THE DEMAND FOR INTERNATIONAL LIQUIDITY:

THE DEVELOPING COUNTRIES

by

DANNY KIT OTCHERE

B.Sc. (Econ.) University of Ghana, 1966

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department

of

Economics

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

May 1968
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Economics

The University of British Columbia
Vancouver 8, Canada

Date May, 1968
ABSTRACT

The following analysis is an attempt to apply some of the concepts of current monetary theory to the question of demand for international liquidity. The essay is, however, limited to the liquidity and development problems of developing countries.

Available statistical evidence for the period between 1951 and 1964 indicates that the developing countries, excluding the major oil-producing countries, have experienced a continued decline in their ratios of reserves to imports - a common measure of the "adequacy" of international reserves. This trend, it has been suggested, seems to imply that the developing countries have been facing a liquidity crisis of their own, quite apart from the more widely discussed problem of the inadequacy of international liquidity in the world context.

Various explanations for this liquidity crisis have been offered, all of which seem to fall into one of three categories: viz., what may be termed as a) the "profligacy" hypothesis, b) the "stage of growing pains" hypothesis, and
c) the "primitive" rational choice hypothesis. Not all economists agree on which hypotheses are important; neither are they sure of the exact relation between them. In our analysis, the first hypothesis is rejected for not doing full justice to the analysis of the problems involved; on the other hand, the other two are accepted as suggestive but incomplete since they are not bound together into any consistent theory.

It is the purpose of this essay to develop a consistent theoretical structure based on the alternative hypothesis that: "as a matter of circumstantial policy", it might be rational choice on the part of a developing economy to utilize some of its accumulated stock of reserves to finance development expenditures. Our analysis starts from the proposition that a monetary authority (developing country) can choose a level of reserves it will hold. As a result, if the drawing down or accumulation of reserves is a deliberate action on its part, then in principle, a demand function for reserves can be specified. Of course, the "primitive" rational choice model suggests this but our main contribution lies in the extension of their framework by applying that branch of monetary theory known as the theory of portfolio selection. In this way, we are able to base the whole analysis of the demand for reserves on the theory of the precautionary demand for money in a world of uncertainty. Our basic approach,
therefore, differs from that of the more common analyses which are based on a flow approach of the transaction demand for money, e.g., the quantity theory of money.

Indeed, the application of the portfolio theory offers the interesting paradoxical result that the developing countries have a low precautionary demand for reserves even though their reserve needs seem to be great. It is further found that by maintaining low reserve levels, these countries choose a risky portfolio; but that such a choice might be a rational economic behaviour because there is a simultaneous expectation that, other things being equal, drawing down reserves to finance investment in capital formation may lead to future increases in per capita consumption.

No attempt is made to subject our alternative hypothesis to any testing. That presently will lie outside the scope of this essay.

From a policy standpoint, however, the alternative hypothesis suggests that the quantity of reserves demanded at a particular moment of time can affect the terms on which some developing countries will invest in capital formation (that is, finance development expenditures), although it is not only this variable that can do so. Secondly, it demonstrates that, given the growth problems of developing countries, it might pay if the monetary authorities utilize some of the country's accumulated stock of reserves to finance development expenditures.
Finally, we conclude that the costs of development in developing countries can be minimized if more liberal measures were effected to provide for a larger inflow of capital aid to these countries both from developed countries and other international institutions concerned with development aid. The same notion applies to the policies underlying these countries' drawings in the credit tranches at the International Monetary Fund.
TABLE OF CONTENTS

Page

ABSTRACT ................................................. i
ACKNOWLEDGEMENTS ....................................... v
TABLE OF CONTENTS ....................................... vi
LIST OF TABLES ........................................... vii
LIST OF FIGURES .......................................... ix

CHAPTER

I INTRODUCTION ............................................ 1

I.1 The Concept of International Liquidity .......... 2

I.1A Unconditional vs. Conditional Liquidity ....... 3

I.2 International Liquidity Position of the Developing Countries ...................... 7

I.2A Group Differences .................................. 8

I.3 COMMON HYPOTHESES ................................ 13

I.3A The "Profligacy" Hypothesis ...................... 13

I.3B The "Stage of Growing Pains" Hypothesis .... 14

I.3C The "Primitive" Rational Choice Hypothesis ........................................ 16

I.3D An Alternative Hypothesis ...................... 18

II THE DEMAND FOR INTERNATIONAL LIQUIDITY ...... 21

II. The Existing Literature ............................... 21

II.1 The Level of Imports Approach ................... 21

II.1A The Transactions Aspect .......................... 22

II.1B The Precautionary Aspect ......................... 23

II.1C The Optimal Level Aspect ....................... 26

II.1D Empirical Findings on the "Level of Imports" Approach ......................... 27

II.2 The Money Supply Approach ....................... 30

II.2A Some Empirical Findings of the Money Supply Approach .......................... 31
## Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.3</td>
<td>Application of the Keynesian Liquidity Preference Theory</td>
</tr>
<tr>
<td>II.4</td>
<td>Conclusion</td>
</tr>
<tr>
<td>II.5</td>
<td>THE THEORETICAL FRAMEWORK</td>
</tr>
<tr>
<td>II.5A</td>
<td>The Portfolio Approach</td>
</tr>
<tr>
<td>II.6</td>
<td>The Application of the Portfolio Approach</td>
</tr>
<tr>
<td>II.6A</td>
<td>Assumptions</td>
</tr>
<tr>
<td>II.6B</td>
<td>A Developing Country's Demand for Liquidity</td>
</tr>
<tr>
<td>Bi.</td>
<td>The Cost of Reserve Accumulation</td>
</tr>
<tr>
<td>Bii.</td>
<td>The Rate of Return on Capital Formation</td>
</tr>
<tr>
<td>Biii.</td>
<td>The Risk of Inadequate Reserves</td>
</tr>
<tr>
<td>Biv.</td>
<td>The Cost of Manipulating the Level of Imports</td>
</tr>
<tr>
<td>Bv.</td>
<td>Conclusions</td>
</tr>
<tr>
<td>III.1</td>
<td>Killing Two Birds with one Stone</td>
</tr>
<tr>
<td>i.</td>
<td>The Stamp Plan</td>
</tr>
<tr>
<td>ii.</td>
<td>The Scitovsky Plan</td>
</tr>
<tr>
<td>iii.</td>
<td>UNCTAD Experts' Proposal</td>
</tr>
<tr>
<td>III.2A</td>
<td>Alternative Plans</td>
</tr>
<tr>
<td>i.</td>
<td>The Credit Facilities Approach</td>
</tr>
<tr>
<td>ii.</td>
<td>The Bernstein Plan</td>
</tr>
<tr>
<td>iii.</td>
<td>The Special Drawing Right Proposal</td>
</tr>
<tr>
<td>iiii.</td>
<td>Distribution of the New Reserves</td>
</tr>
<tr>
<td>iiiiA</td>
<td>Implications for the Developing Countries</td>
</tr>
<tr>
<td>III.3</td>
<td>Conclusion</td>
</tr>
<tr>
<td>IV.1</td>
<td>Summary</td>
</tr>
<tr>
<td>IV.2</td>
<td>Implications for Policy</td>
</tr>
<tr>
<td>IV.3</td>
<td>CONCLUSION</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>101</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>108</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>I</th>
<th>COUNTRIES' RESERVES AS A PERCENTAGE OF IMPORTS (1951 - 1964)</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>COUNTRIES' OFFICIAL RESERVES</td>
<td>59</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Portfolio Choice by the Wealth holder</td>
<td>39</td>
</tr>
<tr>
<td>II.</td>
<td>Comparison of Risk Levels of Developed and Developing Countries</td>
<td>52</td>
</tr>
<tr>
<td>III.</td>
<td>Portfolio Choice by the Developing Country</td>
<td>54</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

I wish to express many sincere thanks to Dr. Ronald A. Shearer for supervising this thesis and for his combined interest and advice and guidance throughout the course of this study. Also, I am deeply thankful to the other members of the Economics Department and friends whose valuable suggestions and encouragement have been a source of much inspiration to me. Finally, I wish to express my gratitude to Freda Eldridge for proofreading the manuscript, and to the University of Ghana for their financial assistance which made possible my two-year programme at The University of British Columbia.
CHAPTER I

INTRODUCTION

In the last decade, monetary authorities and international institutions have been increasingly concerned about the inadequacy of international liquidity in relation to growing world trade and payments. In one sense, the interest of the developing countries\(^1\) in any reform of the international monetary system is essentially the same as that of all other countries. But this is because any impairment in the world economy generally affects both the developed and the developing countries alike, although in varying degrees. However, besides this general interest in the global problem of international liquidity, many economists suggest that the developing nations are experiencing a liquidity crisis of their own as evidenced by a continued decline in their international liquidity position. In this way, not only have the developing countries a stake in the improvement of the international

\(^1\)Developing countries are here defined as including all of Latin America, all of Asia except Japan, and all of Africa except the Union of South Africa. This is an arbitrary classification since some countries in this group have higher levels of per capita income than a few countries in Europe. Note that the qualifying word, "developing", is used to imply that these countries are in a process of growth and development.
monetary machinery, but also they must be concerned with their own position vis-a-vis the rest of the world.

I.1: The Concept of International Liquidity

In domestic monetary theory, the term, "liquidity", is often used to describe the usefulness of a given asset in meeting liabilities; that is, its degree of 'moneyness'. By analogy, it is argued that we should be able to define a class of internationally liquid assets, i.e., assets which are particularly useful in meeting international contingencies. The international liquidity position of a nation would then depend on its holdings of internationally liquid assets. Thus, the "Group of Thirty-Two Economists" defined it as the command of a country's monetary authorities over liquid assets like foreign exchange for use in intervening in the foreign exchange market to support the value of its currency.

This seems to provide a solid basis for empirical work. Unfortunately, however, the international liquidity position of a country is very difficult to quantify. Internationally liquid assets may take various forms, and these forms may be imperfect substitutes for each other. Moreover, if we are


going to include all assets which are potentially available for intervention in the foreign exchange market, we must include intangible lines of credit, particularly lines of credit among monetary authorities and with international institutions. As a result, it is not clear that the international liquidity position of even a single country can be unambiguously measured. Indeed, some economists have taken the extreme position that "liquidity is a state of mind".

I.1A: Unconditional vs Conditional Liquidity

In principle, the term, "international liquidity" may be used to cover a country's official holdings of internationally liquid assets including its ability to borrow such assets internationally. Typical items entering into the concept are holdings of gold and convertible foreign exchange, claims on international institutions, and entitlements to borrow from international institutions, foreign governments or from private sources abroad. For quantitative purposes, international liquidity is often classified into "unconditional" and "conditional" liquidity.

---


Unconditional liquidity exists in the form of liquid assets unconditionally at the disposal of a country holding them. Clearly, gold and convertible foreign exchange owned by a country give it "unconditional" liquidity just as part of its drawing rights - the gold tranche - at the International Monetary Fund may also be considered as unconditional. On the other hand, conditional liquidity consists in the potential access to reserves, an access which is subject to observance of certain conditions as to the use to be made of the funds or as to the general policies to be pursued by the recipient. The International Monetary Fund is the largest single provider of conditional liquidity in the form of drawing rights under members' quotas. Conditional liquidity at the Fund is manifested chiefly in the credit tranches in which requests for transactions are likely to be favourably received only when the drawings or stand-by arrangements are intended to support a sound program aimed at establishing or maintaining an enduring stability of the member's currency at a realistic rate of exchange. In this way, credit tranche policy is different from that of the gold tranche since in the latter drawings are somewhat automatic when they are made to combat a temporary balance of payments deficit.

6 A detailed discussion on the distinction between conditional and unconditional liquidity can be found in J.M. Fleming, "International Liquidity: Ends and Means", I.M.F. Staff Papers, Vol. 8, 1960/61, pp. 447 - 449.
In addition, such institutions as the Bank for International Settlements and a network of inter-central bank "swap" arrangements provide ad hoc credits as substitutes for reserves. However, it should be noted that these ad hoc arrangements mainly cater to the needs of the developed countries.\(^7\)

Generally, conditional and unconditional liquidity cannot just be added up; countries cannot regard them as perfect substitutes. Moreover, except for that held under the International Monetary Fund agreement, conditional liquidity cannot be subjected to exact quantitative measurement.\(^7a\) It appears to take the form of ad hoc agreements among central banks as needed. These arrangements are not officially established as lines of credit; and even if they were, there are no data published on them. As Machlup noted, the statistical measurement of conditional liquidity presents problems because:

"Measurement of outside-financing facilities are not always meaningful. Both the liquidity of assets (other than the perfectly liquid assets counted as monetary reserves) and the availability of credit

\(^7\)See, A.N. McLeod, Contentious Thoughts on International Liquidity, Central Bank of Tobago, (Trinidad, 1967), pp.2 - 9. For example, between 1962 and 1963, there was a substantial growth of mutual credit arrangements on bilateral basis between the United States and various industrial countries while less formal arrangements were devised for the United Kingdom in 1961 and again in 1963.

\(^7a\)It must be noted that even in the credit tranches at the Fund, members may not want to treat lines of credits in the different tranches as perfect substitutes for each other.
for any one country depend on the simultaneous
demand for liquid funds by others". 8

In fact, when we consider only the developing countries,
the problem of the statistical measurement of conditional
liquidity becomes relatively simple. They have no other
significant source of conditional liquidity except that
obtainable at the International Monetary Fund. Consequently,
it is possible to conceive that this aspect of liquidity can
be statistically measured and included in the international
reserve figures of the developing countries. In general,
however, member countries of the Fund, including the developing
ones, do not regard this type of liquidity as quite equal to
freely available reserves, like the drawing rights in the gold
tranche; they therefore do not include conditional liquidity
in their international reserves figures. The convention has
been to consider only internationally liquid assets which are
held unconditionally - including drawing rights in the gold
tranche - by a country. Although this conventional measurement
of international liquidity will be followed in this essay, we
shall later on examine the Fund's activities with the developing
countries to find out the extent to which the Fund's provision
of conditional liquidity benefits these countries. The Fund's
provision of conditional liquidity to these countries has great
relevance to our subsequent analysis.

