Indonesian Experience with Financial Sector Reform

Donald P. Hanna
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(Continued on the inside back cover.)
Indonesian Experience with Financial Sector Reform

Donald P. Hanna

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ABSTRACT

Indonesian Experience with Financial Sector Reform

Since the early 1980s Indonesia has been engaged in serious efforts to reform the financial system, and thereby stimulate sounder economic growth. This paper discusses the nature of the specific reforms carried out in Indonesia, the environment in which they were undertaken and, most importantly, their effects on the real economy. It finds that a fairly standard, phased series of reforms led to large, sustained increases in financial savings, increases in real savings, new financial products and more cost effective banks. Credit allocation suffered, however, as state banks and new entrants made loans that became non-performing.

The unusual feature of the reforms, opening the capital account before the financial sector, did not have adverse effects. Rather, the open capital account aided macroeconomic management by providing quick feedback when domestic policies moved out of line and by limiting the inflationary consequences of excessive demand stimulus. Indonesia's experience highlights the need for macroeconomic management that recognizes the limitations imposed by fiscal and external constraints and responds quickly to those constraints.
I. INTRODUCTION

Maintaining growth and development of the real economy requires a complementary growth of the financial system capable of providing financial resources as cheaply and efficiently as possible. For some time, Indonesia has been engaged in serious efforts to stimulate the domestic financial system, and thereby economic growth, through major policy packages in 1983, 1988, 1990 and 1991. The paper begins with a discussion of the nature of the specific reforms carried out in Indonesia, the environment in which they were undertaken and, most importantly, their effects on the real economy.

Theories of the link between financial performance and economic growth, particularly as advanced by McKinnon (1973), and Shaw (1973) have been the basis for a series of financial reforms around the world, most prominently in the Southern Cone of Latin America, but also in Turkey, parts of Africa and East Asia, including Indonesia. These experiences have raised concerns about the real sector effects of financial reforms, particularly with regard to the freeing of interest rates and their effects on savings and investment. Various authors analyzing this experience have focused on the need to avoid severe macro-imbalances as a precondition for successful financial reform because of the reduced likelihood of engendering high ex post real interest rates and the risk of currency substitution exacerbating any fiscal imbalance (Hanson, 1992). Others have cited the examples of the Southern Cone as warnings of the dangers of opening the capital account before the current account (McKinnon, 1973, 1982; Edwards, 1984; Khan and Zahler, 1983). Others have argued that the timing should be simultaneous (Little, et al. 1970; Krueger, 1981 and Michaely, 1986, cited in Hanson 1992). After discussing the nature of the financial reforms implemented in Indonesia over the last decade, this paper addresses their effects on the real economy and on the financial system itself. Questions analyzed include:

- The effect on the financial system itself, including asset growth, maturity structure, spreads, profitability and interest rates and risk;
- The effects on the level of investment and savings;
- The impact of the macroeconomic environment on financial reform;

\footnote{Van Wijnbergen (1983) and Taylor (1983) present an argument based on the efficiency of the curb market and the effects of interest rates on the supply of goods (through the cost of working capital) whereby freeing interest rates may not lead to growth. These arguments turn on empirical magnitudes that need to be evaluated for each case. Other prominent debates concern the timing and sequencing of financial reforms, the content of reforms and the nature of financial-market supervision. See, for example, Edwards (1984), Caprio and Atiyas (1992).}
II. THE 1983 FINANCIAL REFORMS: BACKGROUND AND CONTENT

A. Macroeconomic Background

Indonesia began the 1980s as a high growth, low-income country heavily dependent on oil (Table 1). Growth had averaged 7.6 per cent through the 1970s, while inflation, low in the early part of the decade, had picked up to levels over 40 per cent in 1974 before falling to the 10-20 per cent range for the rest of the decade. Revenues from oil, which accounted for up to 80 per cent of exports, kept the current account balance positive or at a mild deficit. Oil revenues from the state-owned oil monopoly, Pertamina, also accounted for as much as 70 per cent of budgetary revenues, keeping the domestic tax effort low. A period of hyperinflation in the mid-1960s had led to the imposition of a policy that eschewed domestic bond financing of the government budget. The same concern over inflation led to the adoption of an open capital account in 1970, whereby all movements of capital by the non-financial private sector into and out of the country were completely unrestricted. Only banks and public enterprises faced restrictions on the amount of foreign lending they could undertake. A debt crisis in 1975 brought on by irresponsible borrowing by Pertamina led to tight controls over public enterprise borrowing and a strong desire by the Indonesian government to limit its external debt burden. The crisis helped Indonesia avoid the external debt build-ups that plagued many other middle- and low-income oil producers in the late 1970s and early 1980s.

Government revenues were used throughout the 1970s to promote key domestic industries, usually state-owned, behind a barrier of tariffs and quantitative restrictions. Oil inflows created a Dutch disease problem during the 1970s that Indonesia attempted to counter in 1978 by devaluing its fixed exchange rate. Although non-oil exports initially responded positively (Woo and Nasution, 1989), inflation in the intervening period led to continued appreciation of the rupiah.

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2 For an excellent overview of the Indonesian economy, with a focus on international debt, see Woo and Nasution (1989).
Table 1
Key Macroeconomic Indicators a/

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<td>14.6</td>
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<td>Current account/GNP</td>
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<td>Non-interest current account/GNP</td>
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<td>Overall public sector balance/GDP</td>
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<td>-3.0 e/</td>
<td>-2.1 g/</td>
<td>0.2 g/</td>
<td>-0.4 g/</td>
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<td>MLT debt service/exports</td>
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<td>34.8</td>
<td>35.8</td>
<td>29.7</td>
<td>31.6</td>
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<td>MLT debt/exports</td>
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<td>234.3</td>
<td>212.2</td>
<td>187.6</td>
<td>196.5</td>
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<td>MLT debt/GNP</td>
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<td>65.5</td>
<td>60.1</td>
<td>57.8</td>
<td>59.0</td>
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<td>Non-oil manufacturing/GDP</td>
<td>9.9</td>
<td>12.8</td>
<td>13.9</td>
<td>14.9</td>
<td>15.4</td>
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<td>Non-oil exports/non-oil imports</td>
<td>37.4</td>
<td>80.8</td>
<td>88.8</td>
<td>71.2</td>
<td>77.5</td>
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<td>Public savings/GDP</td>
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<td>4.8</td>
<td>6.4</td>
<td>10.2</td>
<td>9.4</td>
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<td>National savings/GDP</td>
<td>21.0</td>
<td>19.1</td>
<td>20.9</td>
<td>20.9</td>
<td>20.3</td>
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<td>Fixed investment/GDP</td>
<td>25.1</td>
<td>19.2</td>
<td>20.6</td>
<td>22.5</td>
<td>22.7</td>
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<td>Private fixed investment/total fixed investment</td>
<td>52.1</td>
<td>59.2</td>
<td>58.7</td>
<td>59.0</td>
<td>57.7</td>
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<td>Consumption/GDP</td>
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<td>75.6</td>
<td>74.2</td>
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<td>Prices</td>
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<td>Oil prices (US$/bbl)</td>
<td>28.9</td>
<td>17.6</td>
<td>17.9</td>
<td>22.6</td>
<td>18.7</td>
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<td>Non-oil terms of trade (1983/84=100) b/</td>
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<td>96.3</td>
<td>95.3</td>
<td>95.3</td>
<td>91.5</td>
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<tr>
<td>Domestic inflation (% p.a.) b/ g/</td>
<td>16.2</td>
<td>7.9</td>
<td>6.7</td>
<td>7.9</td>
<td>9.4</td>
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</table>

a/ Balance of payments and fiscal data are for fiscal years (starting April 1). Other indicators are for calendar years.

b/ For last year of multi-year periods.

c/ As measured by the consumer price index, with an adjustment for rice prices during 1987-89; yearly average.

d/ For 1982/83.

e/ Calendar year.

Source: Central Bureau of Statistics.

B. Financial Sector Pre-reform Structure

Indonesia’s financial system at the beginning of the 1980s was typical of most developing countries (Nasution, 1983; Balino and Sundararajan, 1986). Finance was dominated by commercial banks, which accounted for 95 per cent of financial assets (Table 2). Banking was dominated by five State commercial banks which, along with the Bank of Indonesia (BI) the central cum commercial bank, controlled 80 per cent of financial assets. State banks had a number of advantages, including extensive branch networks, access to BI, and the exclusive right to receive public enterprise deposits.

The other 15 per cent of the banking system’s assets were in the hands of 21 banks authorized to operate in foreign exchange (11 foreign and 10 domestic), 60 private domestic banks limited
to rupiah operations and 29 development banks. Private banks had grown during the 1970s after having been outlawed in the early 1960s. They were hampered, however, by restrictions on branching and access to BI as well as to public enterprises. Domestic private banks were nonetheless favored over foreign banks which operated without access to BI credit and were limited to a maximum of two branches. Two national and twenty-six development banks, all but one State-owned, provided some long-term financing with funds from the public and from multilateral banks. In addition, an extensive rural financial system operated through thousands of very small village banks which were precluded from offering demand deposits. Other institutions in the financial system played a very minor role. Some 13 non-bank financial institutions had been set up in the early 1970s to promote investment banking and the stock market. Their activities were funded through the issuance of certificates of deposit (CDs), purchased by commercial banks, and through equity, again chiefly supplied by the state banks and BI. A domestic stock market, revived in 1977, was moribund. By 1982 only 24 companies had issued shares, mostly foreign-owned ones seeking to comply with investment laws requiring gradual sales of equity to Indonesians. A few bond issues had also been floated in the market, but overall the funds raised in the capital market amounted to only 1.7 per cent of financial assets in 1982. Insurance companies and pension funds were small, keeping what assets they had in land or short-term deposits.

