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INFORMAL FINANCIAL MARKET AND THE
METAL PRODUCTS SECTOR IN BANGLADESH

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PREFACE

As in many developing countries, the informal financial markets in Bangladesh are alleged to provide the bulk of the credit needs of the economy, particularly to the small scale sector which has little access to the formal (institutional) sources of credit. Despite various attempts to control and regulate informal financial transactions, their scale and pervasiveness of operations have expanded unabated. In the long debate on the usefulness and the performance of the informal financial market operations, and associated issues like the determinants of interest rates, inter-linkages among transactions, etc., some have labelled the markets as usurious, as 'fettters on growth' while others have considered them as desirable adjuncts to the process of brisk growth in trade and commercial operations. Corresponding to these two views, two diametrically opposite policy frameworks are envisaged; the first aims at controlling and ultimately eliminating informal financial transactions while the second aims at expanding the fund flows and increasing the competitiveness in the informal sector. Both lines of arguments however agree that there are imperfections in informal financial markets and that the interest rates usually obtaining in these markets are on the higher side.

Despite the considerable operational significance of the issues involved, and the implications these have for developing an optimal policy environment, information on these markets in Bangladesh remain highly inadequate. The study on the informal financial markets in Bangladesh, conducted by the Bangladesh Institute of Development Studies (BIDS) and sponsored by the Asian Development Bank and the US-Agency for International Development (US-AID), attempts to fill-up this gap in information and analyse some select issues such as the growth and the structure of the markets, formation of interest rates, mobilisation and use-efficiency of resources. A series of case

studies have been conducted under the project; all of them are now being reproduced as working papers. A survey to collect some primary level information on the markets and the characteristics of lenders and to know more about the organizational aspects of informal finance gathering and distribution has also been conducted. The survey findings along with those of the case studies are being used to prepare an overview paper on the informal financial markets in Bangladesh.

In this particular study, Dr Debapriya Bhattacharya examines the role of IFM in the small engineering sector in Bangladesh. This sector has had some growth in the past, and it is argued to have substantial growth potential. The study, based on primary investigation of a number of such units in Dhaka, reveals that finance indeed is the major constraint on the fuller utilisation the growth potential of the sector. The study examines the financial links of the small scale units in their totality, from the formal sector financing to advances for raw material purchases. The network of institutional finance, incidence, size and purpose is studied along with informal financial transactions. The demand for credit of the sector is estimated. The study also puts forward a proposal aiming at expanding and improving the efficiency of IFMs in a way such that this vibrant sector can indeed realise their full potential.

Atiq Rahman
Project Director

CHAPTER 1

INTRODUCTON

1.1 The Problem Setting

The savings of an economy are usually assumed to find their way into real investment either through self-financing (i.e. the agent responsible for the saving also being responsible for the investment), or via one integrated financial sector (i.e. bank or other financial intermediaries). But the financial sector of a typical developing country comprises of at least two not-integrated components, which are usually termed as "formal" and "informal" markets.^{1/} Whilst informal credit market (ICM) happens to be an important integral component of the later, it is being increasingly accepted that when strategies for more rapid and balanced development of the developing countries are under consideration, financial policies must take into cognisance the role of the ICMs which it might play in terms of promoting mobilisation of domestic resources and maximizing their allocative efficiency while channelling them into investment, subserving the equity objectives. However, it is also true these aspects of this type of financial intermediations in the developing countries (i.e. fundamental role of the ICM, the factors which unite its effectiveness and the benefits which might accrue from improving it) have received scant attention in the concerned literature.

Existing literature, dealing with optimality or non-optimality of financial markets, the possible sources of inefficiency and the appropriate policy responses, is essentially based on two sets of (somewhat opposing) beliefs. Proponents of the first set basically draw upon the traditional neoclassical model, according to which government intervention in the financial market creates problems, so if government lifts all restrictions, the market will optimally allocate funds among different categories of borrowers.^{2/} On the

other hand, the institutional school posits that feudal market structure happens to be one of the significant characteristics of many developing economies, where exploitative relationships extract surplus through usurious interest rates. Thus, doing away with these forms of credit institution may only correct the situation.^{3/} However different variations of these two sets of beliefs, including institutional variation of traditional neoclassical model, may be also found in the literature.^{4/} Attempts have been also made to give theoretical underpinning to the introduction of transaction costs of financial intermediation in a traditional neoclassical model,^{5/} as well as to provide a unified framework for analysing credit markets with all their imperfections (which are deemed to differ fundamentally from market for ordinary goods and services and where collateral plays a vital role) and effect of governments policy on their efficiency.^{6/}