---

8F. Machlup, The Need for Monetary Reserves, Reprints in
University, October, 1966, No. 5, p.1.
I.2: International Liquidity Position of the Developing Countries

From what has been said above, it will be assumed in the rest of this essay that reserve holdings of the developing countries consist of owned reserves - gold and convertible foreign exchange - and their net I.M.F. positions. 9

Hence, suppose we take as a first approximation (but even with some reservations), the common measure of the level of international liquidity in any country as the level of holdings of gold and foreign exchange reserves plus reserve position in the Fund relative to the level of imports, a striking contrast between the experience of the developed and the developing countries in recent years is evident. 10 For example, in 1951, reserves as percentage of imports for all developing countries combined was 67%; but, by 1964, this ratio had declined to 46%. By contrast, the Group of Ten (excluding

9 I.M.F. positions represent claims that countries have on the Fund as a counterpart either to their gold subscriptions or to the amounts of their currencies drawn by other countries. Here, we refer exclusively to access to drawing rights in the gold tranches. Reserve position at the Fund varies from country to country since in the first place member quotas differ; secondly, the gold tranche at any time depends on how it is affected by the Fund transactions in the member's currency. When a country normally joins the Fund, it pays 25% of its quota in gold and 75% in its own currency. The Fund's initial holding of that currency is then 75% of quota and the country's gold tranche position is 25% of the quota.

the United States) had the ratio of their reserves to imports rise from 27% in 1951 to 38% in 1964. (See Table I).

I.2A: Group Differences

Such aggregate ratios, however, tend to understate the problem. For, not only did the ratio of reserves to imports decline in these countries but the absolute level of reserves declined as well, although very slightly. Moreover, the very fact that these figures are averages conceals the important observation that for some large groups of developing countries, the decline in their international liquidity position has been even more severe. On the other hand, others experienced an increase in reserves.

As can be seen from Table I, the six major oil-producing countries had their reserves as a percentage of imports grow from 60% in 1951 to 67% in 1964. One-fourth of the gross reserves of all developing countries combined is concentrated in these countries, which, however, form a small part of the total population of all developing countries. Similarly, the ratio for some five countries in the Far East rose from 53% in 1951 to 62% in 1964. 11 The total reserves of these two groups of countries together, equivalent to about $4.5 billion, amounted at the end of 1966 to some two-fifths of the total reserves of the developing countries as a whole.

11 These countries are: Vietnam, Korea, China, Malaysia, and Thailand.
<table>
<thead>
<tr>
<th>Countries</th>
<th>Reserves as percentage of imports</th>
<th>1951</th>
<th>'52</th>
<th>'53</th>
<th>'54</th>
<th>'55</th>
<th>'56</th>
<th>'57</th>
<th>'58</th>
<th>'59</th>
<th>'60</th>
<th>'61</th>
<th>'62</th>
<th>'63</th>
<th>'64</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR OIL</td>
<td>EXPROWERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>81 112 111 84 69 67 59 44 37 30 30 42 47 30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>80 75 94 114 108 111 77 94 91 66 53 53 92 60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>... ... ... ... ... ... ... ... ... ... ...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>... ... ... ... ... ... ... ... ... ...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>... ... ... ... ... ... ... ... ... ...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venezuela</td>
<td>50 52 53 47 51 76 78 66 46 51 53 53 78 72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COUNTRIES WITH</td>
<td>INITIAL HIGH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESERVES</td>
<td></td>
<td>75</td>
<td>65</td>
<td>96</td>
<td>88</td>
<td>86</td>
<td>73</td>
<td>46</td>
<td>43</td>
<td>44</td>
<td>38</td>
<td>32</td>
<td>26</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
<td>35</td>
<td>36</td>
<td>67</td>
<td>54</td>
<td>39</td>
<td>34</td>
<td>22</td>
<td>10</td>
<td>28</td>
<td>42</td>
<td>26</td>
<td>8</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>26</td>
<td>26</td>
<td>46</td>
<td>30</td>
<td>38</td>
<td>50</td>
<td>32</td>
<td>24</td>
<td>27</td>
<td>24</td>
<td>26</td>
<td>26</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Ceylon</td>
<td></td>
<td>67</td>
<td>46</td>
<td>34</td>
<td>58</td>
<td>69</td>
<td>69</td>
<td>54</td>
<td>49</td>
<td>34</td>
<td>25</td>
<td>25</td>
<td>24</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td></td>
<td>209</td>
<td>204</td>
<td>198</td>
<td>258</td>
<td>216</td>
<td>194</td>
<td>160</td>
<td>137</td>
<td>107</td>
<td>48</td>
<td>63</td>
<td>35</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td></td>
<td>108</td>
<td>106</td>
<td>154</td>
<td>144</td>
<td>133</td>
<td>85</td>
<td>42</td>
<td>39</td>
<td>41</td>
<td>29</td>
<td>29</td>
<td>22</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td>98</td>
<td>41</td>
<td>79</td>
<td>78</td>
<td>103</td>
<td>76</td>
<td>59</td>
<td>54</td>
<td>86</td>
<td>48</td>
<td>43</td>
<td>38</td>
<td>54</td>
<td>24</td>
</tr>
<tr>
<td>Sudan</td>
<td></td>
<td>198</td>
<td>105</td>
<td>122</td>
<td>122</td>
<td>109</td>
<td>148</td>
<td>62</td>
<td>52</td>
<td>80</td>
<td>91</td>
<td>64</td>
<td>57</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>U.A.R.</td>
<td></td>
<td>143</td>
<td>114</td>
<td>136</td>
<td>152</td>
<td>117</td>
<td>94</td>
<td>85</td>
<td>64</td>
<td>47</td>
<td>40</td>
<td>29</td>
<td>30</td>
<td>24</td>
<td>23</td>
</tr>
</tbody>
</table>
TABLE I (continued)

<table>
<thead>
<tr>
<th>Countries</th>
<th>Reserves as percentage of imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1951</td>
</tr>
<tr>
<td>OTHER DEVELOPING COUNTRIES</td>
<td></td>
</tr>
<tr>
<td>Bolivia</td>
<td>35</td>
</tr>
<tr>
<td>Chile</td>
<td>18</td>
</tr>
<tr>
<td>Columbia</td>
<td>33</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>16</td>
</tr>
<tr>
<td>Dominican Rep.</td>
<td>36</td>
</tr>
<tr>
<td>Ecuador</td>
<td>52</td>
</tr>
<tr>
<td>El Salvador</td>
<td>70</td>
</tr>
<tr>
<td>Honduras</td>
<td>40</td>
</tr>
<tr>
<td>Guatemala</td>
<td>51</td>
</tr>
<tr>
<td>Jamaica</td>
<td>...</td>
</tr>
<tr>
<td>Mexico</td>
<td>36</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>25</td>
</tr>
<tr>
<td>Panama</td>
<td>66</td>
</tr>
<tr>
<td>Peru</td>
<td>24</td>
</tr>
<tr>
<td>Uruguay</td>
<td>86</td>
</tr>
<tr>
<td>Jordan</td>
<td>59</td>
</tr>
<tr>
<td>Lebanon</td>
<td>31</td>
</tr>
<tr>
<td>Syria</td>
<td>14</td>
</tr>
</tbody>
</table>


11

TABLE I (continued)

<table>
<thead>
<tr>
<th>Countries</th>
<th>1951</th>
<th>'52</th>
<th>'53</th>
<th>'54</th>
<th>'55</th>
<th>'56</th>
<th>'57</th>
<th>'58</th>
<th>'59</th>
<th>'60</th>
<th>'61</th>
<th>'62</th>
<th>'63</th>
<th>'64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burma</td>
<td>111</td>
<td>115</td>
<td>119</td>
<td>61</td>
<td>53</td>
<td>61</td>
<td>31</td>
<td>58</td>
<td>63</td>
<td>50</td>
<td>55</td>
<td>76</td>
<td>80</td>
<td>79</td>
</tr>
<tr>
<td>China</td>
<td>56</td>
<td>39</td>
<td>43</td>
<td>28</td>
<td>43</td>
<td>54</td>
<td>63</td>
<td>54</td>
<td>53</td>
<td>39</td>
<td>42</td>
<td>38</td>
<td>63</td>
<td>69</td>
</tr>
<tr>
<td>Korea</td>
<td>19</td>
<td>39</td>
<td>32</td>
<td>44</td>
<td>28</td>
<td>26</td>
<td>26</td>
<td>39</td>
<td>48</td>
<td>46</td>
<td>66</td>
<td>40</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Malaysia</td>
<td>66</td>
<td>78</td>
<td>80</td>
<td>99</td>
<td>.97</td>
<td>92</td>
<td>85</td>
<td>93</td>
<td>117</td>
<td>112</td>
<td>118</td>
<td>114</td>
<td>111</td>
<td>109</td>
</tr>
<tr>
<td>Phillipines</td>
<td>46</td>
<td>51</td>
<td>49</td>
<td>39</td>
<td>26</td>
<td>28</td>
<td>10</td>
<td>15</td>
<td>16</td>
<td>19</td>
<td>8</td>
<td>11</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Thailand</td>
<td>133</td>
<td>115</td>
<td>93</td>
<td>91</td>
<td>90</td>
<td>87</td>
<td>79</td>
<td>79</td>
<td>75</td>
<td>82</td>
<td>94</td>
<td>96</td>
<td>94</td>
<td>99</td>
</tr>
<tr>
<td>Vietnam</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>48</td>
<td>61</td>
<td>48</td>
<td>69</td>
<td>76</td>
<td>90</td>
<td>69</td>
<td>58</td>
<td>61</td>
<td>47</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries</th>
<th>1951</th>
<th>'52</th>
<th>'53</th>
<th>'54</th>
<th>'55</th>
<th>'56</th>
<th>'57</th>
<th>'58</th>
<th>'59</th>
<th>'60</th>
<th>'61</th>
<th>'62</th>
<th>'63</th>
<th>'64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Morocco</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>32</td>
<td>43</td>
<td>50</td>
<td>41</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>Nigeria</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>99</td>
<td>74</td>
<td>59</td>
<td>56</td>
<td>43</td>
<td>36</td>
</tr>
<tr>
<td>Tunisia</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>31</td>
<td>56</td>
<td>45</td>
<td>35</td>
<td>29</td>
<td>28</td>
</tr>
</tbody>
</table>

| GRAND TOTAL | 67  | 69  | 74  | 73  | 66  | 62  | 57  | 62  | 58  | 55  | 54  | 51  | 50  | 46  |

Memorandum Item

The Ten (excluding the U.S.)  27  30  36  40  37  34  30  42  40  43  45  43  40  38

Source: Banca Nazionale Del Lavoro Quarterly Review, June, 1967, pp. 176 - 177 (modified)
Significantly enough, these two groups accounted for less than one-fourth of the total imports of all developing countries combined in the same year.

When we exclude the major oil-producing countries, the ratio of reserves to imports for all other countries (although including the five in the Far East) fell from 64% in 1951 to 39% in 1964. In this group, the countries with initial high level of reserves at the beginning of the period experienced a drastic fall in their reserve holdings, while for all others, the decline was very moderate. In the former group, i.e., the group with initial high reserve levels, the ratio fell from 75% in 1951 to 22% in 1964; and in the latter group the decline in the ratio of reserves to imports was from 49% in 1951 to 42% in 1964.

The above statistical evidence indicates that reserve levels of most developing countries have fallen in recent years. Thus, if the problem of inadequacy of international liquidity is serious for the developed countries which seem to have more access to reserve substitutes through private and bilateral credit arrangements among themselves, then that for the developing countries appears to be even more serious. These latter countries have less access to credit facilities and for this reason, other things equal, it might be argued that they should hold large reserves. They suffer as much as, if not more than, other countries from fluctuations in their
balance of payments. This is particularly true of those developing countries whose exports are concentrated on a few products which are subject to very serious price fluctuations and seasonal variations. For these countries, reserve needs would seem to be greater than those of the developed countries.

If we accept the above argument as valid, the essential paradoxical situation relates to the fact that the reserve holdings of many such developing countries have been reduced in recent years, as indicated by the above statistical evidence. Some economists have attempted to put forth explanations to foster an understanding of the phenomena underlying the decline in reserve levels of the developing countries. It is to these explanations that we now turn.

I.3: COMMON HYPOTHESES

1.3A: The "Profligacy" Hypothesis

The first of these explanations is what we shall term as the "profligacy" hypothesis. It seems to be implied that the developing countries are "Young and inexperienced" but, being eager to improve the living standards of their peoples, they run down their reserves unwisely. They undertake overly

---

12 P. Streiten, "International Monetary Reform and the Less Developed Countries", Banca Nazionale Del Lavoro, Quarterly Review (Rome, June, 1967), p. 163. Streiten seems to imply that such a hypothesis exists.
ambitious programs for economic development but are unable to economize on the use of their scarce foreign exchange resources. Hence, the inference that since they cannot manage their monetary affairs and thus their balance of payments, a decline in their reserve holdings must be sought in their "irrational" economic behaviour.

Other economists, however, feel that the "profligacy" argument is unjustified since it fails to take into consideration the many "teething" troubles - economic, political and social - faced by the developing countries in their efforts to improve the living standards of their peoples. They therefore maintain that any explanation for the liquidity crisis in these countries should be sought from the development process itself.

I.3B: The "Stage of Growing Pains" Hypothesis

Implicit in this line of argument is a model which may be described as follows: The developing countries are agrarian economies. They export one or a few primary products in a world where a fixed exchange rate is the only internationally acceptable policy. They undertake programs for rapid economic development via industrialization but domestic capital formation and consumption have high marginal import requirements. Although they have a high income elasticity of demand for imports, they face an inelastic demand with respect to income and price for their exports. Thus, over time, the terms of
trade have turned against them. It is finally argued that with a restriction, due to an imperfect capital market, in autonomous capital inflows, the reserve holdings of these countries have accordingly been reduced.

Under the assumptions of this model, two important implications are worth noting. First, a decline in reserve holdings is an inevitable phenomenon consequent upon the development process itself. Over time, the developing countries would tend to be in chronic balance of payments deficits; their demand for foreign currencies would tend to be greater than the foreign demand for their own currencies at the fixed exchange rate. And of course, under the assumption of a fixed exchange rate, there would tend to be more currency or import restrictions in the developing than in the developed countries if that rate is to be maintained. Secondly, reserve levels would tend to be reduced more in those developing countries which are bent on more rapid economic development and which therefore require more capital goods imports (it is thus assumed that the developing countries do not produce capital goods locally) than in those countries which are bent on less rapid development.