Table 2
Structure and Growth of the Indonesian Financial System
(number, billions of rupiah and %)

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Nominal Asset Size</th>
<th>Real Growth</th>
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<tbody>
<tr>
<td>Bank of Indonesia</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>DMB</td>
<td>118</td>
<td>111</td>
<td>185</td>
</tr>
<tr>
<td>State</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Private FX</td>
<td>10</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Foreign</td>
<td>11</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Non-FX Private</td>
<td>60</td>
<td>51</td>
<td>96</td>
</tr>
<tr>
<td>Development</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Savings Bank</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other g/</td>
<td>113</td>
<td>209</td>
<td>276</td>
</tr>
<tr>
<td>Rural banks b/</td>
<td>5808</td>
<td>5783</td>
<td>6243</td>
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<tr>
<td>TOTAL g/</td>
<td>6040</td>
<td>6104</td>
<td>6954</td>
</tr>
</tbody>
</table>

a/ Comprises NBFIs, insurance and leasing companies. The NBFI data are as of March 1991.
b/ Village and Urban Peoples Credit Banks (BPRs).
c/ Totals reflect previous year stocks for those categories for which 1991 data is unavailable.

Source: Bank of Indonesia.
C. Financial Repression

Recycling oil revenues within Indonesia in the 1970s led to an elaborate system of directed, subsidized credit, known in the country as liquidity credit, that accounted for 48 per cent of all bank lending by 1982 (Table 3). Refinancing by BI at subsidized rates was plentiful so long as the loans met the criteria for any of a myriad of directed credit schemes. Schemes targeted small-scale firms, farmers, transmigrants, home owners and public enterprises. Terms varied, with the portion of a loan eligible for refinancing varying from 20 per cent to 100 per cent and the rediscount interest rates from one-third to one-half of the subsidized rate paid by the final borrower. The bulk of refinancing was provided through State banks which granted loans on the credit at rates of 6 to 12 per cent. Refinancing was the chief source of funding for State banks since, despite the open capital account, their interest rates on deposits of over 3 months were controlled by BI (Table 4). Private banks, on the other hand, were not subject to interest-rate controls, neither on deposits nor on loans. As a result, private banks offered deposit rates two to three times higher than State banks.

| Table 3 | Liquidity Credits | (billions of rupiahs; end of period)
<table>
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<tr>
<td>State Banks</td>
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<tr>
<td>Liquidity Credit (LC)</td>
<td>3876</td>
<td>6426</td>
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<td>LC/State Bank Credit</td>
<td>43.8</td>
<td>46.7</td>
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<td>State Bank LC/All LC</td>
<td>92.2</td>
<td>93.6</td>
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<td>Private National Banks</td>
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<tr>
<td>Liquidity Credit</td>
<td>208</td>
<td>298</td>
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<td>LC Share (%)</td>
<td>15.4</td>
<td>9.1</td>
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<tr>
<td>LC/All Bank Credit</td>
<td>1.8</td>
<td>1.6</td>
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<tr>
<td>All Banks</td>
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<tr>
<td>Liquidity Credit</td>
<td>4203</td>
<td>6862</td>
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<tr>
<td>LC Share (%)</td>
<td>37.1</td>
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Source: Bank Indonesia.
Table 4
Interest Rates at Commercial Banks, 1982-91 a/
(annual %)

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<td>14.7</td>
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<td>19.6</td>
<td>18.2</td>
<td>20.0</td>
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<tr>
<td>All Banks</td>
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<td>15.4</td>
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<td>17.7</td>
<td>19.6</td>
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<td>On-shore Off-shore Dollar Spread e/</td>
<td>0.9</td>
<td>-0.5</td>
<td>-0.0</td>
<td>1.0</td>
<td>1.9</td>
<td>-0.0</td>
<td>0.3</td>
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<tr>
<td>On-Shore Rupiah On-Shore Dollar g/</td>
<td>3.4</td>
<td>9.0</td>
<td>8.1</td>
<td>9.3</td>
<td>8.5</td>
<td>9.2</td>
<td>11.0</td>
<td>14.6</td>
</tr>
<tr>
<td>On-shore Rupiah-LIBOR g/</td>
<td>4.3</td>
<td>8.4</td>
<td>8.1</td>
<td>10.4</td>
<td>10.6</td>
<td>9.1</td>
<td>11.4</td>
<td>17.4</td>
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<tr>
<td>Annualized Semester CPI Inflation</td>
<td>9.7</td>
<td>6.4</td>
<td>7.8</td>
<td>6.1</td>
<td>8.3</td>
<td>10.0</td>
<td>7.4</td>
<td>6.2</td>
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<tr>
<td>6 Month US Dollar LIBOR</td>
<td>13.6</td>
<td>8.6</td>
<td>6.9</td>
<td>7.3</td>
<td>8.1</td>
<td>8.3</td>
<td>7.8</td>
<td>4.6</td>
</tr>
<tr>
<td>6 Month On-shore US Dollar Rate f/</td>
<td>14.6</td>
<td>8.1</td>
<td>6.8</td>
<td>8.4</td>
<td>10.2</td>
<td>8.3</td>
<td>8.1</td>
<td>7.2</td>
</tr>
</tbody>
</table>

a/ For rupiah transactions, excluding liquidity credits. Rates shown include all outstanding loans or time deposits, not marginal rates.
b/ Average rate for six-month time deposits.
c/ Rate calculated using the actual annualized semester inflation as proxy for expected inflation.
d/ Average nominal rate on working capital loans. Because of long credit maturities, the average shown responds slowly to current rates. Thus the lending rates cannot be directly compared with the deposit rate.
e/ Spread calculated using Private FX bank on-shore rates.
f/ Rate on offer at Private FX banks.

Source: Bank Indonesia and author's calculations.

In addition to the direction of credit through its extensive refinancing program, BI also set individual limits on credit expansion for each bank, thereby influencing the allocation of almost all credit...
Aggregate and subsector limits on credit growth had started as a means of controlling the money supply, since policy makers felt that relying on a fractional reserve system in the face of an open capital account and significant cross border flows would be ineffective. Of course a system of credit control did not protect against the effects of loose domestic monetary policy, which still led to periodic losses of international reserves. It did, however, insulate the domestic financial system from large foreign exchange inflows (the main concern of policy makers during the period of oil wealth), since these could not be transformed into credit.

**Table 5**

Sectoral Shares & Growth of Credit and GDP (%)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Share of Total Bank Credit</strong></td>
<td></td>
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<tr>
<td>Agriculture</td>
<td>8.7</td>
<td>8.4</td>
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<td>16.0</td>
<td>1.2</td>
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<tr>
<td>Manufacturing</td>
<td>24.9</td>
<td>33.3</td>
<td>31.2</td>
<td>35.1</td>
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<tr>
<td>Trade</td>
<td>31.4</td>
<td>30.8</td>
<td>29.5</td>
<td>35.9</td>
</tr>
<tr>
<td>Services</td>
<td>14.2</td>
<td>16.5</td>
<td>17.7</td>
<td>39.8</td>
</tr>
<tr>
<td>Others</td>
<td>4.8</td>
<td>9.9</td>
<td>13.4</td>
<td>47.3</td>
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<tr>
<td><strong>Share of GDP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>24.1</td>
<td>24.1</td>
<td>19.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Mining</td>
<td>19.5</td>
<td>11.6</td>
<td>12.4</td>
<td>18.5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12.0</td>
<td>18.5</td>
<td>21.8</td>
<td>21.6</td>
</tr>
<tr>
<td>Trade</td>
<td>15.9</td>
<td>17.3</td>
<td>17.5</td>
<td>16.4</td>
</tr>
<tr>
<td>Services</td>
<td>24.8</td>
<td>24.6</td>
<td>25.6</td>
<td>17.5</td>
</tr>
<tr>
<td>Others</td>
<td>3.7</td>
<td>3.8</td>
<td>3.3</td>
<td>11.2</td>
</tr>
<tr>
<td><strong>Memo items:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong> Credit (trillions of rupiahs)</td>
<td>10.3</td>
<td>32.8</td>
<td>100.4</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL GDP</strong> (trillions of rupiahs)</td>
<td>62.5</td>
<td>139.5</td>
<td>226.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bank Indonesia, Central Bureau of Statistics.

The elaborate system of credit allocation ultimately thwarted government objectives and reduced efficiency. From the perspective of the government, the plethora of programs and lack of prioritization makes it difficult to judge whether the allocation of credit that ensued was desirable. The large loan subsidies encouraged a misdirection of funds, shortchanging intended beneficiaries. From the standpoint of efficiency, the subsidized rates encouraged financing of low-return projects, or ones with
levels of capital intensity inappropriate for a low-wage, labor-surplus country. Equalization of the marginal efficiency of investment across sectors, a partial measure of allocative efficiency, was hindered by the targeted nature of directed credit. The existence of high percentages of rediscount and subsidized credit insurance from a State-owned insurance company weakened the incentive of State banks to choose viable projects or to supervise them once funded. Woo and Nasution (1989) point out that State banks rarely met their credit targets, a result that they hypothesize may have been due to large bribes called for by these banks, bribes that raised the cost of their credit above that of private banks.

For the State banks, the existence of credit ceilings together with controls on deposit and lending rates weakened the incentive to aggressively seek deposits. Private domestic banks, operating without interest-rate restrictions, showed faster growth than State banks. Because of generous credit ceilings, private banks were able to increase assets at a real rate of over 20 per cent per year between 1978 and 1981 (Table 2). State banks, though showing real growth of less than 2 per cent, were still able to collect enough funds to develop high levels of excess reserves. These reserves were either converted via foreign exchange as a hedge against devaluation or lent out to private banks in the interbank money market.

The combination of extensive state ownership, interest and credit controls and entry barriers led to financial markets that were highly segregated (Harris, et al., 1992). Public enterprises banked with the State banks, whose extensive branch network gave them advantages in raising funds. Large conglomerates, fostered through trade protection, were also customers of the State banks. These banks, therefore, provided almost all of industry’s funding. Besides the fragmentation of internal markets, different groups had varying degrees of access to foreign financing. Of the private firms, the large conglomerates had the best access to foreign borrowing. Chinese-owned firms sometimes had access to foreign funds through off-shore Chinese banking links with Hong Kong and Singapore.

D. Macroeconomic Pressures for Reform

By 1982, the worsening price of oil and world-wide recession had undermined Indonesia’s balance of payments and fiscal balance, thus prompting a series of macroeconomic adjustments. The current-account deficit had reached 7.8 per cent of GDP, while oil-tax receipts had fallen 13 per cent in real terms during the fiscal year (April to March).

