The determinants of the utilisation of government-backed loan schemes: a case study of Malaysia

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Government-backed loan schemes have been introduced in many countries to enable small and medium-sized enterprise (SMEs) to have access to funding at a reasonable cost. This paper focuses on the operation of the Credit Guarantee Corporation (CGC) in Malaysia. A model to determine the utilisation of the CGC’s facilities is developed. The equilibrium level of utilisation is derived by solving a reduced form equation which balances supply and demand factors. In an ex-post simulation test, our estimated model tracked the behaviour of the actual data reasonably accurately. The implications of the model’s findings for CGC, SMEs, banks and public policy makers are explored.

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1. INTRODUCTION

Small and medium-sized enterprises (SMEs) in both developed and developing countries are perceived to play a crucial role in economic development (Bannock and Albach, 1991; Chee, 1992). Many potential benefits flowing from the SME sector will not be fulfilled, however, if this sector cannot compete on equal terms with larger businesses. It is acknowledged that SMEs face difficulties in obtaining external funding from private sector financial institutions, notably commercial banks. As a consequence, government-backed loan schemes have been introduced in many countries to enable SMEs to have access to funding at a reasonable cost (Levitsky and Prasad, 1987).

Attempts to measure the effectiveness of these schemes have addressed such issues as whether they provide additional finance, and their cost to the public purse [for example, reports on the United Kingdom’s Loan Guarantee Scheme (Robson Rhodes, 1984; NERA, 1990; and Pieda, 1992) and studies of Small Business Administration Loans in the US (Rhyne, 1988, and Pletcher and Tootelion, 1989)].

The official body offering guarantees for bank facilities in Malaysia is the Credit Guarantee Corporation (CGC). As elsewhere, the activities of the CGC have been subject to review. However, previous studies (Chee, 1986a, and Phang, 1992) have tended to describe the services offered by CGC in fairly general terms, or to concentrate solely on one aspect of its operations, notably the default record of CGC-backed borrowers.

This paper takes a different approach. Using data from 1984-1993, it attempts to develop a model which determines the utilisation of the CGC’s facilities.

The objectives of this paper, in the context of Malaysia, are to:

a) provide, in Section 2, a brief overview of the operation of the CGC;

b) identify, in Section 3, a range of demand and supply factors affecting the utilisation of CGC’s facilities; and
2. AN OVERVIEW OF THE OPERATIONS OF THE CGC

The CGC provides guarantee cover for credit facilities extended to small firms in three broad sectors - general business, agriculture and manufacturing. The CGC’s capital is held by Bank Negara (the Central Bank) and all the commercial banks in Malaysia. Bank Negara issues guidelines (effectively quotas) covering the amount of CGC-linked lending to be undertaken by the banks.

The CGC is approached only after a bank has declined a request for conventional funding - the CGC guarantee is a substitute for collateral provided by the company. While the paper henceforth refers to “CGC loans” to describe all facilities guaranteed by CGC, the finance is actually provided by the banks. The borrower pays a modest fee for the issue of the guarantee, currently 0.5 percent of the value of the guarantee.

Since its inception in 1972, three main facilities have been offered by the CGC. The utilisation of the individual schemes is shown in Table 1.

In the early days, the principal facility was the General Guarantee Scheme (GGS), which operated from 1972 to 1981. The GGS was available to guarantee bank facilities with a maximum limit of RM200,000 (RM: Malaysian Ringgit), for enterprises whose shareholders’ funds did not exceed RM200,000. When the Special Loan Scheme (SLS) was introduced in 1981, the limit was raised to RM250,000 for both shareholders’ funds and the size of credit facilities. For the GGS and SLS, the CGC guaranteed 60% of the value of approved loans. Another important feature was that, until 1987, fixed rates of interest were charged on both GGS and SLS loans. In 1989, the CGC decided to phase out the semi-dormant General Guarantee Scheme and
the declining Special Loan Scheme, and replace them with the Principal Guarantee Scheme (PGS). Compared to the previous schemes, the PGS offered support to larger firms (shareholders’ funds - RM500,000), a higher level of guarantee coverage (typically 70 percent of the value of the loan) and an increased limit on credit facilities (RM500,000).