In this light, Streeten has argued that in those developing

---


14 The oil-producing countries are an exception to the effects of this model since they face a relatively high income elasticity of demand for their exports.
countries where the ratio of reserves to imports has fallen, the decline has not been due to profligacy on the part of the monetary authorities but "rather an inability to raise reserves in the face of growing import requirements" for development. ¹⁵ Thus, basic to Streeten's position is the assertion that the decline in reserve holdings is associated with rising imports and non-trade payments.

A similar hypothesis, though different in many respects, strongly asserts that the developing countries cannot hold reserves because they have a great propensity to spend them for development purposes. ¹⁶ In this way, if reserve holdings have fallen, it might be a rational economic decision on the part of the monetary authorities of these countries. This is the "primitive" rational choice hypothesis.

I.3C: The "Primitive" Rational Choice Hypothesis

The gist of this hypothesis is that in the process of growth, it may become necessary to weigh opportunities for more profitable uses against the arguments for accumulating reserves. This is because holding reserves represents claims on real resources which might otherwise be used to increase consumption or development in general. Developing countries

---

¹⁵ P. Streeten, op. cit., p.163

¹⁶ The International Monetary Fund agrees with this view. See, I.M.F. Annual Report, 1965, p.181.
want to improve their living standards and they cannot afford to invest real resources in this way. This hypothesis is therefore cast in terms of cost-benefit analysis since it presumes that reserve management in these countries should be viewed on the basis of how the benefits and costs of holding reserves compare with those of other assets. The argument is best represented by views given by both Bernstein and Wallich. To Bernstein,

"The inability of the underdeveloped countries to accumulate reserves does not arise from a world shortage of monetary reserves. It is a reflection of the fact that holding reserves is a form of investment and that the underdeveloped countries cannot afford to invest real resources in monetary reserves at a time when they are desperately short of capital for development".17

Wallich makes an even stronger assertion that:

"There are a great many countries that are in foreign exchange straits but that have no true demand for liquidity. That is the case with many developing countries. Demand for liquidity means to want ready international cash that the country does not spend except in emergency, and it reconstitutes immediately thereafter. The developing countries are in such need of resources that any additional reserves given them would be used to ease a little the tight exchange controls under which most of them operate. In that way, the reserves would be spent on imports and they would not be reconstituted. In any meaningful sense, therefore, the developing countries have, for the most part, no unsatisfied demand for liquidity".18


18 H.C. Wallich, "Testimony", Guidelines for International Monetary Reform (as above), Part 1, p.70.
As they stand, the above arguments are highly suggestive in the sense that the decline in reserve holdings might have involved a deliberate choice on the part of the monetary authorities of the developing countries. However, plausible as the explanations might be, they are all subject to a basic shortcoming; that is, they are not based on any coherent theoretical structure. As such they tend to be oversimplified. It is possible therefore to show that particularly the "stage of growing pains" and the "primitive" rational choice hypotheses are complementary; and that, in an alternative analysis, the "profligacy" hypothesis is not valid.

I.3D: An Alternative Hypothesis

We postulate that, in general, accumulation or drawing down of reserves is a policy decision which ought to be placed in the context of other policy decision variables, e.g., the policy to accelerate economic development. In the developing countries where capital is scarce but there is an urgent need to improve the living standards of the people, accumulation or holding of reserves obviously involves a high social cost. The social opportunity cost of holding reserves can be measured by the foregone return on increasing capital formation or consumption which may be determined by a particular country's marginal rate of time preference. Hence, it can be argued that the problem of the decline in reserve holdings of developing
countries is a reflection not of profligacy but of rational economic behaviour. It is a policy decision based on the assumption that at least the social returns from utilizing part of accumulated stock of reserves for development purposes are greater than those from holding that amount of reserves.

On the basis of the above reasoning, we develop the alternative hypothesis that: given the growth problems of the developing countries, it might be a rational economic decision on the part of the monetary authorities to utilize some of their accumulated stock of reserves to finance development expenditures. Of course, the "stage of growing pains" and the "primitive" rational choice models tend to suggest this but our main contribution will lie in the attempt to work out a theory of demand for international liquidity on the part of the developing countries, which is consistent with the hypothesis. Our analysis will, in essence, be an application of a current theory of demand for money - the "portfolio approach" - to the international payments sphere and we shall attempt to show how this theory can offer further insights into our understanding of the problem at hand. Thus, our approach conforms to the trend in current studies on demand for international reserves which are based on other aspects of monetary theory, e.g., the quantity theory of money.
In Chapter II the existing literature on demand for international liquidity will be briefly surveyed. A theory of demand for international liquidity on the part of the developing countries will then be worked out on the basis of the portfolio approach to demand for money. The use of the financial resources of the International Monetary Fund by these countries is also examined to find out how it helps our main analysis.

Chapter III examines the implications of some proposals for a reform of the international monetary system for the developing countries in the context of the conclusions reached in Chapter II.

In the concluding Chapter IV suggested policy measures are considered, based on our analysis of demand for liquidity. We then summarize and conclude that what is urgently required in the developing countries is not additional reserves per se; rather there is need for a system to effect a large increase of capital aid and other development resources from the developed countries, other international institutions concerned with development, and probably even from the International Monetary Fund. This might be one way to assure harmony in the world economic system.
CHAPTER II

THE DEMAND FOR INTERNATIONAL LIQUIDITY

II: THE EXISTING LITERATURE

Before we proceed to develop a theory to explain the decline in the reserve holdings of the developing countries, it is necessary to survey briefly the existing literature on demand for international reserves with a view to providing the background to this study. In previous studies dealing with the subject, two main approaches can be discerned, namely: the "level of imports" approach and the "money supply" approach. Not all studies fit comfortably into either category, of course.

II.1: The Level of Imports approach

The central feature of studies falling in this category is that they relate the demand for international reserves to the level of imports. Thus for example, we find the research staff of the International Monetary Fund estimating that the industrial countries should hold the reserve-import ratio in the range of thirty or forty to fifty percent, with the implication that this is a desirable target.¹

¹International Monetary Fund, Staff Papers, "International Liquidity and Reserves" (August, 1958, I.M.F.), pp. 48 - 49.
This is a view independently supported by Triffin as well.\(^2\) We may distinguish between three aspects of this approach: the transactions aspect, the precautionary aspect and the optimal level aspect.

II.1A: The transactions aspect

In this category, the approach is based on the application of the quantity theory of money to the international payments sphere, with the level of imports taking the place of transactions and international liquidity taking the place of the money supply. It is assumed that velocity and the price level cannot change enough to offset any decrease in or the decline in the growth of international reserves. Consequently, it is argued that "world reserves ought to grow roughly in accord with the increase in the volume of world trade, measured as a total of world imports"\(^3\) if the inadequacy of world monetary reserves is not to lead to the curtailment of international trade.

Like the classical demand for money analysis, the assumption of a constant velocity of world reserves in the above approach implies that there is unit elasticity of

\(^2\)R. Triffin, *Gold and the Dollar Crisis*, Yale University Press, 1961, p.45. He emphasizes the 40% level and suggests a 20% absolute minimum level of reserves to hold.

demand for reserves with respect to the level of imports. For, if it were possible by an alternative assumption that velocity of world reserves could vary widely, any given level of international reserves could be adequate. Velocity would merely adjust so that any given level of reserves would be matched by the necessary level of imports. Yet, as in classical monetary theory, this adaptability of velocity is ruled out for "institutional reasons". Thus, in one interpretation, the theory of the demand for reserves based on this approach is concerned with the "transactions" demand. It is not necessary, however, to rule out a precautionary motive for holding reserves. An example of a study along these lines is the pioneering work done by Nurkse.4

II.1B: The precautionary aspect

Nurkse started by asserting that international reserves should be held as a buffer to meet fluctuations in countries' balance of payments. Initially, he assumed that the total demand for world reserves could be determined by the possible size and duration of the deficits in the balance of payments of countries combined. Next, he argued that total demand for world liquidity was partly determined by the degree

---

to which business cycles in separate countries were synchronized with each other. Synchronization of cyclical movements, he suggested, would require a smaller volume of reserves, (with less flexibility) in order to fulfil the buffer function, the implication being a constant elasticity of demand for imports and exports. In this way, if for example, all economies expanded and contracted simultaneously and approximately at the same rate, international payments and receipts in individual countries would be moving in the same direction.

In the light of the above argument, he deduced that since it was possible, however, for non-synchronization to create an international payments gap of intermediate magnitude, there was need to expand reserves if this occurred and to reduce them if the contrary case took place. In this way, he concluded that the magnitude of the non-synchronization, uncertainties and errors of diagnosis in policy prescriptions might determine the total demand for international reserves. In addition, Nurkse suggested that long term capital movements create a need for reserves in that these capital flows are cyclically unstable so that a borrowing country, to smooth out its importing capacity, must always set reserves aside to meet this need.

The obvious implication for a developing country which is subject to large variances in its export receipts and which faces a restriction, due to an imperfect capital market, in
autonomous capital inflows might be that the monetary authorities would have to maintain a large volume of reserves. This is necessary if balance is to be maintained in its international payments and receipts. However, does a developing country really hold large reserves as a full precautionary measure against such emergencies as suggested by Nurkse? This is a principal question to which we shall address ourselves later on in our main analysis.

Meanwhile, other studies indicated that Nurkse's demand analysis was inadequate. It was maintained that the amplitude and duration of the cyclical swings in the balance of payments caused by domestic business cycles have been altered in the post war period. Moreover, international reserves function not only as a buffer but also as balances to effect an equilibrating adjustment necessitated by structural payments imbalances. Anything that required that more reserves should be held to perform the latter function was a matter that involved some subjective reckoning of reserve "adequacy" on the part of monetary authorities. In fact, to say that the demand for reserves depends on the level of imports does not tell us what the optimum ratio of reserves to imports is for a particular country. The choice of this optimum level involved a value judgement which varied from country to country. Thus, the emphasis was shifted from concern with the global level to concern with the level of
reserves in individual countries. Some work in this direction was done by J.M. Fleming.5

II.1C: The Optimal Level aspect

Following Scitovsky's idea that global reserves could be adequate if countries behaved symmetrically towards payments surpluses and deficits,6 Fleming suggested that monetary authorities could manage the level of imports to achieve an optimal level of reserves to hold. This was to be done with the recognition that reserve increments are subject to diminishing marginal utility since it is possible to have growing credit ease generate inflation. No doubt, basic to Fleming's position is the hypothesis that the economic gain from incremental reserves becomes progressively smaller and finally negative. In his own words, he maintained that:

"Generally speaking, there is a diminishing and ultimately negative marginal utility of reserve increases; it is this that ensures the existence at any time of an optimal level (of reserves to hold)"7

It is important to note that, on the basis of Fleming's

---


7 J.M. Fleming, op. cit., p.441.
analysis, monetary authorities of individual countries can choose the level of reserves they may want to hold. Hence, a demand function for reserves can, in principle, be specified. Although the above model is developed from the point of view of the developed countries, it can be argued that it is applicable to the developing countries as well. In the latter countries where the essential aim of national policy is economic growth, the costs of excessive reserve accumulation can be viewed in terms of the effects on the growth rate of the economy. Under these circumstances, the Fleming model will be basic to our main analysis.

II.1D: Empirical Findings on the 'Level of Imports' approach

Machlup has criticized the level of imports approach to demand for international reserves. After analyzing the available data on reserve holdings of 14 industrial countries, and relating these holdings to a number of theories which seek to explain the need for reserves, he found that there is no consistent pattern of behaviour among monetary authorities of such countries. Indeed, he has maintained that there are strictly no empirical grounds to conclude that there is a systematic relationship even between official reserve

---


holdings and i) imports, ii) past deficits, iii) variations in foreign trade, iv) imports and capital flows, v) domestic money supply, and vi) current liabilities - all of which may also be thought of to reflect needs. He shows that very unrealistic assumptions will be needed to find out the exact relationship between official reserves and those variables. Emphasizing the contingency function of holding reserves - besides the transactions aspect - he showed, however, that reserves could, other things being equal, be related more to past deficits than the other variables. He distinguished between the demand and the need for reserves and proposed that in his view the need for reserves by a country could be estimated on the basis of past experience.

Although Machlup's model takes account of the precautionary as well as the transactions demand for reserves, it failed to analyze further one aspect of reserves - as a means of holding wealth and not necessarily as a means of payment. Indeed, this aspect of reserves is not emphasized in the literature (i.e., no emphasis is put on whether a country should hold its wealth in reserve accumulation or in some other alternative real asset).

Another theory which Machlup criticized as based on untenable assumptions - the theory that links the size of imports with the probability distribution of deficits in the balance of payments and the function of official reserves to
finance such deficits - has received empirical verification from Kenen and Yudin.¹⁰ From the hypothesis that countries hold reserves to cope with disturbances in their balance of payments, they specified that a country's demand for reserves depends on expectations as to size and duration of the disturbances in the balance of payments. Hence, the derived demand function is cast in terms of three parameters: the anticipated mean disturbance, \( \varepsilon \), the variance, \( \sigma_t^2 \), and the duration of the disturbance, \( \rho \). On the basis of these parameters, a demand function of the form,

\[ R_{it} = \beta_0 - \beta_1 \varepsilon + \beta_2 \rho + \beta_3 \sigma \]

is derived, where \( R_{it} \) measures the ith country's official reserves at the start of the month. The regression equation was then used to appraise the distribution of reserves for the countries covered. The statistical significance of the demand function, however, indicated that only the variance term, \( \sigma^2 \) is essential, for it showed that official reserves are in fact related to the variance of past (expected future) disturbances. It is to be noted that the above empirical studies dealt mainly with the industrial countries,¹¹ a flaw


¹¹ These countries are: Austria, Belgium, Canada, Denmark, Finland, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland and the United Kingdom (1957 - 1962). In Machlup's study cited above, France, the United States, Ireland, and Australia are included, but Norway, New Zealand are excluded (1961 - 1965).
manifested also in the money supply approach to demand for international reserves.

II.2: The Money Supply Approach

The relationship between demand for reserves and the money supply is implicit in the works of Johnson and Scitovsky. Making use of the real balance effect as a mechanism that links individual countries' economic systems into the world economic system (under appropriate circumstances), their models indicate that the level of reserves appropriate for a given country depends on the manner in which the monetary authorities manage the domestic money supply in response to an external deficit. To Johnson, a country should hold reserves sufficient to allow any foreign imbalances to correct themselves through the drawing down of domestic real balances. On the other hand, Scitovsky has argued that the sum of domestic cash balances tends to overstate the ability of a country to run an external deficit; in this way, the minimum level of reserves postulated should correspond to the particular country's ability to overspend externally by drawing down its cash balances. In other words, these arguments are suggesting that reserve management should be so made as to keep in step with the domestic money supply in a manner dictated by the propensities of the particular country to import and to spend domestically.