One of the most important steps taken was a devaluation of the rupiah by 38 per cent in March 1983, which brought the real exchange rate back to its 1978 level, when the last devaluation had occurred. This was undertaken to spur non-oil exports, which had responded well to the 1978 devaluation, and to increase rupiah revenues in the budget.
The devaluation was coupled with a series of fiscal adjustments to make it stick. These involved cuts in current expenditures and reductions in domestic subsidies to oil, public enterprises and food. This was reinforced by delaying or canceling dozens of large public-sector projects, including four multi-billion-dollar petrochemical projects planned by Pertamina. Efforts at increasing domestic tax collections were also undertaken.

E. The First Financial-Sector Reforms

The fall in oil revenues played havoc with the old structure of the financial system that had relied on significant recycling of the government’s oil revenues through the banking system. Policy makers began to focus on the need to promote the mobilization of domestic savings to maintain investment in face of tightening external constraint. There was also growing concern about the need to provide banks with more flexibility in the allocation of credit, with the goal of increasing the efficiency of its use.

The reform process began in August 1982 as BI cut back on the provision of directed credits for some low-priority sectors. This was followed in June 1983 by more substantial reductions in the utilization of directed credits to 14 “priority areas” and a hike in their interest rates to 12 per cent. BI also moved to limit its direct credit to the public, relying instead on refinancing. At the same time, the bank announced the elimination of ceilings on lending rates at State banks, except for directed credits. Interest rates on time deposits longer than six months were also freed. Further efforts to mobilize domestic funds included the authorization of bearer CDs and the elimination of a 20 per cent withholding tax on domestic dollar deposits. Finally, and most importantly, BI eliminated all credit ceilings.

Although these bold reforms greatly increased the flexibility of existing banks in pricing and allocating credit, they stopped short of lowering entry barriers, either among banks or between banks and other financial institutions. No new foreign banks were allowed entry, nor were new licenses for foreign exchange operations issued. The opening of new branches continued to be severely constrained, giving State banks a clear advantage that was further solidified by their having sole possession of State enterprise business.

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3 This was followed several months later by the elimination of limits on six-month time deposits, so that only savings deposits continued to have interest-rate ceilings.
III. THE 1988-91 FINANCIAL REFORMS: BACKGROUND AND CONTENT

A. The Macroeconomic Background

The move to lower entry barriers was to take five years. In the intervening time Indonesia's external environment improved in 1984-85 and then worsened considerably, with the 1986 plunge of the price of oil and the appreciation of the yen both pushing the current account into the red. As in 1983, the Indonesian authorities responded with a combination of exchange-rate and fiscal policies to restore the balance of payments. Real current government expenditures were cut through a salary freeze, subsidies were reduced and capital spending slowed. Another sharp devaluation was announced in September 1986, lowering the value of the rupiah by 50 per cent. In response to the stabilization program, Indonesia was also able to step up its aid program, with large amounts of balance-of-payments support coming from the World Bank, the Asian Development Bank and Japan.

Unlike the 1983 crisis, this time stabilization efforts were coupled with trade-reform measures. This began in 1985 with a reduction in the dispersion of tariff rates. A duty-drawback system for exports was revamped in May 1986. More reforms accompanied the 1986 devaluation, setting a pattern of replacing non-tariff barriers with tariffs which were subsequently lowered. In an effort to attract foreign investment, licensing requirements were simplified in 1987. By 1991, a series of almost annual trade-reform packages had succeeded in sharply lowering export bias and variance in the trade regime and broadening the scope and ease of foreign direct investment.

Stabilization and trade reform left the Indonesian economy in a different position in 1988 than it had been at the advent of financial reforms in 1983. Inflation had been kept under 10 per cent, helped by the trade reform that created more effective competition from imports. Strong efforts to reform the domestic tax system and increase collections, coupled with austere spending, had helped keep the fiscal deficit below 4 per cent of GDP (except for 1986) despite the decline in oil revenue (Table 1). Strong export growth had reduced the dependence of the trade account on oil. Nevertheless, the debt burden had increased, both because of yen appreciation and because of larger current account deficits (Table 1).
B. The 1988-91 Financial Reforms

Having confronted the stabilization challenge of 1986, attention turned once again to the financial sector in October 1988. The government announced a far-reaching set of reforms, quickly termed PAKTO (the October Package) that dramatically lowered entry barriers to financing:

- Banking licenses were made available to new banks that could meet new minimum capital requirements.
- The process for obtaining a foreign-exchange license was simplified.
- Freer branching by domestic banks was allowed so long as standards of prudential soundness were met.
- Foreign joint-venture banks were authorized, with an extended branching network.
- Limitations on the activities of banks and non-banks were lessened.
- State enterprises were allowed to hold up to 50 per cent of their assets in private banks.
- The right to issue CDs was extended to all banks and non-bank financial institutions (NBFI).
- The burden of monetary control was lowered by a reduction in reserve requirements from 15 per cent to 2 per cent of deposits.

Efforts to promote competition were coupled with improvements in prudential supervision of banks. Regulations limiting lending to persons, firms or groups to 20 per cent and 50 per cent of equity were phased in. The new capital requirements forced greater levels of equity for banks. Insurance company soundness was improved by the imposition of solvency requirements.

Having dealt with banking, the next reform package (PAKDES, in December 1988), focused on stimulating the capital market and other financial institutions. The government issued new regulations covering the establishment of multi-finance companies empowered to engage in leasing, factoring, venture capital, credit-card operations and consumer credit. The same activities were made available to banks. Another set of regulations came out governing securities trading, including prohibitions against insider trading. A major limitation to the stock market was eliminated when domestic deposits were subjected to a 15 per cent withholding tax, the same tax levied on dividend payments. New regulations also opened the market to foreign investors.

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* This equity cushion was quickly erased when lending expanded (to be discussed in the next section).
PAKMAR, the March 1989 package, was aimed at refining the prudential regulations first announced in October 1988. It contained a series of decrees clarifying, among other matters, the development and control of NBFIs, lending limits, joint-venture bank capital ownership and bank mergers, the definition of bank capital, reserve requirements and bank investment in stocks. The long-standing absolute limit on external borrowing was replaced with restrictions on the net open position of banks in foreign exchange (25 per cent of equity). Furthermore, the requirement of prior BI approval of off-shore lending was eliminated. This allowed banks to borrow off-shore more freely so long as they lent domestically in foreign exchange or otherwise covered their position, thereby further freeing up the capital account.

PAKJAN, announced in January 1990, took on the directed credit programs that had continued to exercise a large though diminishing role in the banking system (Table 3). This time priority programs were limited to four activities (mainly finance for small farmers and foodstuffs). One important sector excluded from directed credit was export finance. Interest rates were moved closer to the market level and the portion of credit available for refinancing was lessened. Mandatory, subsidized credit insurance was abolished. All these measures were additional incentives for originating banks to more carefully select and monitor their borrowers. As a political compromise, the elimination of directed credit programs for small businesses was replaced by a requirement that 20 per cent of a bank’s loans be made to small borrowers.

The next set of reforms, announced in March 1991, returned once again to prudential regulations. New professional standards were set for bank directors. Loan-loss provisioning standards were overhauled, now involving a financial analysis of customers rather than simply a check of whether their payments were current. A new, more quantitative evaluation of bank soundness, based on capital, asset quality, management, equity and liquidity, was implemented. Finally, banks were obliged to adopt the risk-based capital adequacy standards (as stated in the Basel Agreement) by the end of 1993 (subsequently extended to 1994).

These important reforms were followed by several important new pieces of basic legislation covering banks, pension funds and insurance companies, all issued in February and March of 1992. Immediately beforehand, a regulation establishing the operating rules for closed-end mutual funds was also handed down. The Banking Law is particularly important since it eliminates any legal distinction between private and State banks or between NBFIs and commercial banks other than status of the owners. The former must now choose between operating as a security house or a bank. New, stiffer penalties
for fraud are included in the law, along with a provision for the partial privatization of State banks through the public issuance of shares.  

C. Summary of Reforms

Before moving to a discussion of the effects of financial reform, we will now briefly summarize the discussion so far. The pre-reform system was dominated by State-owned banks whose credit decisions and interest rates were largely controlled by the BI, itself a major commercial lender. As a result credit decisions were based on administrative decisions at BI with preference being given to public enterprises, protected domestic firms and agriculture. Competition between State and private banks and between banks and other financial intermediaries was stymied by high entry barriers and the ceiling on credit expansion at all banks. Nonetheless, the open capital account put limits on Indonesia’s ability to manipulate domestic interest rates by offering larger depositors and borrowers an option off-shore. The financing of fiscal deficits through foreign borrowing put a cap on expenditures that helped contain inflation and domestic demand.

The pressures of adjusting to external shocks, chiefly the oil-price declines of the 1980s, and concerns over pervasive control of credit, led to the 1983 reforms which removed all credit controls and freed interest rates on all but directed credits. The latter were streamlined but continued to play an important role in the system until their reform in early 1990. The second stage of reforms, begun in 1988, tackled the high entry barriers to banking and attempted to foster competition between banks and other financial intermediaries. This was followed in 1991 by strengthening of prudential regulation, a process that had first begun with some reforms in 1989.

Despite this generally market-based reform, there are still some areas of finance where the market is not given full play. As mentioned above, the most important is the ruling requiring banks to lend 20 per cent of their portfolio to small customers. For foreign and joint-venture banks this rule has been replaced with a requirement that 50 per cent of all lending be to exporters. The reinstitution of quantitative limits on bank external borrowing in November 1991 also limits the openness of the capital account.

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5 The Banking Law, at the insistence of Parliament, requires that the government retain 51% of the shares of state banks.
IV. EFFECTS OF THE FINANCIAL REFORMS

Having presented the macroeconomic background and the nature of the reform process, we now turn to an evaluation of its effect both on the financial system and the real economy.