But, till quite recently, whatever literature relating to developing countries were available on the subject, they focussed exclusively on rural credit markets and the determinants of their interest rates. Whilst the issue of "unorganised financial markets" were taken up by U Tan Wai and A. Bottomley as early as late fifties and early sixties,^{7/} and whilst it has been suggested by concerned researchers through various estimates that the value of total loans outstanding in the unorganised money markets have gone up in most developing countries in the fifties and sixties,^{8/} serious attempts to explore the nature and magnitude of the UICM were only initiated in late seventies and early eighties. Thanks to the works of the T. Timberg and C.V. Aiyar on India and J.M. Dowling on Korea, reliable estimates exist relating to the share of informal credit in the urban areas of these two countries.^{9/} Besides these two Asian country studies, mention can be made of a Latin American case study on Peru.^{10/} Thus, it has to be recognised apart from these honourable exceptions, systematic rigorous investigation of UICM with all its peculiarities in countries concerned is yet to be done so as to evolve a common model of understanding about its basic functional features and the role

it is envisaged to play in the context of macro-economic issues. This line of inquiries becomes more pertinent when research on ICM as whole is embarking upon a stage of regional synthesization.^{11/}

In Bangladesh also, research into ICMs is still couched at its initial stage.^{12/} Whilst there are some studies based on micro-surveys of rural informal credit markets (though only in terms sources of loans and their uses, borrowers' profile and the interest rates charged), UICM remains to be a totally new theme of investigation. Though the existence of finance broker and traders and financial interest in the urban economy of the country is no secret, yet there are no reliable evidences about the size, structure and composition of UICMs in Bangladesh, their trends of evolution overtime, terms and condition of lending including level of interest rates and collateral needs, sources and uses of fund, profile of the major participants and the horizontal and vertical linkages of these financial intermediaries in the UICMs with formal financial institutions. As there are indications that UICMs are significantly segmented along various patronages and lineages and moreso along trading and production interests, for any meaningful economic analysis of the working of UICMs in Bangladesh, particularly at the present state of knowledge, it becomes necessary to capture all the nuances of credit relation through in-depth case-studies of various segmental categories.

Reasons for paying special attention to the small engineering and metal fabrication sector in Bangladesh, while investigating the operation of informal credit/finance transactions in the urban economy of the country hardly need to be emphasised. The sector is linked to other industries not only by its products which most of them use, but by its services which all of them need. Because of the variety of its products and services and the universal nature of its productive activities, the sector is normally able to provide efficient import substitution. But there are reasons to believe that small-scale and cottage industry (SSCI) as such, and the small engineering and metal fabricating firms in particular are starving for capital in addition to many other external and internal problems, brought about

by size related issues. Due to the high turnover of these units and rather high capitalisation value of the units in the current context of inadequate development of the formal financial sector to cater to the needs of the small enterprises, these firms have to resort to informal sector for meeting their financial requirements.^{13/}

The relevance of the present study should be judged in the spirit of the foregoing paragraphs.

1.2 Objective of the Study

The present case-study is a component of a larger study on Urban Informal Financial Market (UIFM)^{14/} in Bangladesh, taken up by the Bangladesh Institute of Development Studies (BIDS), which in its own turn is a part of a yet bigger study on the Informal Financial Market in Bangladesh (comprising of both urban and rural components).

In order to achieve the general objectives of the broader research programme, attempts have been made to trace the general characteristics and distinguishing features of the UIFM through various economic activities and in this connection the present study seems to capture the functional attributes of UIFM with its varied contracts and modalities in the small engineering and metal fabrication sector in Bangladesh.

Briefly, the specific points of inquiries of the study are as follows:

- i) the present status and future potential of growth of the sector;
- ii) the input-output characteristics of the sector;
- iii) the role, nature and magnitude of informal financial market in the sector;
- iv) institutional credit and its interface with informal financial market in the sectors;

- v) Working capital demand investment, and income distribution aspects of financial transaction in the sector.

On the basis of the findings of the above mentioned points, the study envisages to sketch a set of recommendations about the development of an optimal financial regime to serve the specific needs of this sector, with emphasis on the possible modes of development of the informal financial sector.

It should be pointed out that, in the total absence of definite quantitative informations regarding some of the major issues mentioned above and as well as intertemporal information constraints, the major thrust of the study would be establishing and assembling facts, tracing linkages relating to informal credit relations in the small engineering and metal fabrication sector.

1.3 Some Conceptual Issues

In making provisions for clarity of understanding of the issues investigated, some definitional demarcations are necessary.