---

II.2A: Some Empirical Findings of the Money Supply approach

Maintaining that the concept of the money supply is not unambiguous and even if this difficulty were overcome, the ratio of official reserves to the money supply varied from country to country, Machlup, in his study of 14 industrial countries, found that there was no systematic relationship between the variables. He asserted:

"The enormous differences among countries compel rejection of any theory that would assert a needed or most desired ratio of foreign reserves to the quantity of domestic money supply, unless the theory included some parameter that would fit the ratio to particular circumstances."13

However, in a very recent article, a contrary result was obtained by Courchene and Youssef in an empirical study on demand for international reserves.14 Their model attempted to determine the explanatory power of the variables, 'the level of imports', the 'money supply' and the long term interest rate, (long term government bond rates). Their study on 9 industrial countries indicated that there is a stable demand function for reserves with the money supply and the long term interest rate as the necessary explanatory variables. The authors' regression equations, however, failed


to indicate the level of imports approach as statistically significant - a not surprising result owing to the assumptions employed.

At this point, it might be stressed that most of the studies cited above are done from the point of view of the developed rather than the developing countries. Similarly, the empirical studies all use interest rate and other relevant data obtained from the industrial countries. This bias, probably arising from the charge of insufficient data in the developing countries themselves, is partially offset in a work done by two Indian economists. Their study on the demand for international reserves deals exclusively with the developing countries.  

II.3: Application of the Keynesian Liquidity Preference Theory

Courchene's and Youssef's work was based on the finding that both the transactions and precautionary demand for reserves might be interest elastic; however, the study made by the two Indian economists takes into account the speculative aspect as well. Indeed, the latter work is an application of a simplified version of Keynesian monetary economics to the international payments sphere. They derive a demand function for gross reserves, $G_r = f(m, i,)$, with level

---

of imports, $m$, and the short term interest rate, $i$, as the necessary independent variables. Their analysis is a result of their criticism of Triffin's approach to the same problem of demand for liquidity which considers only the transactions aspect based on the demand function, $D_r = f(g, n)$, where $g$, the rate of growth in world economies, and $n$, the ratio of gross reserves to imports, are all assumed to be necessary explanatory variables.\(^{16}\) The main contribution of the authors' study lies in the inclusion of the speculative demand as a function of the interest rate and the application of the whole analysis to the liquidity problems of India and other developing countries. Indeed, on the basis of their theory, they emphasize the need to liberalize the terms of borrowing by the developing countries, from both the developed countries and other international organizations.

II.4: Conclusion

From our brief survey of the existing literature, it may be concluded that there is a gradual recognition that demand for international liquidity can be treated as demand for a liquid asset, just like money. The full implications of this have, however, not been explored. Moreover, there seems to be a controversy over the relevant explanatory variables that ought to be included in the demand function.

for reserves. Some economists stress the "level of imports" or the "level of imports" and the interest rate; others prefer "the money supply" or the "money supply" and the interest rate. In either case, it is not even clear whether the short term or the long term rate has greater explanatory power. Finally, it is evident that very little work has been done exclusively on the demand for reserves by the developing countries.

The alternative theory we shall be concerned with below does not attempt to solve or reconcile these problems as they exist in the literature. Rather, we shall examine, as said before, the problem of the precautionary demand for international liquidity mainly on the part of the developing countries from a different viewpoint of monetary theory - the portfolio approach to demand for money. This theory will serve as a vehicle for explaining the decline in reserve holdings of the developing countries. The justification for the use of this theory lies partly in the fact that, like money, international liquidity, considered as a means of holding wealth, may not only be a substitute for other "near reserves" but also for real assets. Moreover, in the developing countries, where a high price is put on the holding of reserves that might otherwise be used to purchase the needed capital equipment from abroad, it is more fruitful to view their demand for liquidity as influenced by cost and yield considerations rather than primarily as a means of effecting a certain volume of transactions. The relevance of
our approach, therefore, lies in the fact that the portfolio theory involves a choice between various alternatives with yields and risks in a world of uncertainty, which, as will be shown below, is what we need as a basis for our analysis.

In the rest of this chapter, we shall deal with the portfolio approach to the demand for precautionary money balances and attempt to employ it to explain the decline in reserve holdings of the developing countries.

II.5: THE THEORETICAL FRAMEWORK

We have found from the preceding sections that, in principle, it is possible to specify a demand function for an optimal level of reserves a particular country may want to hold, even though the empirical literature reveals a controversy over which explanatory variables should be included in this function. Moreover, it is evident from the literature that it is possible to employ some concepts of monetary theory as a theoretical basis for demand for international reserves. This is particularly true if we recall the empirical study done by Courchene and Youssef.

The basic theoretical framework within which our analysis will therefore be placed is provided by Tobin's model of the portfolio approach of the demand for money. However, because our present analysis differs from previous studies it may be necessary to explain briefly what the portfolio theory is about.
II.5A: The Portfolio Approach

Tobin's analysis of the precautionary demand for money is approached in terms of asset preferences or portfolio balance. Money is considered an asset, a means of holding wealth and not necessarily as a means of payment. It is also considered as one of a spectrum of assets of varying liquidity. Hence, the theory is based on a choice between assets whose yield is high but for which the risk of capital loss is great and those whose yield and risk are both low. Such an approach differs from Keynes' liquidity preference theory in which asset holders are assumed to choose between only money and bonds, all of which are further assumed to be identical as to maturity and risk.

Under certain assumptions including a constant rate of interest and a given price level, the portfolio approach assumes that an individual investor seeks to maximize the expected value on his portfolio, where there are at least two parameters in his utility function, expected yield and risk. In other words, the investor is assumed to have preference for expected yield and an aversion towards risk. He is supposed to be willing to assume more risk if expected yield increases enough to offset greater risk and vice versa. Hence, other things being equal, he will choose of the possible combinations of assets more of those whose rate of return is relatively higher and fewer of those which have a
lower rate of return. Under conditions of uncertainty, he will prefer, of any two portfolios with the same expected yield, the one with the lower dispersion of yield. Thus, the higher the prospective yield of a portfolio, the more he will be induced to accept additional risks on the alternative asset that is more remunerative.

In its simplified form, the theory assumes that the investor has in his portfolio only two assets, A and B. His total assets are thus equal to $T = A + B = 1$, where $A > 0$, and $B > 0$. It is assumed that A (money) is a riskless asset in the sense that its yield has a zero variance, that is its rate of return has a certain value of $\mu_a$. On the other hand, B (bond) a real asset is risky in the sense that its outcome has a non-zero variance. Its rate of return has a mean value of $\mu_b$, and a variance, $\sigma_b^2$. Thus the mean value of the rate of return on the whole portfolio will be, $\mu_p = (A\mu_a + B\mu_b)$, and by the same token, the standard deviation of the rate of return on the portfolio will be, $\sigma_p = \sqrt{\mu_b B}$. If $U(A,B)$ is the utility function for the particular investor, then he will seek to maximize $E[U(A\mu_a + B\mu_b)]$, subject to his total wealth constraint. It is considered that the portfolio has a certain risk and the investor regards the total variance of the expected value of the portfolio as an indicator of
this risk.\textsuperscript{17}

Figure 1 summarizes the main implications of this argument. OK\textsubscript{1} is an opportunity locus tangent to an indifference curve, I\textsubscript{1}. The opportunity locus depicts combinations of assets at the disposal of the wealth holder. Its slope measures the interest rate and the proportions of the risky asset held in the portfolio. Point 0 corresponds to complete specialization of the portfolio in the low yield asset, A, while K\textsubscript{1} corresponds to complete specialization in the high yield asset, B. And the same holds true for OK\textsubscript{2} and II\textsubscript{2}. I\textsubscript{1} represents combinations of equal expected yield, all equivalent to a certain return, OB. The investor would be indifferent between portfolios on this curve. For a given risk, U\textsubscript{p}, the investor always prefers a greater to a smaller expected yield, U\textsubscript{p}. Thus, at P\textsubscript{0} where the opportunity locus, OK\textsubscript{1} is tangent to the indifference curve, I\textsubscript{1}, he maximizes expected value on his portfolio, subject to his wealth constraint, W. At P\textsubscript{0}, he holds OP\textsubscript{0} of B and OK\textsubscript{1} - OP\textsubscript{0} of the riskless asset, A. Points above P\textsubscript{0} are preferred to those below it so that at P\textsubscript{1} where the investor is on a higher indifference curve, II\textsubscript{2}, he holds more of B at a higher

Figure 1. Portfolio choice by the wealth holder.
risk but with the expectation of higher yield as well. Obviously, OP₁ > OP₀.

From the above analysis, it is concluded that the precautionary demand for money is inversely related to a rate of interest which is assumed to be a convenient measure of the differential between the secure and random rates of return on assets, A and B respectively. It is to be noted that in this analysis the investor holds money because of uncertainty and an aversion towards risk. Indeed, risk aversion is assumed normal behaviour.

Our next task is to demonstrate that the demand for international liquidity can be analyzed on the same principles as above. That is, if international liquidity is considered as international money, then its derived demand function should have the same property of the inverse relationship with the rate of interest. To be able to do this, certain assumptions are necessary.

II.6: THE APPLICATION OF THE PORTFOLIO APPROACH

II.6A: Assumptions

Our first basic assumption is that a Central Bank (monetary authority) can be regarded generally as a wealth holder or a spending unit. This is a reasonable assumption to make since as an arm of the government, the monetary authority may be regarded as making choices on the composition
of wealth for the society as a whole. It has the power to carry these choices into effect through the government, which may institute direct and indirect controls. This includes control over the country's balance of payments. Thus, it can manipulate the level of reserves through the level of exports and particularly through the level of imports.

Secondly, at any point of time, the monetary authority has the power to allocate to various uses both the income and wealth of the country. We can classify the purposes to which it will devote these resources as consumption, capital formation and international liquidity. To further simplify the analysis, we assume that an increase in capital formation leads to a proportionate increase in domestic consumption in the long run. Under this assumption, both consumption and capital formation are treated as one composite "real" asset. Finally, the monetary authority is regarded as having a portfolio consisting of only liquid (international liquidity) and "real" (capital formation plus consumption) assets.

On the basis of these assumptions, we may cast our analysis of the demand for international liquidity in terms of the usual theory of consumer choice. We consider that the demand function will be determined by three major sets of factors: namely, a) the total resources (wealth) of the country that is to be held in various forms, b) the prices and returns on all the alternative forms of holding wealth,
and c) the tastes and preferences of the monetary authority (Henceforth we shall be using "government", "country" and "monetary authority" interchangeably.) If a) and b) are given, the portfolio theory requires that the authority's utility function, which, we assume, reflects a high capital asset preference, be determined by two parameters, risk and expected yield. Under these circumstances, how do we specify the demand function for reserves on the part of a developing country?

II.6B: A Developing Country's Demand for Liquidity

We assume we are dealing with a "typical" developing economy represented, for example, by the model underlying the "stage of growing pains" hypothesis. It is a small open economy which is striving for rapid economic development in a large and uncertain world. Since domestic savings are low, it can increase capital formation mainly through capital goods imports. The monetary authority is regarded as making rational policy decisions on the combination of assets in his portfolio such that future per capita consumption (expected yield) can be maximized. In this decision-making process, what are the alternatives open to the country?

B.i: The Cost of Reserve Accumulation

Current studies emphasize that the advantages of holding reserves stem from the convenience and the security
that a wide choice of adjustment techniques offers.\footnote{Recall Nurkse's argument as outlined in the review of the literature. See also, M.O. Clement, R.L. Pfister, and K.J. Rothwell, Theoretical Issues in International Economics, J.W. Markham edition, Houghton Mifflin Co., Boston, 1967, pp.402 - 403.} A country chooses to hold reserves because they have a marginal utility measured in terms of the services they provide. That is, they permit the country to ride out temporary and periodic disturbances in its balance of payments and they afford it an effective weapon against speculative attacks on its currency. Plausible as these benefits might be, however, reserve accumulation is not itself a costless action.

Generally, the marginal utility obtained from holding reserves declines as their quantity increases since the hoarding of any reserves in excess of a country's need represents a real sacrifice in terms of consumption or investment foregone. Thus, beyond a certain point, the marginal cost of holding reserves begins to exceed the marginal utility of holding them.\footnote{This point indicates an equilibrium point where the marginal cost is equal to the marginal utility of holding reserves. It may therefore be designated as the minimum level of reserves to hold by a country. In particular, it corresponds to the level estimated by the research staff of the IMF for the developed countries. Since these countries, however, have a high marginal propensity to hold reserves, it can similarly be argued that developing countries which have a low marginal propensity to hold reserves should also maintain reserves lower than this minimum level.} The marginal return on holding reserves depends on the amount involved, the holding
period, and the interest rate. But if we allow only for the interest rate that can be earned on reserves, the cost of holding them is the loss of their use of real resources given up by accumulating reserves. This cost can be measured by the rate of return on investing the reserves in real resources which might otherwise assist to expand output and to stimulate real economic growth. Similarly, the cost can be measured by the interest rate on investing the reserves in less liquid foreign securities.

For a developing country which is striving for rapid development, the social opportunity cost of holding reserves is very high since they could be used to purchase the needed foreign goods (capital included) and services. In this way, the choice in regard to the form in which the monetary authority will want to hold the country's wealth lies between relatively unprofitable reserve accumulation and their investment in a channel that will yield higher social returns for the economy as a whole.