A. Effects on the Financial System

The McKinnon-Shaw framework highlights the importance of reform of the financial system in promoting financial savings and improving intermediation. We now review how the financial system has reacted in three key areas: (a) financial deepening and interest rates (b) transforming the maturity of savings to match the needs of investment projects, and (c) the efficiency of intermediation.

Financial Deepening and Interest Rates. Following reform, the financial system has deepened and broadened. Reform led to a rapid expansion of financial assets within the economy after credit and interest rates ceilings were eliminated in 1983 (Table 2). Overall financial asset growth in real terms more than doubled (to 13.2 per cent) between 1982 and 1988 compared to its rate between 1978 and 1982. Private foreign-exchange bank growth was the strongest in banking, surpassed only by leasing, which had a much smaller asset base. Private banks were particularly successful in attracting time deposits from private individuals and firms, despite a narrowing of their interest spread over State banks as the latter responded to their new freedom by boosting rates 6 to 8 percentage points (Table 4). This move narrowed the differential from 8.5 percentage points on 3-month time deposits in 1982 to 2.6 percentage points in 1983. The differential fell to less than 2 percentage points by 1985 and is currently closer to one percentage point. Initial gains in deposits at private banks were also made despite restrictions on the number and location of private bank offices. Insurance companies, public enterprises and government accounts all continued to be dominated by State banks, chiefly because of legal and regulatory restrictions. The freedom to set interest rates did allow State commercial banks to boost real growth to almost 12 per cent, after a real growth of less than 2 per cent earlier on. Interestingly, despite the initial attempts to curtail directed credits, Bt's assets expanded at close to 11.8 per cent real per annum between 1982 and 1988, compared to only 1.4 per cent between 1978 and 1982. This growth did not slow down until 1988-1991.

After the lowering of entry barriers in 1988, growth expanded further, helped by a sharp increase in the number of firms. Assets at deposit money banks grew by nearly 20 per cent in real terms between 1988 and 1991, pushed by private foreign-exchange and non-foreign-exchange banks, whose asset growth was 41 per cent and 35 per cent, respectively. On the deposit side of the balance sheet, private banks in only two years have increased their share of deposits to over 40 per cent, while that of State banks has
fallen to below 50 per cent. Part of this increase is due to the success of private banks in attracting savings accounts. Nominal growth of savings accounts has exceeded 40 per cent since 1988.

Overall financial savings increased dramatically as a result of the 1983 and 1988 reform measures. \textit{M2 to GDP} ratios increased sharply between 1982 and 1991, after an increase in the previous nine years of only 4 per cent (Table 6). The bulk of this improvement came because of an expansion of quasi-money—time and savings deposit—that went mostly to private banks after the interest rate deregulation of 1983 (for time deposits) and 1988 (for savings deposits). The link between this dramatic jump in financial savings and domestic savings relative to national accounts is explored below. In the meantime, however, it is important to note that an important, though unknown, amount of the increase in \textit{M2 to GDP} was due to the movement of deposits out of Singapore and other off-shore markets and into Indonesia.

An interesting impact of the reforms is evident in the figures on \textit{M1 to GDP}, where \textit{M1} is composed of currency and demand deposits (Table 6). As Chant and Pangestu (1992) have pointed out, the 1983 reforms had little effect on the \textit{M1/GDP} ratio, with the ratio actually falling in 1983 and 1984. This pattern is consistent with \textit{M1} being held chiefly for transactions and therefore only marginally affected by the higher rates available on quasi-money. The 1983 increase in interest rates did lower demand for \textit{M1} relative to income somewhat, as people turned to the more remunerative quasi-money. After the 1988 reforms, which allowed greater branching and improved service, including interest on demand deposits, there has been a discrete jump in the \textit{M1/GDP} ratio. The effect of higher interest rates on demand deposits is also visible in the stagnant share of currency to GDP and the increase in the ratio of demand deposits to GDP.

Looking at the allocation of credit across institutions shows a different pattern from that noted earlier for deposits. State banks actually expanded their share of total credits between 1982 and 1988 from 61.7 per cent to 65.1 per cent. The maintenance of State bank dominance in credit provision was due in large part to the continued importance of liquidity credits funneled principally through State banks (Table 3) and to the decline in direct lending by \textit{BI}, whose share fell from 26 per cent in 1982 to only 4 per cent in 1988. Because of the withdrawal of \textit{BI} from direct credit creation, private banks also expanded their share of credit, which surged from 9 per cent to 23 per cent.

Lower entry barriers created a stampede of new firms into financial services. In banking, more than 75 new banks were opened between 1988 and 1991 (Table 2). Not only new banks, but the number of branches surged as well, an increase of more than 1100 to 3700 between 1988 and 1991. The \textit{PAKDES} reforms initially sparked the equity market, leading to the licensing of over 200 stock-brokerage firms. The market itself finally began providing equity finance to complement greater amounts of debt
finance, though this slowed down in 1990 with the rise in domestic interest rates and institutional growing pains (see discussion below).

Table 6

<table>
<thead>
<tr>
<th>Year</th>
<th>Currency</th>
<th>Demand deposits</th>
<th>M1</th>
<th>Quasi money</th>
<th>M2</th>
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<td>1978</td>
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<td>5.1</td>
<td>10.3</td>
<td>5.4</td>
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<td>4.3</td>
<td>5.5</td>
<td>9.7</td>
<td>9.1</td>
<td>18.9</td>
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<td>1984</td>
<td>4.1</td>
<td>5.4</td>
<td>9.5</td>
<td>10.4</td>
<td>20.0</td>
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<td>1985</td>
<td>4.6</td>
<td>5.8</td>
<td>10.4</td>
<td>13.5</td>
<td>23.9</td>
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<tr>
<td>1986</td>
<td>5.2</td>
<td>6.2</td>
<td>11.4</td>
<td>15.6</td>
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<td>1987</td>
<td>4.6</td>
<td>5.5</td>
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<td>1988</td>
<td>4.4</td>
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<td>1989</td>
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<td>7.6</td>
<td>12.0</td>
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<td>1990</td>
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<td>7.5</td>
<td>12.1</td>
<td>30.9</td>
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<td>1991</td>
<td>4.1</td>
<td>7.5</td>
<td>11.6</td>
<td>32.1</td>
<td>43.6</td>
</tr>
</tbody>
</table>

Source: Bank Indonesia.

Not only has overall asset growth been strong, but the number of products available to savers and borrowers has multiplied and service improved. Some of the fastest growth, for example, has occurred in leasing and other newer financial activities. In banking, the range of attractive savings current and time deposit accounts widened. Home mortgages and consumer finance are now available from a number of providers. Domestic syndicated loans allow on-shore financing of large projects by smaller banks.
Maturity structure: Accompanying the rapid expansion of bank liabilities and assets was a lengthening of maturities (Table 7). On the liability side, this was because of a fall in the importance of demand as compared to time deposits. Time-deposit maturities shortened dramatically, but were still longer than those of demand deposits. For all banks, 24-month deposits shrank to only 10.5 per cent in 1988, as compared to 45.7 per cent in 1982. The deregulation of savings deposits has led to a dramatic increase in their share of liabilities that, combined with a shortening of the maturity structure of time deposits, has led to a shortening of the average deposit maturity in the last few years. Since 1983, credit maturities have slowly lengthened. This means that loan maturities are somewhat better matched to the profiles of investment projects. The lengthening of credit maturities has occurred

<table>
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<th>Table 7</th>
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<tr>
<td>Commercial Bank Maturity Structure</td>
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<td>(billions of rupiah; end of period)</td>
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<td>Bank Credits</td>
<td></td>
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<tr>
<td>&lt; 3 months</td>
<td>1829</td>
<td>1991</td>
<td>2354</td>
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<td>3-6 months</td>
<td>1787</td>
<td>3443</td>
<td>5392</td>
<td>5057</td>
<td>5726</td>
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<tr>
<td>6 months-1 year</td>
<td>4438</td>
<td>11237</td>
<td>18866</td>
<td>43753</td>
<td>49539</td>
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<tr>
<td>1-3 years</td>
<td>1604</td>
<td>2092</td>
<td>3731</td>
<td>8778</td>
<td>9938</td>
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<tr>
<td>&gt; 3 years</td>
<td>3944</td>
<td>8974</td>
<td>14825</td>
<td>29904</td>
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<td>56</td>
<td>105</td>
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<td>27793</td>
<td>45273</td>
<td>91178</td>
<td>103237</td>
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<td>26.0</td>
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<tr>
<td>Savings Deposits</td>
</tr>
<tr>
<td>TOTAL Rupiah Time Deposit</td>
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<td>&lt; 3 months</td>
</tr>
<tr>
<td>3-6 months</td>
</tr>
<tr>
<td>6 months-1 year</td>
</tr>
<tr>
<td>1-3 years</td>
</tr>
<tr>
<td>unclassified</td>
</tr>
<tr>
<td>TOTAL All Deposits</td>
</tr>
<tr>
<td>Average Maturity (mths)</td>
</tr>
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</table>

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<td>19254</td>
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<td>10393</td>
<td>19622</td>
<td>38789</td>
<td>40559</td>
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<tr>
<td>&lt; 3 months</td>
<td>934</td>
<td>1280</td>
<td>3895</td>
<td>11899</td>
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<tr>
<td>3-6 months</td>
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<td>1448</td>
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<td>5886</td>
<td>9160</td>
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<tr>
<td>6 months-1 year</td>
<td>843</td>
<td>1767</td>
<td>2719</td>
<td>5958</td>
<td>8358</td>
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<tr>
<td>1-3 years</td>
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<td>5898</td>
<td>8350</td>
<td>13910</td>
<td>9523</td>
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<tr>
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<td>132</td>
<td>525</td>
<td>1136</td>
<td>1716</td>
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<tr>
<td>TOTAL All Deposits</td>
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<td>19937</td>
<td>32146</td>
<td>67705</td>
<td>73167</td>
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<tr>
<td>Average Maturity (mths)</td>
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<td>7.8</td>
<td>7.3</td>
<td>5.1</td>
</tr>
</tbody>
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\* Calculated by weighting the share of each maturity in total credit (deposits) by the assumed maturity weight (the last column of the table).
\* This total does not include FX time deposits.