Table 1. VALUE (RMm) OF APPROVED CGC LOANS, 1984-93

<table>
<thead>
<tr>
<th>Year</th>
<th>GGS</th>
<th>SLS</th>
<th>PGS</th>
<th>HPT</th>
<th>LHPT</th>
<th>ASLS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>124.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>124.3</td>
</tr>
<tr>
<td>1981</td>
<td>25.8</td>
<td>498.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>524.0</td>
</tr>
<tr>
<td>1982</td>
<td>9.7</td>
<td>519.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>529.0</td>
</tr>
<tr>
<td>1983</td>
<td>7.2</td>
<td>298.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>305.5</td>
</tr>
<tr>
<td>1984</td>
<td>4.0</td>
<td>208.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>212.2</td>
</tr>
<tr>
<td>1985</td>
<td>2.7</td>
<td>140.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>142.7</td>
</tr>
<tr>
<td>1986</td>
<td>1.8</td>
<td>122.5</td>
<td>3.7</td>
<td></td>
<td></td>
<td></td>
<td>128.0</td>
</tr>
<tr>
<td>1987</td>
<td>1.3</td>
<td>75.2</td>
<td>7.3</td>
<td></td>
<td></td>
<td></td>
<td>83.8</td>
</tr>
<tr>
<td>1988</td>
<td>0.7</td>
<td>49.8</td>
<td>7.4</td>
<td></td>
<td></td>
<td></td>
<td>57.9</td>
</tr>
<tr>
<td>1989</td>
<td>0.3</td>
<td>21.4</td>
<td>78.5</td>
<td>4.9</td>
<td></td>
<td></td>
<td>105.1</td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td>313.3</td>
<td>1.0</td>
<td>6.0</td>
<td>4.2</td>
<td></td>
<td>324.5</td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td>206.3</td>
<td>6.8</td>
<td>5.2</td>
<td></td>
<td></td>
<td>218.3</td>
</tr>
<tr>
<td>1992</td>
<td></td>
<td>174.7</td>
<td>1.5</td>
<td>1.8</td>
<td></td>
<td></td>
<td>178.0</td>
</tr>
<tr>
<td>1993</td>
<td></td>
<td>205.8</td>
<td>8.1</td>
<td>1.6</td>
<td></td>
<td></td>
<td>215.5</td>
</tr>
</tbody>
</table>

Source: CGC
GGS = General Guarantee Scheme
SLS = Special Loan Scheme
PGS = Principal Guarantee Scheme
HPT / LPT / ASLS = Loans for “Hawkers and Petty Traders”

[N.B. The data for 1980-3 are shown for information only - data for the early 1980s were not available for a number of other variables in the model.]

The initial introduction of each new scheme led to an increase in the value of loans granted. When the Special Loan Scheme replaced the General Guarantee Scheme in 1981, it had an immediate impact. The value of CGC loans disbursed in the early
1980s has never been repeated. However, momentum was not sustained; the support offered by the Principal Guarantee Scheme (PGS) to larger firms, together with the increased limit on credit facilities, was eagerly grasped by banks and the small business community alike from 1989 onwards. The average size of loan had increased from RM27,000 in 1986 (under the SLS) to RM80,000 in 1992, although 42 percent of PGS loans approved in 1992 were for amounts below RM30,000. Furthermore, the interest rate applied to PGS loans was linked to Base Lending Rate, in recognition of the fact that earlier attempts to impose a fixed rate of interest on CGC loans had been misguided.

The reasons for the decline in usage of the SLS and the recovery under the PGS are captured in the utilisation model developed below.

Other schemes made available over recent years have been targeted at hawkers and petty traders (HPT) and their trade associations (LHPT, ASLS).

“Utilisation” is represented by the total for annual approvals in Table 1. This figure includes all the schemes offered by the CGC, despite the fact that our analysis will concentrate on the factors affecting utilisation of the principal scheme(s). The selected variable is acceptable because the “hawkers” loans represent only a small percentage of the value of the overall CGC portfolio - over 23,000 facilities have been granted to “hawkers” since 1986, but these small loans total only RM59.5m.

Finally, the PGS was superseded by the New Principal Guarantee Scheme early in 1994. This major initiative aims to satisfy the requirements of even larger companies, offering higher credit limits and guarantee cover than the PGS. The New PGS also incorporates other features which should encourage the banks to utilise the Scheme. Whilst this paper concentrates on the decade prior to the introduction of the New PGS, the likely impact of the revised Scheme will be assessed in the concluding section.
3. THE FACTORS AFFECTING UTILISATION OF CGC’S FACILITIES

The CGC’s schemes have experienced waves of popularity followed by periods of
decline. These ebbs and flows can be partially explained by wider economic and
political factors, for example, the onset of an economic downturn or the introduction
of measures to encourage the growth of small businesses.

However, our hypothesis is that the utilisation of CGC’s schemes has been (and
continues to be) determined by the interaction of a number of more specific demand
and supply factors. This section considers these factors in sequence. In each case,
a method of measuring the factor (a proxy variable) is suggested. The analysis also
indicates whether the proposed factor should have a positive or negative effect on
utilisation in a quantitative relationship.

3.1 The Cost of CGC Loans.

A critical factor, for borrowers and bankers alike, is how the cost of CGC loans
compares with conventional bank loans.