B.ii: The Rate of Return on Capital Formation

By assumption, the level of domestic savings is low, and besides other structural problems of growth, there is acute shortage of capital in the developing economy. Hence, a program for industrialization would initially require large capital goods imports, or direct foreign lending and investment.
It is noticeable, however:

"............... that young nations do not attract much private capital. Faithful to the principle of immediate returns, ... the capitalists are very chary concerning all long term investments, when asked to invest in independent countries. They are often hostile to the prospective programmes of planning laid down by the young new government ... They willingly agree to lend money ... but only on conditions that this money is used to buy their manufactured products and machines. In other words, that it serves to keep the factories of the mother country going".20

In addition, the volume of direct foreign investment may be limited because of risk of political instability, fear of nationalization, and other regulations concerning the earnings that can be taken out of the developing country. Under these circumstances, the expected inflow of capital will not be sufficiently available to cover deficits in the balance of payments of the country. At a minimum, it is this restriction in the expected inflow of capital, coupled with the scarcity of domestic capital itself, besides some imperfections in the capital market, which bring about an inequality between the world market rate of interest and what may be called the social rate of return on capital (or the social marginal productivity of capital), making the latter higher than the former. This rate is implicitly the same as the social opportunity cost of holding reserves which, as we said before, is high for a developing country. An additional factor re-

\[\text{20 F. Fanon, The Wretched of the Earth (New York, 1966), pp. 78 - 82.}\]
inforcing this higher rate of return on capital might be the desire of the developing country to catch up with the living standards of other developed countries, i.e., a demonstration effect.

B.iii: The Risk of Inadequate Reserves

By hypothesis, it might be rational for the country to utilize some of its reserves to finance development expenditures. Hence, faced with a situation in which there is a relatively low rate of return on reserve accumulation but a relatively high one on capital formation, the monetary authority will seek a rearrangement in its portfolio such that there will be a shift from holding more of the liquid asset to holding a larger amount of the "real" asset. That is, it will draw down reserves to finance expenditures on capital formation, which, by assumption, can mainly increase through imports of capital goods (intermediate production goods included). Other things being equal, it is possible to conceive that this process of utilizing reserves for capital formation might go as far (probably to zero) as placing the developing country in a situation where it will run the risk of being unable to pay for the needed imports. This might have the effect of disrupting the entire development process itself. In this way, it is necessary for the country to hold some reserves as an aversion to this risk. Indeed,
there are strong arguments to suggest that some reserves should be held.

In a large and uncertain world in which export terms of trade are exogenously determined for the developing country, export earnings are very unpredictable. Moreover, due to some imperfections in the world capital market and the risk associated with foreign investment in this country, adequate capital inflows are hard to forecast. Hence, it is necessary for this country to hold some reserves as a precautionary measure against short term fluctuations in its balance of payments. There is another essential factor reinforcing the necessity to hold some own reserves. The International Monetary Fund is the only source of conditional liquidity for this country. Though the cost of being reserve-deficient is the interest cost of borrowing which incidentally is low at the Fund, the fact that credits are imperfect substitutes for own reserves and they can be made available to the drawing country only after it has accepted to observe certain conditions (which may interfere with its domestic policies of development) makes this cost practically high. As Fleming put it; "The difficulties of utilizing conditional liquidity at short notice, its unsuitability as a war chest, the undesirability of accumulating too many repayment obligations, and the reluctance that some countries may feel at accepting the conditions under which it is made available"\textsuperscript{22} - all these

\textsuperscript{22}J.M. Fleming, "International Liquidity: Ends and Means", \textit{op. cit.}, p.448.
factors will necessarily set a limit to the country's willingness to draw down own reserves to zero. In this way, the restricted supply of 'conditional liquidity' from the Fund would further explain why the developing country may have to hold some own reserves as an aversion to the risk of being unable to pay for the needed imports for development.\(^{23}\)

What we have said above merely implies that the developing country should hold some reserves; it does not tell us what level of reserves the country should maintain. However, by assumption, we know that the monetary authority has control over its balance of payments\(^{24}\) and it has the power to choose the level of reserves it wants to hold, other things equal. In this light, it is conceivable that the pressing demand to increase economic development and therefore capital formation will force it to fix this level at a low point where a subjective calculation of the risk is just compensated by the social rate of return on capital. Thus, the higher the social rate of return on capital formation relative to the cost of being reserve-deficient, the

\(^{23}\)We shall examine in some detail Fund activities with the developing countries in recent years in a later section.

\(^{24}\)See appendix on Chapter II, Section II.6, pp. 108-109.
more likely it is that an increase in the range of distribution of expected foreign exchange flows (through either export earnings or capital inflows) will encourage the country to take a large risk of holding a low level of reserves. To function with this low level of reserves, the monetary authority would manipulate the level of imports through the use of import and foreign exchange controls.25

B.iv: The Cost of Manipulating the Level of Imports

The use of import controls, obviously, has implied economic and real costs for the country. Nevertheless, on our proposition that the policy is a deliberate one based on the chosen development strategy, we can further postulate that this country is prepared to bear these costs. We learn from the analysis that capital formation can increase in this country mainly through imports of capital goods. This means that, to effect the increase, the use of the controls should alter the composition of imports in such a way that there will be a "capital-goods-import" bias. Thus, at any moment of time, more capital goods can be obtained but only at the expense of less imports of consumer goods. If the domestic supply of consumer goods is inadequate (which might be the case in a developing country at an initial stage of industrialization),

25 The use of such controls is of the discretionary kind which, it is claimed, does not "correct" or "remove" a deficit, but "suppress" it. See, for example, F. Machlup, Real Adjustment, Compensatory Corrections, and Foreign Financing of Imbalances in International Payments, Reprints in International Finance, No. 2 (Princeton University, September, 1965), especially pp.192 - 193.
it is possible that the procedure will have the effect of slowing down the tempo of development in the country. The reason for this may be expressed succinctly in another way: to the developing country, a policy to increase capital formation (in this case, through increase in capital goods imports) may be said to have a "production" effect. That is, the stimulus given by the initial increase in investment in the economy which is expected to result in greater increase in national income than before. An increase in the share of investment, however, implies a reduction in current consumption (brought about by the use of direct and indirect controls) which may have an adverse effect on the productivity of labour and, consequently, on the expected increase in national income. This is the "consumption" effect, the strength of which is determined at any moment of time by the adverse impact on productivity and the shortage of consumption goods. Since this shortage may result in disincentives to work, it may affect the overall process of growth in the economy. In this way, it is clear that, although the net increase in national income depends on the relative strength of the two effects, development via this policy involves a great amount of risk.

At this point, let us, for comparative purposes, consider the requirements of the International Monetary Fund
concerning the minimum level below which reserves cannot be run down. We assume that for various levels of reserves, a particular country faces varying degrees of risk. Thus, in Figure II, R₂ may be termed as the "standard risk level" which attaches to the minimum level of reserves, X₂ which is to be maintained by industrial countries in the view of the IMF so as to achieve external balance without much disturbance to the domestic economy. R₁, on the other hand, is the actual "effective risk level" taken by some developing countries by maintaining a lower reserve level, X₁ but viewed by them as conforming to the objectives of their internal development policies. Obviously, X₂ > X₁ and R₂ < R₁. In Figure II, SS is a risk curve. It is convex to the origin because there is diminishing marginal risk as the quantity of reserves increases. Thus, the lower the ratio of reserves to imports, the greater is the risk or the magnitude of import restrictions and exchange controls that will be imposed in a particular country, and vice versa. The political and other arguments of whether the developing countries would be defying international monetary conduct will not be considered here since they fall outside the scope of this exercise. The important point we must note is that the relatively high risk, R₁ will be taken by the developing country but behind this deliberate choice of policy is the expectation that, in the long run, the benefits accruing from increase in capital formation will far
Figure II. Comparison of Risk Levels of Developed and Developing Countries
compensate for the short-run costs involved.\textsuperscript{26} Hence, we can establish that such a developing country has chosen a risky portfolio. That is, the monetary authority has chosen a combination of assets in its portfolio where there are more of the "real" asset and fewer of the liquid asset.

The main argument of this analysis can now be summarized in Figure III. The line CT or CK depicts combinations of the two assets at the disposal of the monetary authority. \( AA_o \) and \( BB_o \) are indifference curves representing the preferences of the authority at different levels of risk. It is assumed that it has preferences between expected increase in per capita consumption occasioned by increase in capital formation and risk of inadequate reserve level.

\textsuperscript{26}"Current discussion on economic development is usually dominated by a static or a very short term view. Investment has been regarded as a deduction from income, which it will be very difficult to raise since per capita incomes in the poor countries are so low. The other, and more positive, role of investment as an instrument of raising income is sometimes lost sight of. Investment merely appears as a cost, as a burden, bearing an inverse correlation with consumption. Only in a long term view does investment assume its real role as the major factor in raising output. Hence, its correlation with consumption becomes direct rather than inverse. The greater the investment, and the larger the output, the higher the consumption". See, Surrendra J. Patel, Journal of Modern African Studies, "Economic Transition in Africa", Vol. 2, no. 3, Cambridge University Press, 1964, p.346."
Figure III. Portfolio Choice by the Developing Country
Their shape reflects the assumption of risk aversion - a diminishing marginal rate of substitution of reserve accumulation for capital formation as the latter increases at the expense of the former. The curves rise for this risk-averting authority. As it takes more risk, it must be compensated by a higher expected increase in per capita consumption. Given the structure of the economy, the instruments available, and the preferences of the authority (reflecting the preferences of society), the tangency point, P, indicates that the country is on a higher indifference curve, AA_o, with both higher expected increase in per capita consumption, OA, and higher risk, OG. On curve, BB_o, the equilibrium point is S with both lower expected increase in consumption, OB, and lower risk, OF. Thus, the closer the tangency point is to the vertical axis, the less reserves will be utilized to finance development expenditures, and vice versa.

Our analysis will apply to countries on the I-curve AA_o. By comparison, the curve BB_o can be taken as typical of the oil-producing countries. It is clear that in the former situation, investment in capital formation has taken place at the expense of reserve accumulation - a choice of risky portfolio that goes along with it an expectation of higher increases in per capita consumption in the long run.
Since a low level of reserves goes with a high expectation of high return on per capita consumption, and by assumption, on capital formation, we can state that demand for international liquidity is inversely related to an interest rate which may be a convenient measure of the differential between the rate of return on capital formation and that on holding reserves. The higher this interest rate, the smaller will be the demand for reserves (and vice versa). On the basis of our analysis, it can be seen that a developing country (as defined) has a low precautionary demand for international liquidity.

B.v: Conclusions

Two consequences follow from the above analysis.
First, the determination of a country's own demand for a stock of reserves implies an idea of some psychological reckoning based on non-economic as well as economic policy considerations and shaped in part by the subjective values of the monetary authority in the particular country. As McLeod put it:

"The equilibrium level of individual ... holdings of owned reserves is ultimately determined by the holders in the light of their assessment of all existing circumstances. In any case, it is certainly not determined by what some other individual or body, however expert, may think it should be".27

27A.N. McLeod, "Contentious Thoughts on International Liquidity", op. cit., p.14
Thus, granting the existence of such value judgements and preferences of monetary authorities, a country may not demand a specific stock of reserves - considered as internationally acceptable - but rather any amount of reserves falling within a range that is considered adequate.

Secondly, the average amount of reserves held by a particular country will be a resultant of economic equilibrating processes and not a datum as assumed by some economists who employ the transactions approach. Consequently, in our analysis the ultimate demand function for international liquidity is \( D_r = f(R,W) \), where \( R \) = the rate of interest, and \( W \) = the wealth of the economy. It does not contain as a variable the volume of transactions. It contains rather those basic technical and cost conditions that affect reserve management. The demand equation itself reflects a wealth constraint and a substitution effect on the demand for international liquidity. The function, therefore, mirrors the general view that demand for international liquidity can be considered part of a general theory of portfolio selection or asset preferences.

Finally, it might be noted as a sidelight that at the same time the developing country determines its demand for reserves, it may also contemplate on the composition of this demand. That is, the proportions in which it might wish
to hold gold and convertible foreign currencies. This determination also involves some cost balancing and value judgments. The cost of holding gold is the sacrifice of interest that could be earned on foreign exchange assets, i.e., foreign securities. The cost of holding reserve currencies, on the other hand, is the risk of devaluation (exchange risk) or inconvertibility. Given the implications of our main analysis, it can be stated that a developing country cannot afford to invest in excessive gold accumulation. Hence, its ratio of gold to reserve currencies will be low as compared to that of a developed country. Table II shows countries' official reserves (1960-1966). It is evident from it that for the developing countries—reserve positions at the Fund are low while their holdings of other internationally liquid assets are small relative to those of the developed countries. For example, total gold holdings of all developing countries tend to be about 20% of the total for both the United States and United Kingdom.

II.7: USE OF THE INTERNATIONAL MONETARY FUND

In the above analysis, we have defined international liquidity as the developing country's holdings of gold and foreign exchange reserves plus its I.M.F. position. I.M.F. position was further defined as the country's drawing rights in the gold tranche, which is equivalent to its owned reserves.

TABLE II. COUNTRIES' OFFICIAL RESERVES, 1960–66

(In millions of U.S. dollars)

<table>
<thead>
<tr>
<th>Net Changes in Reserves</th>
<th>Totals, End of 1966</th>
<th>Total Reserves as Percentage of Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>-2,145</td>
<td>-606</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>918</td>
<td>-401</td>
</tr>
<tr>
<td>Total reserve centers</td>
<td>-1,227</td>
<td>-1,007</td>
</tr>
<tr>
<td>France</td>
<td>536</td>
<td>1,093</td>
</tr>
<tr>
<td>Germany</td>
<td>2,242</td>
<td>131</td>
</tr>
<tr>
<td>Italy</td>
<td>195</td>
<td>248</td>
</tr>
<tr>
<td>Belgium-Luxembourg and Netherlands</td>
<td>622</td>
<td>402</td>
</tr>
<tr>
<td>Switzerland</td>
<td>261</td>
<td>454</td>
</tr>
<tr>
<td>Other Industrial Europe</td>
<td>54</td>
<td>328</td>
</tr>
<tr>
<td>Total Industrial Europe</td>
<td>3,910</td>
<td>2,940</td>
</tr>
<tr>
<td>Canada</td>
<td>-40</td>
<td>287</td>
</tr>
<tr>
<td>Japan</td>
<td>502</td>
<td>-283</td>
</tr>
<tr>
<td>Total industrial countries</td>
<td>3,140</td>
<td>1,940</td>
</tr>
<tr>
<td>Other Developed Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other European countries</td>
<td>369</td>
<td>322</td>
</tr>
<tr>
<td>Australia, New Zealand, South Africa</td>
<td>588</td>
<td>204</td>
</tr>
<tr>
<td>Total other developed countries</td>
<td>-220</td>
<td>825</td>
</tr>
<tr>
<td>Less Developed countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle East oil producers</td>
<td>-49</td>
<td>55</td>
</tr>
<tr>
<td>Other Middle East</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>Far East</td>
<td>-115</td>
<td>-302</td>
</tr>
<tr>
<td>Other Asia</td>
<td>-115</td>
<td>-302</td>
</tr>
<tr>
<td>Latin America, North</td>
<td>-154</td>
<td>-88</td>
</tr>
<tr>
<td>Other Latin America</td>
<td>-196</td>
<td>-166</td>
</tr>
<tr>
<td>Africa</td>
<td>50</td>
<td>312</td>
</tr>
<tr>
<td>Total less developed countries</td>
<td>-30</td>
<td>-725</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2,685</td>
<td>2,035</td>
</tr>
</tbody>
</table>

1 Excluding Soviet countries and Mainland China. Totals may not add because of rounding and because some area totals include unpublished data.
2 Including reserve position in the Fund. No sign indicates increase; minus sign indicates decrease.
3 Reserves at end of each year as percentage of imports e.l.f. during the year.
4 Including swap claims and nonmarketable U.S. Government securities.
5 Austria, Denmark, Norway, Sweden.
6 Finland, Greece, Iceland, Ireland, Portugal, Spain, Turkey, Yugoslavia.
7 Iran, Iraq, Kuwait, Libya, Saudi Arabia.
8 Republic of China, Korea, Malaysia, Philippines, Thailand, Vietnam.
9 Central America, Dominican Republic, Jamaica, Mexico, Panama, Venezuela.
10 Excluding Libya and the United Arab Republic.
11 Percentages for country groups are based on the imports for countries to which reserve statistics refer; the percentage for the total relates, however, to the total imports of all less developed countries and, primarily because dependent territories have no separate monetary reserves, this percentage lies below the weighted average of the subgroups listed.