Source: Bank Indonesia and author's calculations.
only at private banks. State banks and development banks have shortened the maturity of their credits. The modest improvement in the maturity of credits has come at some cost to bank soundness. It implies that banks are more exposed to interest-rate risk due to a widening maturity mismatch. Some of this risk is hedged by the use of variable rate loans.

**Bank Cost Efficiency, Allocative Efficiency & Risk:** Tobin (1984) divides banking efficiency into three categories. The most straightforward is cost efficiency: Do banks intermediate funds at the lowest possible cost for a given level of risk? This entails looking at overhead costs and, more generally, at the spread between borrowing and lending. The second measure of efficiency, allocative efficiency, tries to incorporate whether borrowers receive credit at a price commensurate with their risk. Alternatively, it can be thought of as how successful the financial system is in equalizing the marginal return on investment across the economy. The third measure of efficiency disregards the cost and risk of credit to focus on liquidity. Since banks will necessarily have some maturity mismatch on their balance sheet, prudent management requires keeping enough liquidity on hand to meet unexpected demands for cash. This last item can be seen as a way of verifying that cost efficiency has not been achieved through increasing risk. In general one could extend the analysis to other sorts of risks (foreign-exchange, interest-rate, etc.). We will now examine these different measures of efficiency.

**Cost Efficiency:** Indonesian banks have become more cost efficient since 1983. Non-interest operating expenses (NIOE), chiefly wages, rents and office supplies, have fallen sharply as a share of average total assets (Table 8). For all banks in 1982 NIOE chewed up 4.26 per cent of average assets while accounting for an exorbitant 7.11 per cent in non-foreign exchange banks. Interestingly, State banks showed lower overhead costs than private banks, implying that, though overstaffed, State bank wage levels were quite low. By 1988 NIOE figures had fallen to 3.23 per cent overall, a decline of 24 per cent, with private banks successfully bringing their overheads in line with those of State banks. As the 1988 reforms took hold, NIOE initially fell further as competitive pressures began to build. By 1990, however, the costs of a rapidly expanding branch network and higher wage rates for skilled staff pushed up NIOE at all but the foreign banks. With the slowdown in this network expansion, banks, faced with lower asset growth and higher loan losses (see below), have responded by once again reducing overhead, most noticeably at State banks.

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6 The figures in Table 8 are based on unaudited balance-sheet and income statements collected by the Bank of Indonesia.

7 Note that foreign banks were still subject to limits on branches and had traditionally had higher wage bills because of more extensive use of expatriate staff.
Bank Margins and Profitability and Efficiency: A key to sparking domestic financial intermediation is to lower the spread between borrowing and lending rates. For banks to be more efficient, though, the lowered spread should not be offset by higher risk, a point to which we return in the next section. There are two means of measuring spread (Chant and Pangestu 1992). The first is to look at spreads on an *ex ante* basis, that is, the difference between posted deposit and lending rates. This spread includes banks expectations as to future losses, expectations that can go very wrong. Alternatively one can judge spreads *ex post* by looking at the actual results from a bank’s financial statements. However, one should cautiously interpret the results in this case as well, since losses embedded in the portfolio may not yet be fully realized.

<table>
<thead>
<tr>
<th>Table 8</th>
</tr>
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<tbody>
<tr>
<td>Cost Efficiency for Banks</td>
</tr>
<tr>
<td>(% of average total assets)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Non-Interest Operating Expense</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Banks</td>
<td>4.14</td>
<td>3.33</td>
<td>3.58</td>
<td>3.87</td>
<td>1.84</td>
</tr>
<tr>
<td>Private FX Banks</td>
<td>6.89</td>
<td>3.63</td>
<td>3.35</td>
<td>3.59</td>
<td>3.44</td>
</tr>
<tr>
<td>Private Non-FX Banks</td>
<td>7.11</td>
<td>3.68</td>
<td>2.87</td>
<td>3.87</td>
<td>3.57</td>
</tr>
<tr>
<td>Foreign Banks</td>
<td>4.01</td>
<td>3.76</td>
<td>4.18</td>
<td>3.97</td>
<td>2.63</td>
</tr>
<tr>
<td>All Banks</td>
<td>4.26</td>
<td>3.33</td>
<td>3.10</td>
<td>3.82</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Source: Bank Indonesia and author’s estimates.

As we have seen, the attractiveness of depositing in the domestic market improved with the increase in real interest rates (Table 4). Improved cost efficiency and lower reserve requirements (after 1988) should have also narrowed the spread. Table 9 provides information on *ex post* spreads derived from the unaudited balance sheet and income statements of Indonesian banks as supplied to BI. The presentation follows the OECD format first used for developing countries by Hanson and Rocha (1982). It begins with interest income and expense, the difference being the net interest margin. Adding income and expenses from fee-based business, including foreign exchange, and subtracting non-interest operating expenses gives the net operating margin. Inclusion of extraordinary income and expenses, which include provision expenses, gives the pre-tax return on assets. The return on equity shown in the table is net of tax.
Both interest income and interest expenses as a share of average assets increased after the 1983 reforms. This is not surprising since both measures proxy interest rates (the difference being that the figures in Table 9 use assets, rather than loans as their base). As would be expected, State banks show the sharpest rise in interest income, from 1.4 per cent in 1982 to 9.6 per cent in 1988. This sharp rise reflects not only freedom to determine loan rates, but also the elimination of credit ceilings which allowed State and other banks to move more assets into loans. State bank interest expense, however, does not increase nearly as much as interest income - only 3.3 percentage points, as compared to 8.2 percentage points. This increase is smaller than that of private foreign exchange banks which were the State banks' closest rivals. The lower increase may be due to the continued presence of public-enterprise
deposits in State banks, as well as the continued access of State banks to refinancing from BL. Another part of the difference is explained by the implicit government guarantee that State banks enjoy.

Lower interest costs at State banks did not translate into lower interest margins at these banks because of low loan income, which between 1982 and 1988 reflected the continued importance of liquidity credits (Table 3). The 1983 reforms did, however, lead to sharply higher interest margins at all banks, going from 2 per cent to 4 per cent by 1988, somewhat exceeding the 3.5 per cent interest margins earned by US banks in 1988. Such margins were negative at all banks in 1982, while the figure for private non-foreign exchange was -8.8 per cent! This is only an accounting ploy, however, since gross operating margins were all quite high in 1982, made possible because income was being recorded from fees, rather than from interest. It is a mystery as to why, without restrictions on interest rates, private and foreign banks would resort to this subterfuge.

Reductions in NIOE between 1982 and 1988 allowed net operating margins to fall less than gross margins for all types of banks. The opening of new private banks pushed down margins at these banks, especially in 1991 when they approached international levels. State bank net operating margins were steady, however, until 1991 when, in the wake of reductions in refinancing and the loss of public-enterprise deposits, interest expenses grew 2.5 percentage points. All domestic bank returns on assets also declined between 1988 and 1991, chiefly as a result of higher provision expenses. This was particularly true for state banks where the combination of higher interest and provision expenses reduced profits to only 0.1 per cent of assets. Meanwhile, foreign banks, helped by low deposit costs and high income from foreign exchange trading, have been able to hold pre-tax profits at levels two to three times those of domestic banks.

Overall, the examination of ex post margins shows a banking system that has significantly reduced its spread as measured by net operating margin, chiefly through a reduction in fees and overhead that has outstripped increases in the interest margin. Pre-tax returns on assets are approaching levels seen in recent years in the US.

Credit Allocation and Risk: One of the central aims of financial deregulation was to improve the allocative efficiency of the banking system by eliminating ceilings on credit and interest rates while limiting directed credits. These moves were designed to allow resources to be directed to high-return sectors of the economy, at prices that reflected the risk inherent in those sectors. As we have seen, the reforms were associated with lower costs of intermediation and greater credit flows. But was the credit better allocated? To assess the effects of the reforms in this area we look first at the sectoral

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8 See Duca and McLaughlin (1990) for the US figures.
allocation of credit, and then at the results of a firm level study, following this with an analysis of changes in the riskiness of bank lending.

The overall allocation of credit was not greatly affected by the 1983 reforms (Table 5), though the pattern has roughly followed changes in GDP. In part this may have been due to the continued importance of liquidity credits within overall credit until very recently. Trade continued to receive about 30 per cent of all credit between 1982 and 1988. Manufacturing's share of credit rose to almost one-third at the expense of lending to mining. These changes mirrored movements in value added over the period, with the manufacturing share in GDP increasing and the mining share falling.

Since 1988 credit growth has accelerated most rapidly in services and "other" two areas that have not seen a corresponding increase in value added. This is due to expanding home mortgages, car loans and other consumer finance. Part of the increase in 1990 was in response to the government decree mandating that 20 per cent of a bank's portfolio be lent to small borrowers. Most consumer loans satisfy the government's criteria. Critics have charged that this consumer and property-development lending has spurred conspicuous consumption and unhealthy increases in land prices. Experiences in other countries would support the view that lending to consumers and for commercial real estate is riskier than lending to other sectors. Indeed, the 1990/91 tight money policy, instituted in part to slow overall credit growth, took the steam out of the property market and led to difficulties for some banks, including the bankruptcy of a newly-formed bank with large real-estate loans, Bank Summa.

The bankruptcy and subsequent liquidation of Bank Summa, the tenth-largest private bank with over US$1 billion in assets, demonstrates the problem not only of concentrating lending on real estate, but also of lending to related parties. A major portion of Bank Summa's loans were made to affiliated companies. The poor performance of these companies further weakened the bank. Indonesia, with all its major private banks controlled by conglomerates, is particularly exposed to the risks of related lending. For this reason adherence to prudential standards requiring that no more than 30 per cent of equity be lent to any one group is critical if financial soundness is to be achieved. The Bank Summa case does present a useful precedent in that the owners agreed to cover all losses due to lending to related companies, over and above the equity they held in the bank. The case also points out the need for further improvements in Indonesia's procedures for dealing with problem banks. Shortcomings in laws and regulations regarding bank liquidation have complicated the process of settling accounts.