A prime objective of the authorities in Malaysia has been to enable small firms\(^1\) to
have access to bank finance at a reasonable cost. In an effort to achieve this
objective, the banks were forced to charge artificially low rates of interest on loans to
small scale enterprises (SSEs) and on CGC loans. These rates were, for many
years, set at levels well below the variable rates applied to larger borrowers. Indeed,
until the end of 1986, the banks were effectively lending at a loss to small firms,
because the banks cost of funds (Base Lending Rate: BLR) was above the rate that
they could charge borrowers. It was only in the post-1986 era that the banks could
achieve a satisfactory return on conventional and CGC loans for small firms.

The differentials between the various rates of interest are explored in Table 2.

\(^1\) There is no consistent official definition of what constitutes a “small” or “medium-sized” enterprise in
Malaysia. The term small-scale enterprise (SSE) was applied to registered businesses with net assets less than
RM250,000 until April 1988, when the figure was raised to RM500,000.
From the borrower’s perspective, the cost of a CGC loan consists of the interest rate applied plus the amount charged for the provision of the guarantee. Prior to April 1989, the official rate of interest applied to SSE and CGC borrowing was the same. Small firms seeking access to external funding therefore preferred to utilise conventional bank loans, because they would not have to pay the premium for the CGC guarantee. However, if the bank was unwilling to offer a conventional loan, a CGC-backed facility could be utilised.

Table 2. BANK LENDING RATES, 1984-1993

<table>
<thead>
<tr>
<th>Year</th>
<th>ARCB % (Col 1)</th>
<th>SSEs % (Col 2)</th>
<th>CGC % (Col 3)</th>
<th>ARCB – CGC % (Col 4)</th>
<th>BLR % (Col 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>12.8</td>
<td>7.50</td>
<td>7.5</td>
<td>5.30</td>
<td>12.3</td>
</tr>
<tr>
<td>1985</td>
<td>12.1</td>
<td>10.0</td>
<td>10.0</td>
<td>2.10</td>
<td>10.8</td>
</tr>
<tr>
<td>1986</td>
<td>12.0</td>
<td>10.0</td>
<td>10.0</td>
<td>2.00</td>
<td>10.0</td>
</tr>
<tr>
<td>1987</td>
<td>9.7</td>
<td>*8.75</td>
<td>*8.75</td>
<td>0.95</td>
<td>7.5</td>
</tr>
<tr>
<td>1988</td>
<td>9.0</td>
<td>*8.50</td>
<td>*8.50</td>
<td>0.50</td>
<td>7.0</td>
</tr>
<tr>
<td>**1989</td>
<td>8.7</td>
<td>n/a</td>
<td>+8.50</td>
<td>0.20</td>
<td>7.0</td>
</tr>
<tr>
<td>1990</td>
<td>9.0</td>
<td>n/a</td>
<td>+9.00</td>
<td>0.00</td>
<td>7.5</td>
</tr>
<tr>
<td>1991</td>
<td>9.7</td>
<td>n/a (capped)</td>
<td>+9.00</td>
<td>0.70</td>
<td>9.0</td>
</tr>
<tr>
<td>1992</td>
<td>10.3</td>
<td>n/a</td>
<td>+11.00</td>
<td>(0.70)</td>
<td>9.5</td>
</tr>
<tr>
<td>1993</td>
<td>9.7</td>
<td>n/a</td>
<td>+9.80</td>
<td>(0.10)</td>
<td>8.3</td>
</tr>
</tbody>
</table>

ARCB: average rate charged by commercial banks (all borrowers)
SSEs: rate charged on advances to small scale enterprises
CGC: rate charged on CGC loans
BLR: Base Lending Rate

* Rate was the lower of BLR plus 1.75 percent or 9.0 percent.
** CGC and SSE loans were charged at the same rate until April 1989, when the preferential rate for SSEs was abolished.
+ Rate for the Principal Guarantee Scheme was BLR plus 1.5 percent except for part of 1991/2 when a ceiling rate was imposed.
N.B. The table uses year-end figures only.

Source: Bank Negara
After April 1989, the preferential rate of interest for SSEs was abolished. This coincided with the introduction of the Principal Guarantee Scheme (PGS); PGS loans were made available at a variable rate of interest - BLR plus 1.5 percent. As a result of these two factors, the differential between the average rate charged by commercial banks to borrowers (ARCB) and the rate applied to CGC loans narrowed (Column 4 in Table 2), except for a period over 1991/2 when the imposition of a 9 percent ceiling rate gave borrowers a strong incentive to utilise the CGC. It should be noted that the ARCB includes borrowing by all classes of customer; SSEs would normally be charged a rate in excess of that figure, to reflect the additional risk of lending to smaller firms.