12 Excluding Soviet countries and Mainland China. Totals may not add because of rounding and because some area totals include unpublished data.
13 Including reserve position in the Fund. No sign indicates increase; minus sign indicates decrease.
14 Reserves at end of each year as percentage of imports e.l.f. during the year.
15 Including swap claims and nonmarketable U.S. Government securities.
16 Austria, Denmark, Norway, Sweden.
17 Finland, Greece, Iceland, Ireland, Portugal, Spain, Turkey, Yugoslavia.
18 Iran, Iraq, Kuwait, Libya, Saudi Arabia.
19 Republic of China, Korea, Malaysia, Philippines, Thailand, Vietnam.
20 Central America, Dominican Republic, Jamaica, Mexico, Panama, Venezuela.
21 Excluding Libya and the United Arab Republic.
22 Percentages for country groups are based on the imports for countries to which reserve statistics refer; the percentage for the total relates, however, to the total imports of all less developed countries and, primarily because dependent territories have no separate monetary reserves, this percentage lies below the weighted average of the subgroups listed.
The definition therefore tended to ignore another aspect of liquidity - conditional liquidity at the Fund. This is access to drawing rights in the credit tranches, which are considered perfectly liquid assets, though imperfect substitutes for own reserves. In this section, we intend to elaborate on our original contention (p.47) that policies governing access to these lines of credit tend to support the argument that the developing country should hold some reserves. For, if the country had sufficient assured access to lines of credit at the Fund, it is conceivable in view of our analysis that it would further draw down its own reserves to finance development expenditures. The very policies governing drawings in the credit tranches indicate that the willingness of the country to follow this course of action will be limited.

II.7A: Policies Governing the Use of Fund Resources

Generally, when a country joins the Fund, it pays 25% of its quota in gold and 75% of it in its own currency. On the basis of these quota subscriptions, the country obtains unrestricted access to a certain amount of the Fund's holdings of foreign currencies (gold tranche, 25%) and conditional rights to larger amounts in the credit tranches (75%). A typical developing country has a percentage quota of about between 1 - 5% of total members' quota in the Fund. Besides this relatively small quota, Fund credit can be made available
to all members only in such circumstances that these countries have satisfied the Fund of their intention and capacity to restore external balance and assist in achieving other objectives of the Fund.\textsuperscript{29}

First and foremost, when a member draws on the Fund, it indicates as a matter of general policy its intention to repurchase the Fund's holdings of its currency acquired in the transaction not later than three to five years after the drawing, unless these holdings are otherwise reduced. A drawing from the Fund provides the drawing country with a liquid asset, an international money of some form, in exchange for a short term liability in terms of the repurchase obligation. A member cannot reduce the Fund's holdings of its currency below 75\% of its quota and cannot use also a currency in repayment which will raise the Fund's holdings of that currency above 75\% of the particular country's quota. These policies are essentially meant to preserve the liquidity of the Fund during transactions. Thus, we should be more interested in discussing the policies governing drawings in the tranches, particularly those in the credit tranches. For in the gold tranche drawings are automatic in that member countries can count on the receipt of an overwhelming benefit of the doubt in regard to drawings which will raise the Fund's

\textsuperscript{29}L.B. Yeager examines these objectives; see his \textit{International Monetary Relations}, Harper and Row (New York, 1966), pp.347 - 358. See also, C. Gutt, \textit{International Monetary Fund and its Functions}, The Academy of Political Science, Columbia University, 1947, pp.53 - 56.
holdings of a particular member's currency to not more than its quota.

A.i: The Credit Tranches

Generally, drawings in the first credit tranche - i.e., currency holdings (0 - 25%) above a member's quota - may be favourably allowed if the member justifies the need for the request. Beyond this tranche, drawings are strictly conditional and they can be permitted given the need and the substantial justification. Sometimes drawings within the quota limit of 25% within a 12 month period may not provide a member with the amount of assistance it may need to meet its problems. In such cases, the Fund might employ the use of waivers. Some policies governing drawings beyond the gold tranche are also designed to deal with standby arrangements.

Standby arrangements are often negotiated on specific understandings regarding the use of the resources available. Usually the granting of such an arrangement is accompanied by a letter of intent which contains precise declarations of policy to be followed by the drawing member, including measures such as those concerning the extension of bank credit to the government or the private sector and concerning public finance. Indeed, the most common purpose for which Fund assistance is given to a developing country is in support of stabilization programs designed to eliminate inflation and
reduce reliance on restrictions both on trade and payments.\textsuperscript{30}

Large amounts of resources are always available in the credit tranches but the use that a country can make of standby rights, for example, is conditioned by the Fund's rules regarding drawings in this area. The obligation of a member drawing under the facility to consult the Fund prior to adopting any practice or policy increases indirectly the power of the Fund to dictate national policies which it has on occasion done, in terms of the type of stabilization program designed for the particular country. The reason is that most developing countries have a belief in cheap money policy and inflation as instruments to assist and advance industrialization. Moreover, they tend not to be interested in the achievement of external balance for its own sake; that is, they consider it a policy constraint rather than a policy objective. These policy objectives of the developing countries tend to conflict with those of the Fund.

Sometimes, some standbys may include conditions intended to discourage excessive debt burden and the acceptance of an unduly large amount of suppliers' credits.\textsuperscript{31}


\textsuperscript{31} See, for example, P. Lieftinck, \textit{External Debt and Debt-Bearing Capacity of Developing Countries}, Essays in International Finance, Princeton University, March, 1966, no. 51, especially pp.4 - 11.
The Fund does not agree to refinance debts directly but it may participate in a debt renegotiation with the countries or agencies concerned. It offers financial assistance only when this may lead to a successful implementation of a stabilization program. The Fund has provided this type of assistance on an informal basis as part of the negotiations in regard to the outstanding debts of Turkey in 1958/59, Brazil in 1961 and 1964, Argentina in 1962 and 1965, Liberia in 1963, Indonesia in 1963, and Chile in 1965.

It is true to some extent that a general belief in the ability of countries to maintain viable exchange rates has been engendered by the existence of these arrangements. These arrangements are, however, more beneficial to the developed countries than to the developing countries since in the latter internal policies of development tend to conflict with what the Fund will want the drawing countries to do. A developing country, for instance, which is engaged in intensive use of import restrictions and is not contemplating on accepting the policies of the Fund can virtually not count on receiving assistance from the Fund - a matter that tends to indicate that such a country should hold some minimum of own reserves.

II.7B: TRANSACTIONS WITH DEVELOPING COUNTRIES

Indeed, available evidence indicates that if Fund
policies on drawings were liberalized, developing countries would rely heavily on supplemental reserves from the Fund. Before 1957 a large part of Fund transactions with members was concentrated in the developed countries which needed much financial assistance to tide them over in the post-war reconstruction period. At that time, only a few developing countries such as Turkey, India, and some Latin American countries drew on the Fund. Their total drawings, however, formed a small percentage of the total net drawings by all members, the magnitude of which was influenced largely by drawings of the United Kingdom.  

After 1957 the number of drawings by the developing countries began to grow. Their membership in the Fund has increased as well, and so also have their activities with the Fund, which have expanded very considerably. For example, between 1958 and 1959 only gross drawings by various groups of countries amounted to $3,400 million. Of this amount, about 60% was drawn by the OEEC and other countries including Australia, South Africa, Japan, etc., while 40% went to the developing countries (this compares with less than 20% before 1957). Of this 40%, the Latin American countries accounted for 22% and other Asian and African countries accounted for the remaining 18%. Indeed,  

32 Evidence for net drawings by the developing countries before 1957 is summarized in Brian Tew, *International Monetary Fund: Its Present Role and Future Prospects*, Essays in International Finance (March, 1961), no. 36, pp. 4 - 5.  

33 Of the 107 members of the Fund about 80 of them are developing countries.
the best evidence of increased use of Fund resources by these
countries is indicated by the number of standbys arranged and
the direct drawings made by these countries. Between 1957
and 1965, the Fund approved 137 new or renewed standby
arrangements: 17 were for the developed countries and 120 for
the developing countries. Similarly, there were 55 direct
drawings: 19 by the developed countries and 36 by the develop­
ing countries. Since the Fund began operations in 1947, it
has provided $2,860 million in various currencies to thirty­
six developing countries, about 47% of the total purchases
made to members by the end of 1965. At the end of January
of that year, thirty of these countries accounted for nearly
50% of the $2,6 billion of net drawings still outstanding at
the Fund.

The charge has often been made that, despite its
measures like increased Fund quotas and the Compensatory
Export Financing facility, the provision of resources by the
Fund to these countries is inadequate. Its very policies
have the effect of producing this result. For example, it
is maintained that the Fund is an organization whose resources
are intended to be drawn on precisely for short term
imbalances in trade. Unfortunately, when its constitution
was drawn, regard was had only for the problems of the
industrial countries so that the panaceas that may be
effective when applied to malfunctioning industrial countries
are often totally without relevance for the developing countries. It is, so to speak, a "rich man's club" that stresses the achievement of external balance by all member countries. On the basis of the goals of their development strategies, however, developing countries are not merely interested in the achievement of this objective for its own sake. Hence, it becomes evidently possible that the Fund's provision of credit to these countries will be practically limited, making it possible for them to use import controls, even as part of their monetary policies.

However, plausible as these arguments might be, our analysis tends to demonstrate that measures that tend to provide more conditional liquidity to the developing countries will have a simultaneous impact of inducing them to draw down their own reserves to finance development expenditures. Indeed, if such measures should produce any change in their present development expenditure behaviour; there would have to be a large amount of reserves made available to help to ease a little the tight exchange controls under which most of them operate. The reason is that what the developing countries need is not additional reserves per se, but additional capital aid. These arguments provide the basis of our examination of the implications of some proposals for international monetary reform for the developing countries, which will be our purpose in Chapter III.
II.8: SOME MODIFICATIONS OF THE ANALYSIS

Before we proceed any further, some modifications of the analysis call for examination. We must note that, although the portfolio theory tends to demonstrate that there has been increase in capital formation at the expense of accumulation of reserves, we cannot a priori conclude that this process has definitely led to increase in the rate of growth of the developing countries. Increase in capital formation would affect the level of income but not necessarily the growth rate unless some basic structural changes in the economy occur. In the short run, this is particularly what is likely to happen. But in the long run, it is possible to assume that, other things being equal, this rate would be affected positively since domestic savings and export capabilities might have risen to the point where foreign capital might become relatively unnecessary for the growth rate to be sustained. This condition will be met as the increase in incomes creates a permanent and growing margin of savings that will itself generate enough domestic capital to support the investment-growth process.

The extent to which this process can go on depends on the absorptive capacity of the particular economy. Generally, increase in income depends on the productivity of the added capital and this productivity can be gauged by increases in wages, profits including interest, depreciation and cost-price-raising-taxes, which result from a rise in investments. The
better the ratio between the amount of additional capital invested and these proceeds (the gross added value), the greater the rise in incomes brought about by the imported capital.

The productivity of the added capital also varies with the absorptive capacity of the economy and the factors which influence that capacity, for example, the skills of the population, also determine to a large extent the capital-return ratio. If investment projects are so chosen that they remove the bottlenecks that stand in the way of rapid increases in productivity of existing economic activities, rather than capital consuming and extravagant new projects with long gestation periods, the necessary growth rate will be achieved to minimize the foreign exchange constraint. This whole complex process in which additional capital is accumulated and in which an initial increase in incomes can, by savings and investment, lead to a greater increase in incomes, is the pivot around which the process of economic growth revolves. Other things equal, it is the percentage of the increase in incomes that is saved which indicates the rate of growth of the economy. Such a process, however, varies from country to country, depending on the structure of the economy and the rate of population growth.

As a matter of empirical interest, Baldwin has shown that in aggregative terms, the economic performance of the developing countries in recent years has been very encouraging.
For example, between 1957/58 and 1963/64, their gross national product grew at a 4.7% annual rate. However, since the annual rate of population growth was 2.4% in the same period, per capita income rose by only 2.3% in the developing countries as compared with the 3.1% in the developed countries in the same period.  

CHAPTER III

INTERNATIONAL MONETARY REFORM AND DEVELOPING COUNTRIES

In the preceding chapter we attempted to show that the relatively high rate of return on capital has led some developing countries to draw down on their internationally liquid assets to finance development expenditures. We explained that the strength of the "demonstration effect", in addition to other factors, has made the social opportunity cost of holding reserves very high. This in turn has made it difficult for the developing countries to invest real resources in the accumulation of reserves. In the light of these conclusions, it can be argued that any reform of the international monetary system which provides them with additional reserves, but does not increase the inflow of capital, will further induce them to pursue their present policy of utilizing reserves for development purposes. With this proposition in mind, we shall examine some of the plans for a reform of the international monetary machinery, which have direct relevance to the developing countries.

