving, are required; knowing that foreign assistance can be used strategically to foster reforms.
Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia Sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KESAN PROGRAM PENYESUAIAN STRUKTUR TERHADAP TABUNGAN, PELABURAN DAN PERTUMBUHAN: KAJIAN KES SUDAN

Oleh

AHLAM ABD EL HADI HASSAN

April 2003

Pengerusi: Profesor Mohd. Ghazali Mohayidin, Ph.D.

Fakulti: Ekonomi dan Pengurusan


Pembentukan satu set 6-persamaan dengan 6 angkubah telah digunakan untuk setiap model. Satu angkubah pepatung di sertakan sebagai satu angkubah luaran bagi mendapatkan kesan Program Struktural Strategi Komprehensif yang dilaksanakan di Sudan.

Hasil kajian ini menunjukkan terdapat korelasi yang positif antara pertumbuhan dengan pelaburan, dan tabungan dan menunjukkan peranan penting yang dimainkan oleh pemulihan struktural dalam menentukan ketiga-tiga angkubah. Program struktural dalam ekonomi Sudan mempunyai kesan positif atas tabungan dan pelaburan, tetapi dalam jangka masa pendek impak keatas kadar pertumbuhan adalah negatif. Temuan ini menyokong kebanyakan pendapat bahawa dasar makro ekonomi yang kukuh dan pemulihan struktur penting bagi tabungan, pelaburan dan proses pertumbuhan.

Untuk memulihkan semula ekonomi Sudan, kajian ini menyarankan cadangan-cadangan berikut:
Untuk mempertingkatkan produktiviti pelaburan, Kerajaan Sudan seharusnya mengenalpasti dengan lebih jelas jenis-jenis pelaburan yang memberi pulangan bersih yang positif.

Penekanan yang lebih tinggi terhadap pendidikan dan menerima pakai atau pemantapan dasar yang berorientasikan ke luar, dalam semua hal terkemuka, dijangka akan memainkan peranan yang penting bagi mendorong pelaburan dan mempergiatkan kelestarian pertumbuhan ekonomi jangka panjang.

Meletakkan sasaran yang lebih baik dan mengkoordinasikan sumber-sumber bantuan asing yang boleh mewujudkan syarat-syarat perdagangan dan tabungan, dengan kesedaran bahawa bantuan asing boleh digunakan secara strategik untuk menjalankan pemulihan.
ACKNOWLEDGEMENTS

All praise due to Allah, the most Gracious and Merciful, for giving me the strength, and the determination to complete my study.

I wish to take this opportunity to express my deepest appreciation and gratitude to Prof. Dr. Mohd. Ghazali Mohayidin, my supervisor for his inspiration, encouragement at all lines and words of wisdom during some desperate moments, and more also his confidence in my abilities to complete my education at University Putra Malaysia

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Also, my brother Hassan and his wife Rasha and the kid Ahmed whose encouragement and good humor sustained me throughout this period.

Furthermore to my friend Mahmouda whose patience and understanding constantly reminded me to do my best and leave the rest to Almighty God.
I certify that an Examination Committee met on 4th April 2003 to conduct the final examination of Ahlam Abd Elhadi on her Doctor of Philosophy thesis entitled "Effects of Structural Adjustment Programs on Saving, Investment and Growth. A Case Study of Sudan" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows.

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This thesis submitted to the Senate of Universiti Malaysia has been accepted as fulfillment of the requirement for the degree of doctor of Philosophy. The members of the Supervisory Committee as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