For small firms seeking finance in Malaysia, the cost of bank loans (interest margin only) and CGC lending (interest margin plus guarantee premium) has been broadly comparable since 1989, except when the ceiling interest rate was imposed in 1991/2. The demand for the CGC’s facilities is nowadays probably less sensitive to price, therefore, and it will tend to be restricted to those cases where the CGC guarantee offers the only available financing option.

Turning to the supply side, it was noted above that interest rates applied to CGC and SSE loans were previously set at artificially low levels by the authorities. (Furthermore, banks were forced to lend at fixed rates until 1987, hence they suffered losses when the general level of interest rates rose.) However, this policy of depressing interest rates did not have the desired effect, because it distorted allocative efficiency. Chee (1986b) noted that access to finance, rather than its cost, was the major problem for small firms in Malaysia. Faced with low interest rates, the banks’ natural reaction was to ration credit as the return did not reflect the risk involved (Greenwald, Weiss and Stiglitz, 1984; Weiss and Stiglitz, 1981).

In these circumstances, Bank Negara had to impose guidelines to force the commercial banks to lend. Such guidelines typically contained an overall target for lending to SSEs, with a certain percentage to be channelled to CGC loans. Penalties were levied on individual banks for non-compliance with their targets. The Bank Negara guidelines for SSE advances were subsequently abolished in 1990, although they have been retained for CGC loans.
When the CGC’s Principal Guarantee Scheme was introduced in 1989, the interest rate formula was fixed at 1.5 percent above Base Lending Rate (BLR). While the banks preferred to lend “in house” to small firms wherever possible, the 1.5 percent margin over BLR allowed them to earn a reasonable return in meeting the quotas for PGS lending. It is significant that the supply of PGS loans slowed down sharply when the interest rate cap of 9 percent was enforced in 1991/2.

On a theoretical basis, the best proxy variable ($X_1$) to reflect the cost factors discussed in this sub-section is the differential between the average rate of interest charged by commercial banks and the rate applied to CGC lending. As this differential widens, there is less incentive for banks (and more incentive for borrowers) to utilise the CGC. Our analysis suggests that the supply side factors have become increasingly dominant in determining utilisation over recent years. We would therefore expect to see a negative relationship between utilisation and the chosen proxy.

### 3.2 The Availability of External Credit for Small Firms

Any proxy variable to represent the availability of external credit ($X_2$) has, once again, to reflect the interaction of demand and supply factors.

The desire of small firms to take on borrowing commitments (including CGC loans) depends upon their ability to use the funds profitably, which in turn depends upon general economic factors, such as the levels of economic activity and business confidence. The Malaysian economy has been growing at a rate of around 8 percent per annum since the late 1980s.

The Malaysian Government has also stressed that the development of a vibrant SME sector is vital if the country is to achieve fully-industrialised status. In a rolling programme of national planning documents - including the New Economic Policy (1970-1990), the National Development Programme (1991-date) and a series of five year Malaysia plans (currently the Sixth) - the importance of this sector has
increasingly been recognised. Smaller enterprises have been exhorted to grow and to seek out investment opportunities.

As noted above, Chee (1986b) recognised that small firms in Malaysia have often been denied access to finance. From the suppliers’ perspective, private sector financial institutions are keen to meet the demand for loans from small firms, provided that the returns are perceived as commensurate with the risks involved. The commercial banks in Malaysia had tended to finance the property, manufacturing, general commerce and financial services sectors. More recently, however, the banks and other private sector financial institutions (notably finance companies, and leasing and factoring companies) have aggressively sought lending opportunities in the small business sector.

From public funds, government assistance has been provided in a variety of ways (including soft loans, grants, tax incentives and training support) through a number of government departments and publicly-backed development finance institutions. Official attempts to fund small firms by the CGC and other bodies had, nevertheless, failed to make a significant impact in meeting the demand for external finance from smaller enterprises (Fong, 1990).

Which proxy variable should therefore be used to represent the availability of external credit for small firms?

Despite the plethora of financial institutions servicing the funding requirements of smaller firms, CGC loans were restricted to the commercial banks over the period of this study. Information on the value of loans outstanding with the commercial banks is shown in Table 3.
### Table 3. COMMERCIAL BANKS – OUTSTANDING LOANS: SSEs, ALL BORROWERS AND CGC LOANS