From the literature on the plans for international
monetary reform, we can classify the plans into two categories according to purpose: a) plans which seek a simultaneous solution of the problem of the inadequacy of liquidity in the world context and the problem of increasing development finance to the developing countries, and b) those which intend to create additional reserves in the system to the "benefit" of both the developed and the developing countries.¹

III.1: "KILLING TWO BIRDS WITH ONE STONE"

The proposals in this category have as their basic aim the simultaneous solution of the general liquidity problem and the development 'problem' of the developing countries. Essentially, they emphasize that there should be a "link" between monetary reform and provision of the development finance to the developing countries. It is stressed that monetary reform should go hand in hand with, and should facilitate, the adoption of trade and aid policies that would contribute to the removal of the structural problems that inhibit growth in these countries. In this way it can be argued that such proposals will be considered "good" by the developing countries since the effect will be to increase the

flow of capital, which is at present in great demand by them.

i: THE STAMP PLAN

One such proposal for linking the creation of additional liquidity and the provision of additional capital aid to the developing countries was suggested by Maxwell Stamp in 1962.\(^2\) The gist of this Plan consisted in the issuing of international certificates - international money - created by the International Monetary Fund or some other agency concerned with aid or the need for additional reserves. These certificates were to be distributed to the developing countries which would then use them to purchase goods for development purposes from the advanced countries that expressed their willingness to accept them. As it stood, the scheme was plausible in terms of the objective it was designed to achieve. For example, it was suggested that the implementation of the scheme would have the effect of counterbalancing the tendency of all developed countries to seek an export surplus. Moreover, "the injection of the new purchasing power into the pockets of the under-developed countries could mean that fewer advanced countries would run deficits, and, therefore, the probable calls on the Fund to cover ordinary balance of payments crises would be lessened".\(^3\)

\(^2\)ibid, pp. 60 - 68.
\(^3\)ibid, p. 64
Two doubts were, however, raised against the scheme. The first related to the central issue of whether any given developing country could control its own capital contribution if the newly created asset is accepted. Secondly, some doubts were cast on the desirability of the scheme since fear was expressed that the new asset would not be accepted by all countries. Scitovsky's Plan was an attempt to overcome the problem of acceptability by shifting the initiative of reserve creation to deficit countries in need of reserves, and which, therefore, would be ready to surrender real resources for aid. In a sense, this implied that deficit advanced countries would be providing the largest part of the development aid to the developing countries.

ii: THE SCITOVSKY PLAN

This Plan proposed that the deficit countries would make a budgetary appropriation for grants-in-aid to the developing countries while handing over these grants to a reformed I.M.F. (preferably, Triffin's X.I.M.F.\(^5\)) in the form of their national currencies or government debts. The I.M.F. would then issue an international currency backed by the deficit country's currency or debt. This would then be made


available to the developing countries through an intermediary of an International Development Association for the purpose of financing development imports from the original deficit country. In other words, the developing countries would be receiving tied grants since the scheme restricts them to spend the money only in the deficit countries against whose currencies or debts it was issued. Meanwhile, the deficit countries would be receiving additional external reserves in exchange for the goods exported to the developing countries. This arrangement is thus designed to cater to the development needs of the developing countries, while providing increases in world reserves.

In a very recent article Scitovsky has revised his scheme and proposed that to avoid undesirable consequences for any group of countries— the newly created reserves should be equal to the value of the products to be transferred to the developing countries. Finally, he showed that, under his scheme, the level of world unemployment will decrease, international liquidity will increase and the developing countries will be receiving unrequited financial assistance. This arrangement, despite its salient aspects, has met with vehement criticism especially from Professor Lee, who has argued that in cases where the multiplier effect of the whole

---

transfer of resources is not equal to unity (as Scitovsky's model assumes), "it is likely that the deficit country will continuously be in deficit, while the creation of new reserves will always be short of the deficit in the balance of payments". 7

It is clear, however, that, like the Stamp Plan, the Scitovsky Plan was intended to augment the financial resources needed to finance economic development in the developing countries, via an international monetary reform. This basic purpose was the objective of an alternative proposal made by the Experts of the United Nations Committee for Trade and Development (UNCTAD).

iii: UNCTAD EXPERTS' PROPOSAL

The Experts emphasized the importance of the "link" from a different viewpoint. They argued that the developing countries should have a share in any unconditional liquidity that was to be created as a result of any international monetary reform. The creation of such additional liquidity was, however, to be linked to the provision of additional development resources to these countries. 8 In a sense, the additional liquidity was to be created through the I.M.F.'s


issue of "Fund Units". That is, the I.M.F. was to lend the International Bank for Reconstruction and Development or its affiliates, part or all of the usable counterpart currencies deposited by member countries against the issue of Fund units in exchange for I.B.R.D. bonds. Each developed country was then to compete for the additional orders made available by the World Bank investment in order to retain the full addition to its reserves represented by the initial distribution of Fund Units. It was suggested that if the initial distribution of the additional orders diverged from that of the newly created Fund Units, then a new redistribution of the Fund units had to take place. The developed countries which might have gained from this redistribution would then have done so by giving up resources to fulfil the development orders coming from the developing countries. The greater the extent to which one developed country made real resources available through the procedure, the greater will be the extent to which it will also be able to share in the ultimate distribution of the newly created reserves. In this way, the process intended to make available additional reserves to the developed countries while at the same time providing the needed capital aid to the
developing countries. It is evident from the foregoing that the implementation of any of the above proposals will have one obvious advantage as our analysis indicated: namely, since the developing countries are not interested in holding reserves per se, an increase in capital aid to them will, other things being equal, have the effect of reducing the risk of their development "portfolios", thus making it relatively possible for them to hold larger reserve levels as well.

Unfortunately, the leading industrial countries object to any prospective linking of the problems of international liquidity and economic development. The Group of Ten, for example, stated thus: "the provision of capital to the developing countries is a problem quite distinct from the creation of reserves and should be achieved by other techniques".  

---

9 It is to be noted that the new asset was supposed to be created according to the needs (somehow estimated) of the world economy and not according to the needs of the developing countries. A proportion of these newly created assets- or the currencies furnished as backing for them, was to be put at the disposal of the I.B.R.D. and the size and timing of this provision would be designed to meet the needs of development policy - a matter the success of which depended on the effective planning techniques of the I.B.R.D.

It is maintained that the system involved a long term movement of real resources from the more to the less developed nations. Thus, if any of the proposals which try to package the problem of liquidity and development were put into operation, the developing countries will be gaining without incurring any real costs - that is, they would be paying nothing for something.\textsuperscript{11}

\textbf{III.2A: ALTERNATIVE PLANS}

Besides the proposals which aimed at meeting the capital imports needs of the developing countries, the Bernstein Plan and the Credit Facilities Approach intended to meet the reserve needs of these countries. Like the recent S.D.R. Proposal, which will be discussed below, these Plans sought to provide additional liquidity to the developing countries. As we stressed before, the opportunity cost of holding reserves is high for these countries. Hence, it is obvious that the implementation of any of these alternative Plans will not tend to alter the development expenditure behaviour of these countries,

\textsuperscript{11}Benjamin Cohen has, on the contrary, noted that the developing countries really pay something for nothing because of the strikingly inequitable distribution of adjustment costs, part of which is often transferred to them from the developing countries. Hence, he has argued that there is a strong case for linking the problem of liquidity and economic development in any international monetary reform. In particular, he has proposed that a good deal of assistance could be provided to the developing nations by distributing to them the largest part of any newly created reserves (irrespective of how) as a consequence of a world monetary reform. See, B.J. Cohen, Adjustment Costs and the Distribution of Reserves, Princeton Studies in International Finance, No. 18 (Princeton University, 1966), especially pp.31 - 35.
since they will tend to spend any additional reserves given them for development purposes. In any case, let us see how these Plans intended to provide additional liquidity to these countries. We shall examine in order, The Credit Facilities Approach, the Bernstein Plan, and finally, the S.D.R. Proposal.

i: THE CREDIT FACILITIES APPROACH

This approach, intending to favour countries with low reserves (the developing countries included), aimed at carrying out one function of reserves - to enable a country to finance deficits in its balance of payments without reducing the foreign exchange value of its currency - while simultaneously providing the stimulus for countries to take measures to reduce deficits in due course. Under this scheme, drawing rights at the Fund would be made "unconditional". A borrowing country will have the discretion to choose whether to exercise its right or not as the circumstances permit; the lending institution, the I.M.F. will have no discretion in this matter. The Facility will be usable entirely upon the discretion of the country that owns the new reserves. The drawings (loans) will be repayable only after five or more years so that an owner may spend them without worrying about his ability to replenish them during the next few years after a drawing is made.

In addition, the scheme proposed that the unconditional drawing rights could be transferred into overdraft facilities so that instead of a country drawing from a pool of foreign currencies held by the I.M.F., the country would now have the right to overdraw a deposit account carried with the Fund and denominated in Fund Reserve Units. The distribution of the newly created reserves would then be based in such a way that, while new funds would be created by way of loans to countries in deficit, countries in surplus positions would be forced to earn new reserves by supplying real resources to the deficit countries. The obligation to repay the loan in due course, however, ensured that the transfers of resources would be temporary.

Although this approach seems to be the least discriminatory as compared to others like the Bernstein Plan, since most countries would have the discretion to use their rights at will, it has been termed "adventitious" and "haphazard".\(^{13}\) It is maintained that countries in low reserves and those suffering from payments deficits would be the ones which would make large drawings. Hence, reserve increases might be large in some years and probably zero in others when some countries have surplus reserve levels. Moreover, although the scheme might bestow benefits on countries in deficits, (especially the developing ones), it is considered less favourable than a

\(^{13}\)ibid, p.152
deliberate creation of reserves because it still implies a movement of real resources from one part of the world to another, a criticism to which the other proposals discussed above were subject.

ii: THE BERNSTEIN PLAN

This plan may be considered as ensuring additional reserves to the developing countries while at the same time making it possible for them indirectly to receive capital aid from the advanced countries. The aim of this Plan was to effect a system whereby a large number of industrial countries which hold about 86 per cent of world monetary gold outside the communist bloc will provide increases in international reserves in some form. The currencies of eleven major countries - United Kingdom, United States, Canada, Japan, France, Sweden, Switzerland, Germany, Italy, the Netherlands, and Belgium - were to be pooled at the International Monetary Fund. Against this pool of currencies, the Fund will issue an equal amount of composite reserve units (CRU). Members would acquire CRU by depositing in the Fund agreed amounts of their own currencies receiving in exchange deposit credits denominated

in CRU, equivalent to the U.S. dollar in value. The CRU would then be used in combination with gold to settle international payments imbalances, with participating countries agreeing to hold CRU up to a stated proportion of their holdings in gold. In this way, the new system was intended to develop into a new monetary standard, the Composite Gold Standard, in which gold and reserve units will serve as international monies.

Since the benefits of the Composite gold standard were to accrue largely to the developed countries, Bernstein suggested the establishment of a complementary program which would cater to the needs of the developing countries. He argued that as these latter countries cannot hold large reserves of their own because they cannot afford to invest real resources in this form, it was essential they had an assured access to the International Monetary Fund as a main source of conditional liquidity. To him:

"No change in the international monetary system that would provide for a regular growth of reserves even on a generous scale could induce the underdeveloped countries to accumulate reserves. If their reserve needs are to be met, it will have to be from a common reserve to which they have access when they face balance of payments difficulties".15

Hence, he argued that it might be desirable to make the first credit tranche available to them on the same unconditional basis as the gold tranche. In addition, the policy on

15 E.M. Bernstein, "Underdeveloped Countries and Monetary Reform", op. cit., p.271.
Compensatory Financing of export fluctuations initiated in 1963 was to be liberalized by making the maximum amount of such credits 50% of quota and by placing the compensatory credits entirely outside the present quota-tranche system.

If these changes were effected, the scheme would have brought the developing countries benefits in both direct and indirect ways: directly, because they would then have an assured access to adequate financial resources from the Fund in case of need - an access which is presently conditional because of the policies governing drawings in the credit tranches. They would have also benefited indirectly because, other things being equal, other developed countries might have received additional reserves to be sufficiently liquid to afford more capital and financial aid to them.

Although such were the expected benefits of the Bernstein Plan in the case of the developing countries, the whole scheme has been considered by many as discriminatory and politically inexpedient, given the way in which the new reserves were to be distributed to all countries.\textsuperscript{16} The recent international monetary reform - the Special Drawing Rights (SDR) Proposal - seeks to overcome this problem by providing additional reserves to all countries on "non-

\textsuperscript{16} R. Triffin, for example, discusses some of the flaws in the Plan in his article, "The Bizarre Proposals of Dr. Bernstein for International Monetary Reform", \textit{op. cit.}, pp. 328 - 343.
discriminatory" basis. The examination of this proposal is the purpose of the next section.

iii: THE "SPECIAL DRAWING RIGHT" PROPOSAL

The recent reform is a kind of contingency plan for supplementing the supply of international reserves by means of member countries' access to Special Drawing Rights at the International Monetary Fund. New reserves of unconditional character were to be created under this facility, in the sense that a member "will be able to use the SDR ... whenever it has a balance of payments need to do so". 17

On the basis of international conventions, participants would be obliged to accept the new reserve asset, either to hold it or to use it to settle international payments. The resources of the new scheme were therefore to consist in the obligation on the part of the participants to accept drawing rights in exchange for an equal amount of convertible currency. When a member draws on the New General Account at the Fund, it would normally ask the Fund against which other participant it should exercise the drawing right. When this is granted, the drawing country will acquire currencies in the form of convertible foreign exchange to be delivered by countries (country) drawn upon, either directly or through the intermediary of the Fund.