Firstly, a precise, common concept of ICM is yet to emerge. With the realisation that ICMs also exhibit significant features of organisation and self-regulation, the terminological distinction between 'unorganised' and 'organised' credit markets has largely been abandoned. In the contemporary literature the ICMs are distinguished by the absence of regulation in terms of registration, reporting on audit, restriction on lending or borrowing rates, reserve requirements, etc. For the purpose of our study, we may accept all these criteria for identification of ICM operation, although for a different purpose it may be possible to delineate across somewhere in between the different degrees of regulation. It must be added that here by IFM we primarily mean informal markets of cash finance (rather than credit in the form of goods).

Secondly, terms 'formal financial market' and 'institutional finance' have been used synonymously in this report. Though the modalities through which credits provided by the non-governmental voluntary organisations (NGOs) have some resemblance of the ICM operations, they have been included in the category institutional sources of finance.

Thirdly, the present study concerns itself only with the informal credit to the extent it finances trade and production in the sector, i.e. it does not take into consideration the consumption loans, if any, taken by the entrepreneurs.

The other set of definitional problem arises regarding classification of enterprises under the small engineering and metal fabrication sector. This issue has been separately dealt with in Chapter 2.

1.4 Study Methodology and Data

Data and information used in the present study came from three main sources: (i) published survey results and studies relating to the engineering and metal working sector; (ii) a special sample survey of small engineering and metal fabrication sector; and (iii) conversation to the knowledgeable informants.

Amongst the published secondary materials, the main points of reference for the study were the Survey Report on Small Industries of Bangladesh conducted by BSCIC in 1978-79 and published in 1982, census of Manufacturing Industries conducted by BBS in 1980-81 published in 1986 and study on Small and Medium Scale Metalworking Industries, Phase Two, Bangladesh and Sri Lanka, conducted by Technonet Asia and JICA in 1979-80. A number of studies of the steel and engineering subsectors carried out under the Trade and Industry Policy (TIP) Reform Programme and Studies on Rural Industries Development (SRID) were consulted to gather insight about the sector.

In accordance to the guidelines provided in the terms of reference (TOR) of the study, the respondents of the sample survey were drawn from the units situated in the old Dhaka city areas (particularly Tipu Sultan Road and Dholai Khai). Unfortunately, only tentative estimates of the number of units located in the survey areas (registered and not registered with BSCIC) were available, which were also to some extent dated in a situation when the sector is demonstrating relatively high rate of growth.^{15/} A total enumeration of the units in the survey area was beyond the scope of the present study. Under the circumstances, a total number of 60 sample units were randomly selected: 45 from Dholaikhal and 15 from Tipu Sultan Road. To elicit relevant information and data structured questionnaire in Bangla was administered to the sample units by the author himself, assisted by two trained research associates. However, out of the 60 administered questionnaires, 9 schedules could not be processed due to incomplete and inconsistent answers.^{16/} The survey was conducted during the period of December 1986 to January 1987.

Besides the sample survey, a significant number of conversational interviews were carried out to have a closer look into the complete chain of production and trading in the sector. Firstly, this group of informants included relevant officials in the BSCIC, particularly in the Department of Promotion, Extension and Sub-contracting and the office-bearers of the Dhaka District Dholaikhal Small Parts Manufacturing & Repairing Factory Owners' Group and Tipu Sultan Road Small Parts Manufacturerers Association, the two major organisations of the entrepreneurs in the area. The second category of people were some of the major actors in the informal credit relation process, e.g. input supplier creditor, output trader creditor, entrepreneurs' association boss creditor, engineering workshopowner creditor, etc. There was a special drive on behalf of the research team to trace back to the primary sources of fund and in this pursuit identity of only 4 creditors, having no production or trading links with the sector, (one of whom happened to be a professional money lender)

could be established. However, due total aggressive non-cooperation on their behalf not much meaningful responses could be gathered relating to lenders' perspectives.

Regarding quality of the data, one should bear in mind, that the respondents often could not give correct answers to some of the questions as they had no accounting system and most of the answers were given by memory recall. Nevertheless, one could assume that the bias created in this way was uniform with zero mean and did not affect the sample in a significant way. But two other nuances had a bearing on the answers of the respondents. Firstly, there were attempts of exaggeration brought about by expectation of assistance and secondly, wilful hiding of facts out of fear (e.g. misunderstanding that the production statistics and financial figures might find their way to the income tax department). However, utmost care has been taken for building up of a good rapport with the respondents and informants so as to neutralize their scepticism and reservations.