Loan Pricing and Default Risk: Looking at the sectoral allocation of credit gives only a partial picture of the allocative effects of banking reform. Increased lending to sectors that have low returns, as measured by high loan default rates, is not an efficient allocation of credit. Efficient allocation thus requires that banks be allowed to price their loans appropriately. However, until 1990, because of the predominance of liquidity credits with fixed interest rates and targeted markets, there was little need
or scope for adequate loan pricing. Credit risks could be passed off to government insurance companies at subsidized premiums, further lessening the incentive for banks to adequately assess and price such loans. This was particularly true of State banks owing to the importance of liquidity credits in their portfolios. The scaling back of liquidity credits, coupled with the strong growth in non-liquidity-credit loans, however, has allowed banks greater freedom in pricing their loans and in choosing sectors and borrowers to lend to. One of the first reforms undertaken in 1983 eliminated restrictions on deposit interest rates. Altering bank cost of funds and thereby bank profitability has had profound effects on banks loan pricing, as can be seen in Table 9. Both these changes should lead, a priori, to an improvement in banks' management of default risk. Offsetting this, though, is the pressure on banks to build market share by aggressively expanding their lending portfolios at the cost of underpricing loans. While this has happened at some banks, margins in general do not seem to support this conclusion. However the sheer speed of the growth in credit of some 50 per cent per annum between 1988 and 1991 must have led to a weakening of credit quality.9

Determining which effect has predominated as regards pricing and allocative efficiency is highly speculative. An answer requires a judgement about changes in the level of risk in bank portfolios and the adequacy of measures to cover that risk. One approach to this question is to look at how loan-loss reserves and provision expenses have behaved over recent years (Table 10). This approach, however, requires caution for several reasons. First, bi portfolio examinations have traditionally focused only on the status of interest payments and collateral in classifying loans and determining reserve adequacy. Hence, the level of reserves needs not reflect the underlying financial strength of borrowers. Commercial banks have generally been stricter in classifying their portfolios. However, accounting standards as to when to declare a loan non-performing and how much to provision were not tightened until 1991 with a two-year phase-in. The standard for the treatment of accrued income when a loan becomes non-performing was not implemented until early 1991. Prior to that, interest payments, for example, could be capitalized so that a loan would appear current although a borrower had made no payments and could conceivably be bankrupt.10 Analysis is further complicated by the nature of a great part of bank lending. Firms generally receive lines of credit that are rolled over, the so-called "evergreen" loans. If the line is large enough, a company can easily keep current by simply drawing down the line to meet debt service. In a period like 1988-90, when aggregate credit growth exceeded the interest rate for the system on the whole, no one paid off any debt but instead simply borrowed more.

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10 Of course, banks, wishing to prop up their balance sheet can still capitalize interest illegally.
Furthermore, the fastest rise in credit came in 1989 and 1990 as the overall economy grew at over 7 per cent. Such strong growth can reduce company loan defaults until economic growth slows, making it appear that current levels of reserves are adequate, based on recent experience, but potentially inadequate in the future. Indeed, as growth slowed in 1991 and 1992 problem loans increased as a share of bank portfolios. Finally, tax laws limit loan-loss reserve deductibility to 3 per cent of loans for private banks and 6 per cent for State banks, limiting banks' interest in exceeding these levels. All of these factors combine to make drawing conclusions about default risk from loan-loss reserves tentative.

Table 10
Loan Loss Reserves and Provisions
(%)

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<td>3.3</td>
<td>2.7</td>
<td>2.8</td>
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<tr>
<td>Provision Expense/Total Loans</td>
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<td>0.7</td>
<td>0.8</td>
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<td>29.2</td>
<td>28.2</td>
<td>22.3</td>
<td>23.4</td>
</tr>
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</table>

a/ The interest margin is defined as the difference between interest loans and interest expense on deposits.

Source: Bank Indonesia and author's calculations.

With these caveats in mind, the figures in Table 10 show that loan-loss reserves at all banks rose as a share of loans between 1982 and 1988, fell in 1989, and since then have increased to levels higher than in 1982. Provision expenses at state banks measured as a share of the interest margin show a similar pattern since 1988. This fall and subsequent rise in loan loss reserves is just the opposite of the pattern of credit growth shown in Table 2. Taken at face value it implies that banks, particularly State banks, have experienced a deterioration in credit quality during the last two years. So long as
external factors have not dramatically affected the conditions of borrowers between 1982 and now, this would imply that allocative efficiency has worsened, at least since 1990.

One striking feature of the figures on loan-loss reserves and provision expenses is the sharp difference between the levels at State and private banks. In 1991, State banks recorded almost four times the loan-loss reserves of private banks, and were placing almost half their (smaller) interest margin into those reserves. Part of this discrepancy reflects sounder portfolios at private banks whose portfolio decisions were more often guided by profitability. However, the level of reserves at private banks is barely over the minimum of 1 per cent set by the Bank Indonesia. For this low level to be prudent, almost the entire private bank loan portfolio would need to be sound! The low level of reserves, then, must also reflect attempts by private banks to bolster profits by foregoing needed provision expenses. Unfortunately the data do not allow us to compare the size of these uncovered losses today versus the pre-reform period. One can simply note that reserves are marginally higher today than in 1982, when the economy was slowing down sharply, so that the problem may have diminished since 1982.

**Efficiency and Return on Investment at Firms.** Harris, et al. (1992) tackle the question of allocative efficiency from a different angle, focusing on whether the financial reforms led to a equalization of the marginal efficiency of investment across different firms. This measure of efficiency has shortcomings since it is an equilibrium concept, while changes in returns in different sectors due to changing technology, prices, etc. could alter returns unexpectedly. Using plant level data from a sample of about 200 manufacturing firms they find that there was a more efficient allocation of credit between 1984 and 1988; small and large firms, which show the highest increases in the productivity of capital and a convergence to the absolute levels of medium-sized firms, increased their access to credit in the wake of the reforms. Unfortunately, the analysis by Harris, et al. does not include post-1988 data. Since this is the period when banks showed increasing loan-loss reserves, it will be important to engage in further analysis before forming a definitive opinion on the implications of the financial reform for allocative efficiency.

**Risks from New Operations.** Besides managing credit or default risk, the opening up of other areas of financial intermediation to banks has added to the risks they face. Severe exchange-trading losses by at least one Indonesian bank and commercial real-estate losses at another demonstrate that opening up new areas to bank operations can lead to inexperienced staff exposing the bank to excessive risks. Coping with the risks and opportunities of the new environmentis a major challenge for banks as well as for regulators.\(^\text{11}\)

\(^{11}\) See section C for a fuller discussion of the need for improved risk management and supervision.
Liquidity Risk. A more traditional component of risk to banks is the risk of becoming temporarily illiquid. Illiquid banks jeopardize the role of the banking system in providing the means of payment for transactions in the economy and the gains of a smoothly functioning payments mechanism. To lessen this risk, a key element of the reforms has been aimed at strengthening the interbank money market to provide individual banks with liquidity to meet temporary shortfalls. Much progress has been made with the average weekly volume of lending increasing eight-fold since 1986. Maturities have lengthened to as long as one month, though the bulk of lending is still overnight. Despite the deepening liquidity, though, rates in the interbank market remain volatile. With the tightening of monetary policy in mid-1990, rates have ranged between 7 per cent and 60 per cent p. a., as major suppliers of funds - the five State banks - have coped with the reduction in liquidity credits and public-enterprise deposits.

The reduction of required reserve requirements to 2 per cent from 15 per cent in October 1988 had important implications for the liquidity policies of commercial banks. At 2 per cent of deposits, required reserves were in some cases lower than prudential liquidity management would warrant. For this reason banks overall have held "excess" reserves since 1988, with the bulk of the excess accounted for by State banks. Despite the tight money policy implemented in May 1990 (see discussion in section C), banks have still maintained excess reserves, though a smaller percentage of current liabilities. The tighter monetary policy, however, has led some banks to access BI's discount windows to maintain needed liquidity when funds have become scarce in the interbank market.

Bank loan-to-deposit ratios also remained very high. Their level remained almost unchanged from 1982 to 1990 for most groups of banks. Such high levels make it difficult for banks to adjust to temporary illiquidity, in part because loans are not as marketable as other assets. Levels are particularly high for the state commercial banks, complicating risk management. For this reason BI in March 1991 explicitly incorporated liquidity as an element of its quantitative evaluation of soundness, prompting banks to improve their liquidity position.

Another way of looking at financial-system risks is to judge the market's view of subsequent reforms in the Indonesian financial system in terms of the spread between US dollar deposit interest rates held on-shore and those held off-shore. Since both assets are denominated in the same currency, any difference in the rates would reflect transactions costs and, more importantly, the market's perception of the riskiness of the Indonesian financial system. This measure goes beyond simply judging allocation efficiency from looking at credit risk. It encompasses other risks such as interest-rate risk, maturity and

\[12\] One might argue that foreign-exchange deposits are not sufficiently large in a domestic financial system for their price to be a good reflection of their true value. In Indonesia these deposits have made up 10-20 per cent of time deposits and 5-10 per cent of demand deposits since 1982.
liquidity risk, as well as the risk of managing new operations. Figures for 1982-1988 (Table 4) show that the first stage of reforms lowered the spread, though the negative number in 1985 probably reflects transaction costs and a relatively thin market. The spread widened in 1986-1988 as the economy went through macroeconomic adjustment. In the aftermath of the 1988 reforms, however, the spread again fell. This decline was accompanied by large increases in capital inflow, chiefly external borrowing. Nonetheless from 1989 on, the figures show a steady rise in the difference between on-shore and off-shore dollar deposits. Thus, the market believes that risks have increased since 1989.

**Summary of Banking Efficiency and Risk.** Summing up the evidence on efficiency and risk, the 1983 reforms have certainly lowered intermediation margins and fostered credit expansion, much of it going to profitable firms, including small firms that were previously rationed. Increased lending to consumers, higher provisioning and higher market perception of financial risk, however, point to a growing risk in the financial system since 1988 as both the number of banks and credit growth have surged.