---

In the framework of the above stipulations, a member is also obliged to reconstitute. That is to say, over a five year period a member's average use of the new facility is not to exceed 70% of its average cumulative allocation. In other words, in the five year period a country's average holdings of the new reserves should at least be 30% of its average allocation over the same period. If the holdings fall below this minimum level, the particular country will then be obliged to reconstitute. However, this procedure differs from the repurchase rules of the present Fund in that the reconstitution idea in the new facility derives from the "guidance of other countries drawings". For instance, if other countries do not want to draw, reconstitution may not be necessary even though a country's average holdings might remain below the required minimum level. Moreover, it is stipulated that the long term need for reserve increases will be based on a quinquennial review of the existing quantity of reserves within a period. Having touched on the main features of the new facility, we can now turn to the most important issue of the distribution of the new reserves.

iiia: Distribution of the New Reserves

On the question of distribution, it is maintained that allocation of new reserves will be made to all member countries independently of their payments positions on the basis
of the existing quotas in the Fund. This means that the
distribution of the new reserves will have very important
repercussions for the developing nations. The United States
and the United Kingdom respectively have quotas of 26.6% and 12.6% of total member quotas in the Fund, while most
developing countries have each quotas either below or a little
above 1%. As a whole, the developing countries account for
27% of total member quotas (i.e. almost equal to that of U.S.)
while their share in total of world reserves is less than 17%.
The former figure, however, is influenced more by some groups
of countries such as the oil-producing countries which have
already relatively large reserves and other Latin American
countries with inadequate reserves. Thus, in terms of
individual countries' share in the distribution, the initial
distribution will tend to be more advantageous to those
countries which have larger quotas than others with small
quotas in the Fund. In this way, it is easy to see that a
large part of the new reserves would go to the developed
countries. Are there, however, any long run or short run
benefits of the reform for the developing countries?

iiiib: Implications for the Developing Countries

All countries participating in the distribution of the
new reserves will experience varying consequences from the
creation of the new reserves. The effects of increased reserves
on the policies of all countries, as a result of easier liquidity conditions, will induce some countries to pursue policies that will increase their import demand or export supply. Developing countries, however, face inelastic demand for their exports while they have an elastic one for the imports of other countries. Thus, it is possible to argue that the bulk of the new reserves will sooner or later gravitate to countries such as the industrial countries and some primary producers which have a high propensity to hold reserves. On the other hand, one possible effect may be to argue that in the long run, some benefits will accrue to the developing countries as a result of their acquisition of additional reserves or the possibility of larger access to capital aid from other developed countries which might be willing to do so. The outcome of the latter process is, however, unpredictable especially when some industrial countries, under the stress of severe balance of payments difficulties might scrutinize their budgetary expenditures and have financial aid subjected to severe economies.\textsuperscript{18} In this case, the developing nations will receive limited benefits from the scheme. Of course, there will be some short run benefits from additions to their reserve levels, but these will have to be large enough otherwise a complete over-haul of import restrictions and exchange controls will not be

possible.

Indeed, our analysis of demand for international liquidity by the developing countries indicated that they have a low precautionary demand for reserves. We explained that the opportunity cost of holding reserves is high for them since the reserves could as well be used to finance development expenditures. On the presumption that such factors influencing our conclusions have not changed, it is likely that once the additional reserves are given them, the developing countries will spend them on development purposes. The essential fact is that, what the developing countries need is not additional reserves per se; they need additional capital aid for development purposes. And in the event that the latter is not forthcoming, it is conceivable that once the initial high levels are reestablished, they will tend to spend the additional reserves for this purpose. 20

III.3: Conclusion

It will, therefore, seem from our brief examination of the above proposals which have direct relevance to the developing

20 Of course, this behaviour will vary between countries. For whether a particular country will hold or spend an extra unit of reserves will depend on how it balances the marginal cost and the marginal utility involved. This balancing involves some value judgements on the part of the monetary authorities, which differ from country to country, depending on the institutional framework of the economy. Thus, groups of countries will be behaving differently in response to the additional reserves gained. And in this way, it may not be entirely true that all the developing countries will spend the additional reserves on development purposes.
countries that the developing countries will generally consider a plan "good" if it has the effect of providing them with the necessary development aid. Indeed, our analysis tends to heighten the need for increasing capital aid to the developing countries, an issue which has received quite a lot of stress in recent years.\textsuperscript{21} Hence, other things being equal, the developing countries would have preferred the "link" proposals to others which only seek to give them additional reserves. This is not to say that the other proposals besides the "link" are not good. For example, the new reform, if implemented, will offer the developing countries temporary relief from severe strains in their payments imbalances. However, the extent to which this can be sustained depends on how well fluctuations in export earnings are stabilized and how regularly capital flows into the developing countries. If none of this occurs, these countries will pursue their present development expenditure behaviour of utilizing reserves to finance development expenditures.

To digress for a moment, we may note the change in the composition of demand for reserves as a result of a reform of the system that offers them additional reserves. Assuming as before that the developing countries do not hold much gold because they cannot afford to invest in it, we can argue that they will tend to hold more of the newly created asset than other currencies such as the dollar. The reason for this is that the dollar will still be more subject to exchange risk and high convertibility risk than it will be in the case of the new reserve asset. 22

---

CHAPTER IV

SUMMARY AND CONCLUSIONS

IV.1: SUMMARY

The principal issue which we raised at the beginning of this essay relates to the observation that in recent years the developing nations have been faced with a liquidity crisis of their own, quite apart from the problem of inadequacy of international liquidity in the world context. That is, they have been experiencing a decline in the ratio of their reserves to imports - a common measure of the "adequacy" of international reserves. Our analysis has been an attempt to provide a coherent theoretical explanation for this liquidity crisis.

Our method of analysis was based on the application of the portfolio approach to demand for money, but in an environment where economic development is a goal of national policy. Unlike the "flow approach" of other recent studies, our analysis postulated that international liquidity - a country's holdings of gold and convertible foreign exchange plus its I.M.F. position - could be considered as a stock of international money, a liquid asset. Placing our analysis in a cost-benefit framework, we argued that although the social rate of return on
capital was high relative to that on reserves, the country could not hold all its wealth in capital since it would then run the risk of being unable to pay for the needed imports to increase capital formation. In an uncertain world where the country's export earnings are unpredictable and capital flows are not completely sensitive to the domestic interest rate, it was necessary for the country to hold some reserves to offset short-term variations in its balance of payments. In addition, limited availability of conditional liquidity at the Fund reinforced the necessity for the country to hold some own reserves as an aversion to the risk of inadequate reserves.

On the proposition that this country could choose the level of reserves it will hold, we concluded that the pressing need to increase economic development (capital formation) will force it to maintain a low level of reserves and to use very tight discretionary trade and exchange controls, the risk of which policy it was prepared to bear. This led to our further conclusion that this country has chosen a risky portfolio but that this was a rational choice because of the simultaneous expectation that increase in capital formation will lead to expected increases in per capita consumption. Hence, our final observation that the country has a low precautionary demand for international reserves.

Indeed, the whole process of adjustment and substitution postulated by the portfolio theory involves so many dimensions
that simple interpretations are rather dangerous. However, it does seem plausible that, with the high opportunity cost of holding reserves, the rise in the social rate of return on capital during the period under consideration at least caused a shift of funds from reserve holdings to capital formation. This shift must have been large enough to reduce perceptibly the reserve levels of these countries.

Next we discussed the possible implications of an international monetary reform for the developing countries in terms of the conclusions arrived at in the whole analysis. We emphasized that what these countries need is not additional reserves per se, but additional capital aid for development purposes. Thus, any reform that sought to provide them with additional reserves, and hence reestablish their initial high levels, will give them a further incentive to use their reserves to finance development expenditures. The reason is that the opportunity cost of holding reserves has not fallen (at least, there is no available evidence to believe that it has). This conclusion therefore tends to support the proposition of economists such as Bernstein and Wallich who maintain that the developing countries have a weak tendency to hold reserves but a strong one to spend the reserves for development purposes.

The argument of the above analysis was based on the
alternative hypothesis that: as a matter of circumstantial policy, it might be a rational choice on the part of a developing country to utilize some of its accumulated stock of reserves to finance development expenditures. This proposition was in partial support of other hypotheses such as the "stage of growing pains" hypothesis which sought to provide an explanation of the decline in reserve levels from the development process itself, and the "primitive" rational choice hypothesis, which stressed that the developing countries have a weak tendency to hold reserves.

IV.2: IMPLICATIONS FOR POLICY

An important policy implication revealed in this analysis is that whether a developing country will accumulate or draw down its reserves is a policy decision that it has to place in the context of other policy decision variables; e.g., the competing demand to accelerate economic development. If the opportunity cost of holding reserves is high, the country might, other things being equal, use them to finance development expenditures. On the other hand, if the cost is low, the country might hold large reserves or invest them in foreign earning assets that will yield it higher income. It is also clear that, other things equal, the higher the level of a country's reserves, and the better its prospects of increasing them in the future, the more it will be inclined to adopt
policies that will worsen its balance of payments, the impact of which might be so adverse as to interrupt the development process in the economy.

Our analysis also tends to revive and heighten the old argument of the need for an international policy to effect a system whereby more foreign capital will flow into the developing countries. If we grant that there is a close positive co-relationship between freedom from exchange controls and inflow of capital, then there is every reason to argue that the developing countries will need a substantial amount of additional capital aid which will help bring about liberalization of restrictions on trade and payments. The mechanism by which this result is achieved may be described in the following way. The increased flow of capital into these countries will gradually pull down the interest rate making the opportunity cost of holding reserves low and thus encouraging these countries to hold relatively large reserves and a consequent dismantling of import controls. There is thus an obvious need for the advanced countries to provide the

---


2It must be noted that the rate of interest is reflected in the behaviour of monetary authorities in that intensive use of reserves for development purposes was highly correlated with high interest rates. Hence, it is also likely that less intensive use of reserves would correlate with low interest rates.
developing nations with long and short term loans on low terms. Alternatively, there is need for the I.M.F. to liberalize its conditions underlying drawings in the credit tranches. For example, as Bernstein suggested, it could make drawings under the first credit tranche the same as those under the gold tranche for these countries. Repurchase rules may be relaxed such that the present period of three to five years is extended to seven years or a different system altogether could be created so that the World Bank or the International Development Association would increase their provision of financial assistance to the developing countries, always making sure that the cost of borrowing is relatively low. Of course, this way of looking at things tends to indicate the the developing countries should receive preferential treatment as compared to the developed countries. Yet, it is clear that unless sufficient funds are provided to these countries enough to meet their development needs, not on the basis of any market criteria but on the basis of a social criteria that takes into account the facts of inequitable international income distribution and adjustment costs, it is likely that the present development expenditure behaviour of the developing countries will continue for the next two decades.

IV.3: CONCLUSION

The purpose of this study has been to provide an apparatus for thinking about the way in which the ratio of reserves to imports of most developing countries has fallen in recent years. By the application of the theory of portfolio selection, we have stressed that the draw down in reserves might have involved a rational economic decision on the part of the monetary authorities of these countries. The apparatus used for this explanation had to be simple if it was to be very useful. We therefore bought simplicity at the cost of some heroic assumptions. In this way, we have described in a purely verbal analysis what we think is the proper theoretical argument for explaining the present development expenditure behaviour of most developing countries.

The question is: was the attempted application of the portfolio theory successful? The answer is not unambiguous. If one believes that the demand function for international liquidity that we have postulated is at all reasonable, then, it can be argued that we have gained some understanding of the phenomena underlying the decline in reserve holdings of some developing countries. It must be noted that the model used in this analysis is quite flexible in this regard. For, although the major limitation of the exercise lies in our failure to provide a formal testing of the hypothesis, it can be argued that it is capable of predicting the behaviour of some developing
countries in response to additions to their reserve holdings, i.e., given a higher interest rate on real capital relative to that on reserves.

Moreover, it is seen that this analytic framework raises interesting empirical questions about important issues. For example, it shows to be totally erroneous the view that developing countries might have a high demand for reserves. More interesting than this, however, is the fact that the model's ambiguity on the time path of the decline or increase in reserves poses an interesting empirical question that would certainly bear investigation since it raises a new problem in the context of the important issue of the leads and the lags with which an expanding economy responds to policy changes.

Thus, the simple model provided in this essay seems to pass the test for our analytical framework, inasmuch as it does seem to tell us something that was not very obvious before, and inasmuch as it does raise interesting empirical questions. Of course, in a study such as the one we have done here, we cannot pretend that we have dealt adequately with this difficult subject, however. The application of the portfolio approach to the international payments sphere, to my knowledge, is new. Our analysis is only an initial attempt at this application and it is hoped that it will lead to further research study and analyses on this whole issue of liquidity and development.
problems of developing countries. 4

The ideas we have analyzed have only theoretical interest, but they attempt at the same time to give empirical content to a logical exercise which commands assent. They are properly to be criticized not on grounds of logic but on grounds of their empirical validity and relevance. Implicitly, or explicitly, they are statements about the way real world institutions of some developing countries work; they therefore fall or stand on the question of whether or not the statements have been correct.

4A construction of an econometric model to test the validity of this approach is the purpose of a further research study which I intend to do.
BIBLIOGRAPHY

BOOKS


Fanon, F. The Wretched of the Earth, New York, 1966, pp.78 - 82.


---

**ARTICLES, PAPERS AND GOVERNMENT PUBLICATIONS**


International Monetary Fund. "International Liquidity and Reserves", IMF Staff Papers, August 1958.


Machlup, F. Real Adjustment, Compensatory Corrections and Foreign Financing of Imbalances in International Payments, Reprints in International Finance, No. 2, Princeton University, September 1965.


McLeod, A.N. Contentious Thoughts on International Liquidity, Central Bank of Tobago, Trinidad, February 1967.


APPENDIX
For purposes of understanding the use of the phrase "balance of payments" in this essay, it is necessary to point out that following Mundell, we define it as the change in international reserves under the present exchange rate system. Thus, the balance of payments - the change in reserves over time - is a flow per unit of time. But items recorded in the balance of payments represent the accumulated flow over a specified period of time. The balance of payments of a country over, say, a year is the integral of the flow of items per unit of time during the year and thus is a stock.

Suppose reserves, $R$, fluctuate between time $t = t_0$ and time $t = t_1$, according to the equation, $R = f(t)$. Then the balance of payments equation $B(t) = \frac{dR}{dt} = R'(t)$, reflects the slope of the equation, $R(t)$; conversely, $R(t)$ reflects the integral of $B(t)$ over the past. If the time from $t_0$ to $t_1$ is one year, for example, then $\bar{B}$, the balance of payments over the year, is

$$\bar{B} = \int_{t_0}^{t_1} B(t) \, dt$$

---

where $\bar{B} = R \equiv R_{t_1} - R_{t_0}$. The stock of reserves at given periods of time are therefore related to the balance of payments by equations such as:

$$R_{t_1} = R_{t_0} + \int_{t_0}^{t_1} B(t) \, dt.$$