<table>
<thead>
<tr>
<th>Year</th>
<th>SSEs (RMm)</th>
<th>Total Advances (All Firms) (RMbn)</th>
<th>SSEs as % of Total Advances</th>
<th>SSEs excluding CGC Loans (RMm)</th>
<th>CGC Loans (RMm)</th>
<th>CGC Loans as % of loans to SSEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>3,673</td>
<td>43.5</td>
<td>8.4</td>
<td>2,738</td>
<td>935.1</td>
<td>25.5</td>
</tr>
<tr>
<td>1985</td>
<td>3,473</td>
<td>50.3</td>
<td>6.9</td>
<td>2,621</td>
<td>852.3</td>
<td>24.5</td>
</tr>
<tr>
<td>1986</td>
<td>3,232</td>
<td>53.6</td>
<td>6.0</td>
<td>2,481</td>
<td>750.5</td>
<td>23.2</td>
</tr>
<tr>
<td>1987</td>
<td>2,984</td>
<td>52.4</td>
<td>5.7</td>
<td>2,313</td>
<td>670.6</td>
<td>22.5</td>
</tr>
<tr>
<td>1988</td>
<td>3,798</td>
<td>56.8</td>
<td>6.7</td>
<td>3,210</td>
<td>587.8</td>
<td>15.8</td>
</tr>
<tr>
<td>1989</td>
<td>3,712</td>
<td>67.1</td>
<td>5.5</td>
<td>3,200</td>
<td>511.7</td>
<td>13.8</td>
</tr>
<tr>
<td>1990</td>
<td>3,803</td>
<td>80.8</td>
<td>4.7</td>
<td>3,230</td>
<td>573.2</td>
<td>15.1</td>
</tr>
<tr>
<td>1991</td>
<td>4,048</td>
<td>97.2</td>
<td>4.2</td>
<td>3,445</td>
<td>603.0</td>
<td>14.9</td>
</tr>
<tr>
<td>1992</td>
<td>4,337</td>
<td>105.7</td>
<td>4.1</td>
<td>3,782</td>
<td>555.2</td>
<td>12.9</td>
</tr>
<tr>
<td>1993</td>
<td>4,426</td>
<td>117.3</td>
<td>3.8</td>
<td>3,827</td>
<td>599.2</td>
<td>13.5</td>
</tr>
</tbody>
</table>

Source: Bank Negara and CGC

[The figures in Table 3 have to be interpreted with a degree of caution because the official definition of an SSE was revised on 1 April 1988, to cover registered businesses with net assets of less than RM500,000 (previously RM250,000). As a consequence, the amount of bank lending to SSEs appeared to increase sharply, from RM2.98bn in 1987 to RM3.79bn in 1988, and the proportion financed by the CGC to fall sharply, from 22.5 percent in 1987 to 15.8 percent in 1988. The situation was corrected to an extent in 1989, as the CGC adopted the revised definition of an SSE when the PGS was introduced.]

Table 3 demonstrates that the value of outstanding loans to SSEs declined over the period 1984-1987; since then, the trend has been upwards (Col 1). Growth in total bank credit has outstripped the growth in SSE lending (Cols 2 and 3). The value of outstanding CGC loans has been steadily moving downwards, although there was a slight recovery after the introduction of the Principal Guarantee Scheme (PGS) in 1989 (Col 5). In relation to the value of loans to SSEs (Col 6), CGC loans have been relatively constant over recent years, although the percentage has declined markedly since the early 1980s.
The amount outstanding to SSEs includes CGC loans; if the latter are extracted from the former, the level of non-CGC advances to SSEs can be identified (Col 4). This figure was chosen as the proxy variable to represent the availability of external credit ($X_2$) for SSEs. As the proxy increases, the utilisation of the CGC’s facilities would be expected to fall. However, there has not been a consistently negative relationship between Columns 4 & 5 in Table 3.

This anomaly might be explained by (a combination of) the following factors:

- in 1990 and 1991, the banks could switch **existing** borrowing to the PGS
- over the period of this study, the supply of bank funds to small firms has been affected by competing demands from other sectors, for example, larger property companies
- more generally, small firms have increasingly sought funding outside the commercial banks, hence there is less direct substitution between conventional bank and CGC loans. (The New PGS can be used to guarantee loans granted by finance companies.)

**3.3 The Willingness of Banks to Direct Customers to the CGC**

The willingness of the banks to utilise the CGC’s facilities depends upon the returns available on CGC lending (as discussed in 3.1 above), the level of bad debts incurred and, critically, how bankers’ perceptions are influenced by the CGC’s operating procedures regarding the settlement of claims.

All lending to small firms involves risk. In addition, the CGC is designed to meet the needs of small firms which do not qualify for conventional bank funding. It is thus inevitable that some CGC-backed borrowers will default. The banks will accept a certain level of failure in their portfolio of CGC loans (even though the CGC guarantee does not cover 100 percent of their liabilities), provided they can be assured that the guarantees will be honoured.
The two interrelated themes - the default rate and the settlement of claims - are now examined, using the information in Table 4.