Credit allocation is closely related to the quality and quantity of information available in the market and the options available to bankers should a borrower default. Weak accounting standards and a scarcity of practicing public accountants, lack of registration of collateral and strict banking secrecy laws all limit the quantity and quality of information available. Inadequate bankruptcy laws limit the ability of banks to act against delinquent debtors. Although steps have been taken to shore up these weaknesses, their existence makes it easier to understand why financial reforms would be less effective in improving the efficiency of credit allocation than in increasing the quantity.

A strong supervisory agency can help to ensure a sounder allocation of credit by limiting the actions of banks that engage in risky activities, knowingly or not. As we have noted, Indonesia moved to improve prudential supervision as early as 1989. The most through-going reforms, however, were not announced until March 1991. Furthermore, improvements in personnel as well as the regulatory framework are critical for effective supervision. The knowledge needed by a bank examiner to effectively do the job is only acquired over the course of five to ten years. It therefore should not be surprising that in a era of rapid asset growth, with a great inflex of new bankers, some poor credit decisions were made, thus increasing risk in the financial system.

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13 The latter two issues are taken up below.
B. Real Effects of Financial Reform

Savings. Sparking savings, particularly by the private sector, was one of the avowed goals of financial reform in Indonesia. In judging whether this goal was achieved we first look at data from the Indonesian flow of funds and then estimate a private consumption function for Indonesia, focusing on the effects of financial savings on domestic savings.

The Indonesian flow of funds, available from 1984-89, provides information on savings and investment from various sectors of the economy, including firms, households and the government (Table 11). The figures on domestic savings rates show an 8.5 per cent increase, from 26.4 per cent to 34.9 per cent of GDP, between 1984 and 1989. This is casual evidence of a positive correlation between savings and financial reform. Closer examination of the figures shows that 7.7 percentage points of the increase come from private firms which doubled their savings rates. None of the other sectors show rates of increase anywhere near that size. Private firm savings, however, include the residual left from adjusting the other sectors savings rates to the aggregate level taken from the standard national accounts. This number is probably overestimated for three reasons: first, because the size of the change is not reflected in other sectors, particularly households; second, because the aggregate rate of investment, 37 per cent, is one of the highest in the world; and, third, because inventories make up nearly 10 per cent of the aggregate investment number.

Even if the aggregate domestic savings figures are correct, they only show a coincidence between financial reforms and increases in savings. To get a better understanding, we estimated a private consumption function that controls for other effects. Private consumption was chosen rather than private savings to reduce the impact of measurement errors on the estimation, while taking advantage of the accounting identity that links private disposable income, consumption and savings. Private, rather than gross domestic savings, was estimated because of the independence of public savings and financial reform.15

14 The figures on savings and investment used in this section rely on official estimates. Other estimates, prepared by the World Bank, show a similar pattern of savings and investment but at much lower shares in GDP (see Table 1 for the World Bank estimates).

15 One could argue that a substantial reform which increased demand for M1 would increase government seignorage and, ceteris paribus, increase public savings. As we have seen above, M1/GDP did increase after 1988. Nonetheless, treating expenditures or tax revenues as given is not realistic since they are both instruments of fiscal policy and therefore their movements will reflect both policy changes and exogenous factors.
Table 11
Structure of Sectoral Gross Saving, 1984-1989 (% of GDP)

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Non-Financial</td>
<td>25.38</td>
<td>25.44</td>
<td>23.65</td>
<td>26.81</td>
<td>30.33</td>
<td>33.18</td>
</tr>
<tr>
<td>Government</td>
<td>5.84</td>
<td>5.64</td>
<td>5.38</td>
<td>4.3</td>
<td>4.55</td>
<td>6.2</td>
</tr>
<tr>
<td>Firms</td>
<td>9.87</td>
<td>9.98</td>
<td>8.23</td>
<td>11.85</td>
<td>14.61</td>
<td>16.14</td>
</tr>
<tr>
<td>Public</td>
<td>2.18</td>
<td>1.96</td>
<td>1.49</td>
<td>2.07</td>
<td>1.41</td>
<td>0.71</td>
</tr>
<tr>
<td>Private</td>
<td>7.69</td>
<td>8.02</td>
<td>6.74</td>
<td>9.78</td>
<td>13.2</td>
<td>15.43</td>
</tr>
<tr>
<td>Households</td>
<td>9.67</td>
<td>9.82</td>
<td>10.04</td>
<td>10.66</td>
<td>11.17</td>
<td>10.84</td>
</tr>
<tr>
<td>Financial</td>
<td>1.06</td>
<td>1.49</td>
<td>0.85</td>
<td>3.03</td>
<td>0.58</td>
<td>1.68</td>
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<tr>
<td>Banks a/</td>
<td>0.89</td>
<td>0.95</td>
<td>0.53</td>
<td>2.3</td>
<td>0.2</td>
<td>1.24</td>
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<tr>
<td>Non-banks</td>
<td>0.17</td>
<td>0.54</td>
<td>0.32</td>
<td>0.73</td>
<td>0.38</td>
<td>0.44</td>
</tr>
<tr>
<td>Foreign</td>
<td>1.04</td>
<td>2.31</td>
<td>4.96</td>
<td>3.1</td>
<td>2.22</td>
<td>2.13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>27.48</td>
<td>29.24</td>
<td>29.46</td>
<td>32.94</td>
<td>33.13</td>
<td>3.99</td>
</tr>
</tbody>
</table>

Memo Item:
GDP (billions of Rp.)

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<td>85702</td>
<td>93056</td>
<td>98490</td>
<td>118795</td>
<td>135099</td>
<td>159336</td>
<td></td>
</tr>
</tbody>
</table>

a/ Including the Central Bank.


Before presenting the results we will briefly motivate the choice of variables used in estimating private consumption by drawing on issues discussed in the literature. All work on consumption focuses on some measure of income as the chief determinant. Early empirical studies used current income, later replaced by permanent income or wealth as theory began to look at consumption in an intertemporal setting. Under the life-cycle or permanent income approach, consumption was only increased in response to permanent changes in income, while transitory increases were saved. Current income continued to play a role, however, if liquidity constraints inhibited consumers from maintaining consumption levels consistent with their permanent income.

The role of real interest rates in private consumption is another contentious issue. In theory the sign of the impact is indeterminate *a priori* since it depends on which predominates: the substitution effect (consume less today to have more tomorrow when higher interest has increased your wealth), or the income effect (increase consumption today and tomorrow because the higher interest rate has increased your wealth). Schmidt-Hebbel and Webb (1992) note that changes in real interest rates can cause shifts between various assets—out of physical assets and into financial assets—which could affect measurement of private savings, because of difficulties in treating the purchase of consumer durables, for

---

\[16\] For reviews of savings in developing countries see Schmidt-Hebbel and Webb (1992), Deaton (1989) and Fry (1988).
example, but without affecting the overall level of private savings (see discussion below). Empirical results differ as to the sign of the real interest rate, but the effect is usually quite small (Fry, 1988).

Ricardians include public savings as a determinant of private consumption, arguing that expectations of future taxes lead consumers to reduce spending one-for-one with public dissaving (Barro, 1974). Some studies have included inflation as an explanatory variable though its sign is indeterminate a priori. Inflation increases uncertainty about the value of future earnings and could potentially reduce savings because of the lower return, or increase them for precautionary motives. Foreign savings are also assumed to affect private savings, usually with the argument that access to foreign savings reduces domestic savings since the former do not solely finance additional investment.

Finally and most importantly for this paper, the amount of financial wealth has been posited as a determinant of private savings. The argument is that greater levels of financial wealth imply fewer liquidity constraints on borrowers and therefore higher consumption levels. Note that this premise runs opposite to the usual argument that financial reform, by increasing interest rates, will increase savings.

Using the independent variables just discussed—permanent income, liquidity, foreign and public savings, the real interest rate and inflation—we estimated a private consumption function using annual data from 1970 through 1991. The data were taken from a database maintained by Bl. All variables were logs of current values, except for the real interest rate and foreign savings, the latter appearing as a share of private disposable income. Permanent income was calculated as a three-year moving average of private disposable income (Schmidt-Hebbel and Webb, 1992). Public savings were taken from national accounts and exclude public enterprises. The real interest rate was calculated using the three-month average time deposit rate and actual consumer price inflation for the year in question. Liquidity was measured using M2, the sum of currency and demand, time and savings deposits.

The results of the least squares regression of private consumption on the five variables and a constant shown in Table 12 show an excellent fit and no sign of first-order autocorrelation. Since several variables were not stationary, an Engle-Granger test for unit roots in the estimated equation was done using the first difference of private consumption. As expected, the sign of logged private consumption was negative. However, due to a fairly small sample size the non-stationary hypothesis cannot be rejected. There is a large and significant correlation between private consumption and permanent income, with an elasticity of .93, very close to the theoretical life-cycle value of one. Government savings come in with an unexpectedly positive and significant sign. This could be the result of the high correlation between oil prices and government savings, meaning that higher savings did not result from increased taxes with their contractionary effect on private consumption, but rather from additional income from abroad. This conjecture is consistent with the negative, though insignificant,
coefficient on the foreign saving rate. The real interest rate and inflation have negative and insignificant coefficients.

Table 12

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>STD.Error</th>
<th>T-Stat.</th>
<th>2-Tail Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.403</td>
<td>0.127</td>
<td>3.181</td>
<td>0.006</td>
</tr>
<tr>
<td>Permanent Income</td>
<td>0.935</td>
<td>0.026</td>
<td>36.641</td>
<td>0.000</td>
</tr>
<tr>
<td>Real Interest Rate</td>
<td>-0.001</td>
<td>0.002</td>
<td>-0.455</td>
<td>0.656</td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.001</td>
<td>0.002</td>
<td>-0.840</td>
<td>0.414</td>
</tr>
<tr>
<td>Liquidity</td>
<td>-0.026</td>
<td>0.012</td>
<td>-2.103</td>
<td>0.053</td>
</tr>
<tr>
<td>Foreign Saving</td>
<td>-0.254</td>
<td>0.143</td>
<td>-1.782</td>
<td>0.095</td>
</tr>
<tr>
<td>Government Saving</td>
<td>0.031</td>
<td>0.015</td>
<td>2.137</td>
<td>0.049</td>
</tr>
</tbody>
</table>

R-squared 0.9998  Adjusted R-squared 0.9998  S.E. of regression 0.017  Durbin-Watson stat 2.003  F-statistic 17758.000  Log likelihood 62.066

Note: Coefficients estimated using OLS.