Ahlam Abd Elhadi Hassan

Date: 06 MAY 2003
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<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>ERP</td>
<td>Economic Recovery Program</td>
</tr>
<tr>
<td>ECRP</td>
<td>Economic Recovery Program</td>
</tr>
<tr>
<td>ESAP</td>
<td>Economic Structural Adjustment Programs</td>
</tr>
<tr>
<td>SAA</td>
<td>Sub-Saharan Africa</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometer</td>
</tr>
<tr>
<td>NESP</td>
<td>National Economic Salvation Program</td>
</tr>
<tr>
<td>ECRP</td>
<td>Economic Recovery Program</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometer</td>
</tr>
<tr>
<td>JA</td>
<td>Joint Account System</td>
</tr>
<tr>
<td>IA</td>
<td>Individual Account System</td>
</tr>
<tr>
<td>IFIs</td>
<td>International Financial Institutions</td>
</tr>
<tr>
<td>FAO</td>
<td>Food Agricultural Organization</td>
</tr>
<tr>
<td>ISI</td>
<td>Import Substituting Industrialization</td>
</tr>
<tr>
<td>LDCs</td>
<td>Less Developing Countries</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Corporation and Development</td>
</tr>
<tr>
<td>LSDV</td>
<td>Least Square Dummy Variables</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>ARMA</td>
<td>Autoregressive Moving Average</td>
</tr>
<tr>
<td>ADF</td>
<td>Augmented Dickey Fuller</td>
</tr>
<tr>
<td>PP</td>
<td>Philip Perron</td>
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<tr>
<td>VECM</td>
<td>Vector Error Correction Model</td>
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<td>VAR</td>
<td>Vector autoregressive Model</td>
</tr>
<tr>
<td>ECT</td>
<td>Error correction Terms</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Centre for Trade and development</td>
</tr>
<tr>
<td>NIPA</td>
<td>National Income and Product Account</td>
</tr>
<tr>
<td>SDR</td>
<td>Special drawing Right</td>
</tr>
<tr>
<td>AIC</td>
<td>Akaike Information criterion</td>
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<tr>
<td>SC</td>
<td>Schwarz Criterion</td>
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</table>
1.1 Overview of the Study

Most of the developing countries have, in the post World War II years, followed what is generally described as "dirigiste policy prescriptions", where they had to assume a dominant and pervasive role in economic affairs. Following the oil price shocks of the 1970s and 1980s and a series of natural disasters that had stricken most of the Sub-Sahara African (SSA) countries during the same periods, many of the SSA countries embarked on a series of economic policy reforms in order to adjust to these shocks and restore sustainable economic growth. Available evidence tend to suggest that, for a number of reasons, these reforms have not resulted in tangible improvements. It is often claimed that the deleterious economic consequences of these policies in most cases outweighed the market failures they were meant to correct, and as such they have contributed to the low economic growth in SSA during the 1980s. During the last two decades, SSA had by far the worst economic performance among developing countries\(^1\) (Table 1.1). In 1998, for instance, the region's average real per capita income was roughly unchanged from its levels in 1970. Overall, SSA has suffered a chronic failure of economic growth and Sudan's economy is not an exception in this respect. Moreover, saving and investment ratios to GDP are significantly lower in SSA than in other developing countries and too

---

\(^1\) Among the Middle East and Europe region as well as Latin America, SSA experienced real per capita income growth of 1-2 percent a year on average during 1970-98, while in Asia, at 4.7 percent a
low to support a sustainable expansion in output. For example, the saving and investment in SSA during 1986–92 were 11.8 percent and 18.6 percent respectively, compared to 24.5 percent for saving and 25.7 for investment in developing countries in general (IMF, 1994).

The growth and performance of each Sub-Saharan African country varies with its ability to adjust to economic shocks to the system. For example, when shocks like higher world interest rates and drought affect the economies of these SSA, budget imbalances become a common problem. These imbalances were being removed through massive infusion of foreign loans from the International Monetary Fund (IMF) and the World Bank. However, in the post-1980s borrowing from the international banks had become harder and harder for these poor countries. The shocks to interest rates and terms of trade reduced real incomes significantly and, therefore, adjustment meant severe cuts in consumption and government spending.

---

Year growth was well above the world average of 2.4 percent.
Table 1.1: Comparative Macroeconomic Performance: SSA, East Asia and Latin America (medians)

<table>
<thead>
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<th>Period</th>
<th>SSA</th>
<th>Latin America</th>
<th>East Asia</th>
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<tr>
<td></td>
<td>Real GDP Growth (%)</td>
<td>Real Per Capita GDP (US$)</td>
<td>Exports to GDP (%)</td>
</tr>
<tr>
<td>1970-79</td>
<td>4.37</td>
<td>425</td>
<td>24</td>
</tr>
<tr>
<td>1980-84</td>
<td>1.78</td>
<td>374</td>
<td>26</td>
</tr>
<tr>
<td>1985-94</td>
<td>2.68</td>
<td>361</td>
<td>23.1</td>
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