### Table 4. CREDIT GUARANTEE CORPORATION LIABILITIES

<table>
<thead>
<tr>
<th>Year</th>
<th>* Non Performing Loans</th>
<th>**%</th>
<th>Claims Processed</th>
<th>Claims Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number (Col 1)</td>
<td>Value (RMm) (Col 2)</td>
<td>(Col 3)</td>
<td>Number (Col 4)</td>
</tr>
<tr>
<td>1984</td>
<td>n/a</td>
<td>114.8</td>
<td>12.3</td>
<td>232</td>
</tr>
<tr>
<td>1985</td>
<td>n/a</td>
<td>151.4</td>
<td>17.8</td>
<td>202</td>
</tr>
<tr>
<td>1986</td>
<td>12,208</td>
<td>201.2</td>
<td>26.8</td>
<td>210</td>
</tr>
<tr>
<td>1987</td>
<td>13,902</td>
<td>229.3</td>
<td>34.2</td>
<td>221</td>
</tr>
<tr>
<td>1988</td>
<td>12,709</td>
<td>239.5</td>
<td>40.7</td>
<td>228</td>
</tr>
<tr>
<td>1989</td>
<td>11,589</td>
<td>236.3</td>
<td>49.2</td>
<td>604</td>
</tr>
<tr>
<td>1990</td>
<td>10,515</td>
<td>223.2</td>
<td>38.9</td>
<td>909</td>
</tr>
<tr>
<td>1991</td>
<td>9,588</td>
<td>215.0</td>
<td>35.7</td>
<td>641</td>
</tr>
<tr>
<td>1992</td>
<td>8,467</td>
<td>209.0</td>
<td>36.0</td>
<td>301</td>
</tr>
<tr>
<td>1993</td>
<td>7,787</td>
<td>184.8</td>
<td>34.0</td>
<td>449</td>
</tr>
</tbody>
</table>

* Banks’ estimate of potential bad debts.

** Non Performing Loans as a percentage of outstanding CGC loans.

Source: CGC

The actual default rate of CGC-guaranteed firms is not publicly available, but the CGC does publish annual figures for loans classified by the banks as non-performing (NPLs). Such loans reached a peak in the late 1980s, in the aftermath of the severe economic recession experienced in Malaysia over 1985/6. In official loan schemes operating elsewhere, NPLs would be translated into claims on which payment would be almost automatic. However, it was not a straightforward exercise to translate the potential liabilities identified by the banks into the settlement of claims by the CGC.

There is some evidence, according to the CGC, that banks overstate the value of, or misclassify loans as, NPLs. Consequently, the figures for the number and value of NPLs (Columns 1 & 2 respectively in Table 4) tend to overstate the potential losses on CGC loans. An alternative indicator, the value of claims processed (Col 5), has
certainly been consistently low compared to outstanding NPLs. This is to be expected as claims processed is an annual amount, whereas the figures for NPLs are cumulative; moreover, the bulk of the NPLs stem from the Special Loan Scheme, where CGC’s guarantee covered only 60 percent of the value of the loans.

In the light of this discrepancy between NPLs and claims processed, it proved difficult to isolate one proxy variable \(X_3\) to represent the default rate or, perhaps more importantly, the bankers’ perception of the default rate of CGC-backed firms. After a series of experiments, on a trial and error basis, the most significant indicator in our model was found to be the value of NPLs divided by the value of claims processed \((\text{Col 2/Col 5})\). The figures for the value of claims processed were used, rather than the numbers - the latter are inflated by small claims arising under all the hawkers’ facilities.

In general, the relationship between utilisation and either NPLs or claims processed would be expected to be negative - the more chance of incurring a bad debt, the less inclined banks would be to utilise the CGC. The relationship between our selected proxy variable and utilisation is more complex, but it should still be negative. Our contention is that, as the ratio increases (as CGC processes fewer claims in relation to the value of NPLs), bankers would seek to reduce the level of CGC utilisation.

Whatever the absolute level of defaults arising from CGC loans, bankers will be willing to utilise the CGC’s schemes, if they are confident that claims will be met \(X_4\). The level of the CGC guarantee increased from 60 percent under the Special Loan Scheme to 70 percent under the Principal Guarantee Scheme (PGS). This amendment has not been incorporated into our model. The impact of the revised level of guarantee cover on utilisation is judged to be marginal, compared to the critical importance of the acceptance and prompt settlement of claims.

Prior to 1985, the CGC had processed 1,935 claims; only 429 resulted in payment. This aspect of the CGC’s operations received scathing criticism by Levitsky and Prasad (1987, p.56), who described the CGC as a passive institution which kept its liabilities to a minimum by rejecting claims on the grounds of technicalities. This situation also prevailed over the period from 1986 to 1993, when the CGC processed
a further 3,563 claims, totalling RM36.4m. However, only 1,505 claims, totalling RM9.3m, were paid; the remaining 2,058, totalling RM27.1m, were either rejected by the CGC or withdrawn by the banks.

The CGC cannot be expected to condone incomplete appraisal and monitoring techniques by the banks, yet the final payments in settlement of claims have remained low.