Source: Author's calculations with data from BI.

Rerunning the equation without the inflation and interest-rate variables further confirmed the above results. The permanent income coefficient increased to .95. Public savings were still positively correlated with consumption, though the significance level rose to 68 per cent and foreign savings remained negatively corrected with private consumption.

From the standpoint of financial reform, the most interesting finding is the negative effect of liquidity (M2) on private consumption, which implies that increases in financial savings increase domestic savings. Since the permanent income coefficient is close to one, the two results indicate that liquidity constraints on private consumption were not a significant factor. The question remains as to why financial savings and domestic savings would be positively correlated when real interest rates are not statistically significant. A possible explanation is that increases in financial savings are associated with shifts in domestic savings away from hoarding goods. If this is associated with higher measured domestic savings, because of statistical problems in the treatment of durable goods, a positive correlation will result. Properly specified domestic savings and financial savings will therefore not be positively correlated. Still, even if this is the explanation, if greater financial intermediation allows more efficient, cheaper investment, there will still be benefits to higher financial savings.

Investment. Increasing the quantity and efficiency of investment was a primary aim of the Indonesian reform efforts. As we have just seen, the reforms are correlated with higher domestic savings, which in turn boosts investment. Harris, et al. (1992) present evidence that the marginal
efficiency of investment improved between 1984-1988, though, as noted earlier, the measure they use -
equalization of rates of return across sectors - has flaws. They go on to estimate an investment equation
as a function of sales, cash flow and leverage. Cash flow has been included to capture the effects of
liquidity constraints, while leverage has been included to test whether higher levels reduced credit access
and depressed investment. Their results show a significant reduction in the importance of cash flow to
small firms following the 1983 deregulation and a reduction in overall market segmentation. The
discussion in section IV A. of efficiency of credit allocation and hence investment, however, means that
these improvements did not necessarily persist into the second stage of financial reform when entry
barriers were lowered, though the effect on the quantity of investment has clearly persisted.

Indonesian financial reform involved freeing interest rates and led, *ex post*, to high real
rates. This could be construed as retarding investment. Such an argument would be dubious for two
reasons. First, from a theoretical standpoint, firms base investment decisions on *ex ante* rates, not *ex post*
one. If expectations of inflation consistently outpaced actual inflation, *ex post* rates would overstate *ex
ante* ones. There is evidence that this has been the case in Indonesia. Table 4 shows the spread between
on-shore dollar and on-shore rupiah deposit rates. The spread has consistently overstated the actual
depreciation of the rupiah (with exception of the two maxi-devaluations). With fairly open goods markets
linking domestic and international prices and an explicit exchange rate policy rule of maintaining the real
exchange rate (at least in the post-1986 period), this overestimation on devaluation can be linked to an
overestimation of internal inflation. Second, from an empirical standpoint, the work of Harris, et al.
(1992) shows that measured returns on capital in manufacturing far outstripped the 10-15 per cent *ex post*
lending interest rates prevailing since financial reforms began. Given this fact, the increased access to
credit that the financial reforms stimulated were probably much more important in sparking investment
than the somewhat higher measured price. It should be recalled that prior to the 1983 reforms credit was
rationed so that for many firms, the price was effectively infinite.

C. Macroeconomic Conditions and Financial Reform

Most prescriptions for financial reform call for stable macroeconomic conditions on the eve
of financial reform (e.g. Caprio and Atiyas, 1992). Preference is generally given to opening the financial
system after the current account and before the capital account (Hanson, 1992), and the references cited
therein). The Indonesian experience with financial reform shows that within limits neither a stable
economy nor a closed capital account is necessary for successful financial reform. As was discussed in
section II, Indonesia in 1983 was in the midst of a serious stabilization program to adjust to the effects
of deteriorating external conditions. Inflation, though relatively low at just over 10 per cent, was
accelerating. A yawning current account deficit of 7.4 per cent of GDP needed to be financed. The capital account had been open for over a decade, while a web of trade and investment regulations restricted the current account. Nonetheless, the freeing of interest rates and elimination of credit ceilings successfully boosted financial and domestic savings.

Rather than conducive external conditions, the Indonesia experience spotlights the need for macroeconomic management that recognizes and adjusts to the constraints imposed by the external environment and the government's own budget limitations. Adjustment to the external environment was the thrust of the 1982-83 stabilization program with its major devaluation and extensive fiscal adjustment. The fiscal balance moved from a deficit of 24 per cent of GDP in 1983 to a surplus of 1.4 per cent. Devaluation provided the real depreciation needed to reach external balance, while fiscal adjustment made the real depreciation stick. In these efforts, the open capital account and the government's commitment to avoid financing the fiscal deficit from domestic sources played a critical role in conditioning the response of the economy. Commitment to the open capital account with a quasi-fixed exchange rate meant that attempts to soften the external blow by loose monetary policy would lead to capital outflows and a quick reversal of policy. Expansionary fiscal policies were limited by access to official external finance, itself difficult to attract without a credible adjustment program. As a result, in the presence of lower oil prices expansionary policies were severely restricted. By releasing interest rates in this environment, there was little risk of currency substitution. Weak domestic demand also meant that releasing credit ceilings was unlikely to lead to excessive increases in domestic credit.

The importance of macroeconomic management, the role of the capital account and the absence of domestic debt finance is further reinforced by Indonesia's experience with the second stage of its reforms in 1988. By that year Indonesia had already applied a second round of adjustments in view of the sharp decline of oil revenues in 1986. Trade and investment restrictions had been relaxed. The economy was poised for growth—a much more propitious time for financial reform. Nonetheless, the 1988 reforms, though successful in spurring further improvements in cost efficiency, competition and growth in the financial sector, also led to a growing problem of poor credits. This was the result of a combination of circumstances that macroeconomic policy failed to adjust to initially. Unlike in 1983, trade reforms opened the door to new profit opportunities within the Indonesian economy, spurring a rise in investment demand. Banks moved aggressively to finance these investment plans, spurred by competition from new entrants. Thus a private sector imbalance between savings and investment developed against which the prohibition against domestic deficit finance did not protect. This rise in demand was initially validated by the government's attempts to lower interest rates through a combination of loose monetary policy and tightening in late 1989 and early 1990. Only when the open capital account led to a US$1 billion loss in reserves in April 1990 did the government move to tighten monetary policy.
This immediately dealt with the interest-rate problem, by raising rates to levels consistent with international parity. The private-sector savings-investment gap, however, was little affected by the adjustment in monetary policy. Only in 1991, when fiscal policy tightened, was internal balance restored. In the interim a significant amount of new credit had been extended by banks, credits that became more difficult to service in 1991 as interest rates remained high and activity slowed somewhat.

V. CONCLUSIONS

This paper began by looking at the theoretical links between financial growth, savings and economic growth. Discussion focused on four important aspects of the financial system and growth:

- the depth and breadth of financial savings;
- the ability of the financial system to alter maturities to suit the needs of investors;
- the efficiency of the financial system, both in terms of cost and in allocation of credit;
- the ability of the financial system to deal with informational asymmetries and incentive problems.

To promote these aspects of the financial system prescriptions for financial reform have frequently called for reform during periods of macroeconomic stability and under the protection of a closed capital account. What do phased reforms in Indonesia—the removal of ceilings on interest rates and credit expansion, then the lowering of barriers to entry, followed closely by a reduction of the direct role of the central bank in favor of a stronger supervisory presence—show about this set of prescriptions/effects?

The reforms have led to a large and sustained increase in financial depth and breadth in the economy, with the $M_2$ to GDP ratio rising from 18 per cent in 1982 to over 44 per cent in 1991. What is more, econometric work on private savings in Indonesia shows that this increase in financial savings has not hampered domestic saving independent of any effect from higher incomes, lower inflation or the real interest rate. The maturity of bank loans has also been extended over the period of the reforms, better meshing with the investment needs of the economy. Cost efficiency has improved with a reduction in overhead. Spreads between deposit and lending rates have come down at all banks and have moved closer to one another at different types of banks.

In the area of credit allocation and financial-system risk there is less certainty about the positive benefits of the reforms, particularly the lowering of entry barriers in 1988. Evidence from manufacturing firms shows improved access to credit and a movement toward equalization of returns on
investment across firms. Data on loan losses, the broader allocation of credit outside of manufacturing and an empirical estimate of financial-system risk all point to increasing risk since 1988. Given the difficulties in allocating credit because of information and incentive problems, it is not surprising that efficiency gains are more elusive. These information and incentive problems highlight the need for improvements in the legal accounting and prudential systems that support efficient financial systems.

Indonesia's reform efforts were generally successful despite several factors that differed from standard prescriptions. The components of Indonesia's financial reforms are fairly standard: elimination of constraints on interest rates, followed by the loosening of constraints on competition between financial institutions and instruments. The more favorable results in the Indonesian case, then, are unlikely to lay in the nature of the reforms. What is unusual is the timing of the reforms. First, Indonesia's capital account was open at the time of reforms; second, reform began in a time of serious macroeconomic adjustment. Indonesia's experience highlights the need for macroeconomic management that recognizes the limitations imposed by the external budget constraint and that of the government rather than macroeconomic stability per se, and responds quickly to those constraints. Indeed the open capital account aided macroeconomic management by providing quick feed-back when domestic policies moved out of line and by limiting the inflationary consequences of excessive demand stimulus. The absence of domestic finance for fiscal deficits removed an important source of pressure on domestic financial markets. Quick response to external imbalance, backed by strong fiscal adjustment, aided the successful reforms in 1983. Overly stimulatory monetary policy, and a private-sector savings-investment gap which was not sufficiently offset by fiscal policy, exacerbated the credit expansion of 1989-90. Furthermore, the slow response of fiscal policy put more of the burden of adjustment on monetary policy, keeping interest rates high and thereby prolonging the problem of non-performing loans within the banking system. Adroit macroeconomic management can thus promote successful financial reform even in periods of macroeconomic adjustment with a economy open to speculative capital flows.
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