The aggregate figures in Table 4 conceal underlying improvements. For example, the levels of default were much higher for the earlier schemes than for the PGS; likewise, a higher proportion of claims processed has been paid for the PGS than for earlier schemes. In addition, a backlog of claims was cleared by 1991, and the processing is now up to date. Nonetheless, discussions with bankers in Malaysia suggest that they remain somewhat sceptical regarding the payment of claims by CGC.

In deciding upon a proxy variable for the settlement of claims (X₄), the critical relationship is between claims paid and claims processed - Col 6 divided by Col 5 in Table 4. As this ratio increases, we would expect bankers to be more inclined to utilise the CGC’s facilities, because there is greater prospect of a claim being paid.

**4. THE MODEL AND THE ESTIMATED RESULTS**

In this section, we develop a single-equation model that indicates an equilibrium level of utilisation. In essence, the relevant factors are isolated as demand or supply factors and the equilibrium utilisation level is then determined by a reduced-form equation. Our analysis is concerned with the volume of utilisation of the CGC’s facilities, although the estimated model, in fact, shows changes in utilisation as the dependent variable. However, it should be noted that the actual decisions on utilisation usually stem from the complex interaction of the factors discussed in Section 3.
Of the four factors affecting utilisation, we judge that $X_1$ and $X_2$ can be classified as demand and $X_1$, $X_3$, $X_4$ as supply factors. For the reasons discussed in Section 3.2, we have assumed that the availability of conventional bank credit would be heavily demand weighted during the period of our study, hence $X_2$ is treated as solely a demand factor.

Let the variables of our model be defined as:

- $X_1$: Cost of CGC compared to conventional bank loans.
- $X_2$: The availability of conventional bank credit.
- $X_3$: The default rate on CGC loans.
- $X_4$: Claims paid.
- $Y_1$: Total utilisation of the CGC facilities (demand side).
- $Y_2$: Total utilisation of the CGC facilities (supply side).

We first write:

$$Y_1 = f_1(X_1, X_2)$$
$$Y_2 = f_2(X_1, X_3, X_4).$$

At equilibrium:

$$Y_1 = Y_2 = Y$$

where $Y$ is the equilibrium level of utilisation of the CGC facilities.

Expressing (3) implicitly, we can write:

$$G_1 \left( \frac{f_1(X_1, X_2)}{Y}, \frac{f_2(X_1, X_3, X_4)}{Y} \right) = 0$$

or alternatively:

$$G_2(Y, X_1, X_2, X_3, X_4) = 0$$
The reduced form equation follows from (5) which is given by:

\[ Y = f_3(X_1, X_2, X_3, X_4). \]  

(6)

The linear form of the estimating equation will then be:

\[ Y_t = b_0 + b_1X_{1t} + b_2X_{2t} + b_3X_{3t} + b_4X_{4t} + U_t \]  

(7)

where \( b_0, b_1, b_2, b_3 \) and \( b_4 \) are parameters to be estimated. \( U_t \) is the error term which satisfies the standard assumptions of a linear regression model.

A series of experiments in estimating this model yielded, on both statistical and economic criteria, poor results. Hence, an alternative function using the same explanatory variables of CGC utilisation was specified in a linear form where the change in \( Y_t \) (CHY) was related to \( X_1 \), change in \( X_2 \) (CHX2), change in \( X_3 \) (CHX3) and \( X_4 \).

Algebraically, the linear model is expressed as:

\[ \text{CHY}_t = a + b_1X_1 + b_2\text{CHX}_2 + b_3\text{CHX}_3 + b_4X_4 + U_t \]  

(8)

The estimated model, using the Ordinary Least Squares (OLS) method on data relating to the decade from 1984 to 1993, is given by:

\[
\begin{align*}
\text{CHY}_t &= 1.92 - 0.93X_1 - 2.66\text{CHX}_2 - 0.95\text{CHX}_3 - 4.28X_4 \\
& \quad (3.16) \quad (3.58) \quad (2.17) \quad (2.91) \quad (2.33)
\end{align*}
\]

\[ R^2 = 0.85 \]

\[ \text{D.W.} = 2.43 \]

\[ n = 10 \text{ observations} \]

The estimated equation incorporates the values of the estimated coefficients, with their respective ‘t’ values shown in parentheses below. The coefficient of determination, \( R^2 \), and the Durbin Watson statistic are also presented.
In accordance with the analysis in Section 3, equation (9) produces the appropriate algebraic signs, except for $X_4$ - the ratio between claims paid and claims processed. This factor was found to have a negative relationship with utilisation rather than the anticipated positive relationship. In seeking an explanation for this apparent inconsistency, the answer probably lies with bankers’ perception and the effect of time lags. Many bankers still perceive difficulties in getting claims paid by the CGC; the negative impact of having claims rejected may still outweigh the improving ratio of claims paid to processed. Alternatively, the processing of the backlog of claims over 1990/1 may be exerting an undue influence in the model.

In the estimated equation, most of the coefficients are significantly different from zero at the usual 5% level of significance. The level of $R^2$, 0.85, is fairly high, indicating that the equation has explained 85 percent of the variation in the dependent variable. Thus, based on the level of $R^2$, statistically significant coefficients, and appropriate algebraic signs, it can be concluded that the model specifies changes in utilisation quite well according to economic and statistical criteria.

Table 5. ESTIMATED EQUILIBRIUM LEVEL OF CGC UTILISATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Equilibrium Utilisation (RMm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>n/a</td>
</tr>
<tr>
<td>1985</td>
<td>197.43</td>
</tr>
<tr>
<td>1986</td>
<td>62.65</td>
</tr>
<tr>
<td>1987</td>
<td>123.27</td>
</tr>
<tr>
<td>1988</td>
<td>53.22</td>
</tr>
<tr>
<td>1989</td>
<td>74.90</td>
</tr>
<tr>
<td>1990</td>
<td>315.84</td>
</tr>
<tr>
<td>1991</td>
<td>333.70</td>
</tr>
<tr>
<td>1992</td>
<td>183.73</td>
</tr>
<tr>
<td>1993</td>
<td>245.71</td>
</tr>
</tbody>
</table>

Finally the estimated form of the equation is applied to our sample data to determine the equilibrium level of utilisation of the CGC facilities for the years 1984 to 1993. These results are shown in Table 5.
In order to evaluate whether our estimated model has tracked the behaviour of actual data, an ex-post simulation test was performed over the estimation period. Historical values were used for the exogenous variables in the estimated equation. Figure 1 gives the actual and simulated values for utilisation of the CGC’s schemes.

**Figure 1. ACTUAL AND SIMULATED CGC UTILISATION FROM 1984 TO 1993 (MILLION RM)**

The simulated values seem to have tracked the historical values rather well. At some places, they also indicate the same turning points as the actual values. Another way of testing the accuracy of the estimates is to refer to the Theil’s inequality coefficient (U), which will fall between 0 and 1. If the value of U is near zero, it indicates that the simulated and the actual values are close to each other. The value of U for our model is 0.13 which is relatively low. Based on both the simulation graph and the Theil’s inequality test, therefore, we can conclude that the predictive performance of our estimated model is reasonably accurate.
5. CONCLUSIONS

The analysis presented shows the quantitative relationship between the utilisation of the CGC’s facilities and a set of interrelated economic and risk factors. Since some of these factors are qualitative in nature, it was necessary to undertake a search for rational proxies to be included as explanatory variables. The ex-post simulation exercise undertaken on the final version of our estimated model (equation 9) suggests that there is a highly systematic relationship between utilisation and the proxies representing the relevant factors.

However, it has to be acknowledged that this type of analysis has never been undertaken before, hence our conclusions can only be tentative. The selection of proxy variables is critical. We are aware that some factors influencing utilisation have not been incorporated into the model, notably the guidelines imposed by Bank Negara. A quota system is rarely, if ever, employed for loan guarantee schemes in other countries. Bankers in Malaysia must have been tempted to approve inappropriate CGC loans, or to substitute CGC for conventional bank loans, simply to meet demanding quotas. Another omission from our model is the distortion to financial markets arising from the preferential interest rates applied to both CGC and SSE lending prior to 1989.

The failure of the estimated equation to accurately simulate actual utilisation in the years before 1988 suggests that utilisation was very much quota driven at that time. Despite the continuing existence of the guidelines for CGC loans, decisions on utilisation over recent years appear to have been increasingly taken on the basis of the rational economic and risk factors incorporated in the model.

The model highlights the importance of allowing the banks to earn a reasonable return on CGC loans, to encourage utilisation of the CGC’s facilities. There has also been a generally negative relationship between the availability of conventional bank credit and CGC loans; the latter should ideally be restricted to firms which cannot obtain private sector funding. Finally, the importance of prompt and efficient settlement of default claims was highlighted in the model.
The terms and conditions of the New Principal Guarantee Scheme address many of the above issues. For example, the banks receive a return of 2 percent over Base Lending Rate on New PGS loans. The Bank Negara guidelines, issued to the commercial banks in respect of CGC loans to be granted, are much more achievable than in the past. As a consequence, bankers will be under less pressure to approve CGC loans simply to meet their quotas. The New PGS has been extended to finance companies, to take account of the fact that smaller enterprises in Malaysia are increasingly turning to non-bank sources of external finance. Finally, the procedures to be followed in the event of the borrower's default have been clearly specified in the New PGS.

Overall, utilisation should increase with the new PGS, although our model would have to be adapted for the conditions of the Scheme before a formal prediction on volume can be put forward.

REFERENCES