CHAPTER 2

SMALL ENGINEERING AND METAL FABRICATION SECTOR IN BANGLADESH:
AN OVERVIEW

2.1 Historical Background of Metal Working and Engineering Sector in Bangladesh

Though Bangladesh is not bestowed with basic natural raw materials needed to accelerate the growth of the metal product sector yet the existence of the sector may be traced back through centuries in the country when it was composed primarily of small shops and cottage level factories catering to the needs of households and agricultural markets in specific ferrous and non-ferrous metal products. However, the present metalworking and engineering sector originated in early 1960s within the industrial policy format of the erstwhile Government of Pakistan when it was planned and contracted for some large basic plants in the heavy engineering and electrical products fields which were to operate as state enterprises and at the same time establishment of private units were encouraged which were, almost invariably, organised and operated by the West Pakistanis. In the beginning of the 1960s, the government also started promoting the cottage and small scale firms within the metalworking industries. Some developmental agencies were either setup or improved on to be able to promote and assist the sector. But the combination of the Bonus Scheme, tariffs, import quotas, and export taxes and subsidies policies, prevailing at that time, greatly distorted the relative prices, resulting in distorted, unbalanced development of the sector. In 1969 the number of persons employed in the engineering (metal production, manufacturing machinery, electrical machinery and transport equipment) sector was 10,969, the value of output was Rupees 1,61,087 thousand and value added - Rupees 67,310 thousand at the current prices.^{17/}

During the War of Independence (1971), many of the West Pakistani entrepreneurs left the country and their plants were taken over by the Government of Bangladesh and the engineering sector followed

the pattern of collapse and recovery, which accounted in the Bangladesh economy, generally, between 1969 and 1976.

2.2 Composition of the Metalworking and Engineering Industry in Bangladesh

The metalworking industry in Bangladesh includes production/servicing of agricultural implements, small power engines, transport equipments/components, machine tools/elements, electrical machineries/spares and various other types of household products. Presently the engineering and metal fabricating industries are defined under the International Standard Industrial Classification (ISIC) or Bangladesh Standard Industrial Classification (BSIC) of 1980 in the following four sections:

- i) Fabricated metal products (381), making products such as cutlery, handtools, general hardware, furniture and fixtures primarily of metal, structural metal products, e.g. window frames, other fabricated metal products, such as nails, nuts, bolts, cooking utensils, tin containers, metal stamping
- ii) Machinery (other than electrical) (382), making products such as: engines and turbines, agricultural machinery and equipments, metal and woodworking machinery, special industrial machinery (e.g. mining and textiles), office computing and accounting machine, other mechanical equipment such as pumps, compressors, the repair of all kinds of machinery.
- iii) Electrical machinery, apparatus, appliance and supplies (383), making products such as electrical industrial machinery and apparatus, radio television and communication equipment, electrical appliances such as dry batteries, electrical appliance accessories, electric lamps.
- iv) Transport equipment (384), making products such as ship building and repairing activities, railroad equipment, motor vehicles, motorcycles and bicycles, aircraft, transport equipment not

classified elsewhere (e.g. wheel barrows, baby carriages, invalid carriages, and parts).

According to the last Census of Manufacturing Industries of 1980-81, the number of establishment in the engineering and metal fabrication sector (as described above) was 423, where 27,367 persons were engaged, and the value of gross output and value added at factor cost were Tk. 3,064 million (7.5 per cent of gross output of the manufacturing sector) and Tk. 754 million (7.9 per cent) of the total added in the manufacturing sector) respectively.^{18/}^{18/}

According to the CMI of 1981-82, the number of metalworking and engineering enterprises in the country was 473 and the number of persons engaged in the sector was 29,426, whereas the value of the gross output and value added at factor cost were correspondingly Tk. 3,227 million (6.8 per cent of the gross output of the manufacturing sector) and Tk. 648 million (6.3 per cent of the total value added in the manufacturing sector),^{19/} thus denoting a trend of expansion of the sector in absolute terms.

But, whatever growth trend the abovementioned figures relating to the period 1980-81 and 1981-82 may express, they grossly understate the status of the sector and under represents its contribution in the national economy when considered in totality. The metalworking and engineering industry in Bangladesh today is composed of cottage, small and large-scale establishments. The figures mentioned above relate primarily to the large scale enterprises and to the small-scale firms, to the extent that they are registered under the Factories Acts. On the other hand, cottage industry type enterprises of the metalworking and engineering sector, which are essentially rural based, have remained beyond the purview of the CMI.^{20/}

Within the context of the country, a cottage industry firm represents the non-mechanised units performing the metalworking processes basically by hand or simple tools. Generally they are classified as non-electrical power consuming units relying solely

on traditional production techniques. A survey in 1966 revealed that there were 24,000 such units in existence, employing nearly 50,000 workers. Whilst majority of the units in this component of the sector are engaged basically in the manufacture of agricultural tools and implements, some units concentrate on household ornaments (e.g. table wares) and goldsmithy. Tinsmith firms engaged in production of tin containers, trunks, lanterns, etc. also figure significantly.

Small-scale industries, on the other hand, are characterised by the low-level technologies, some electrical power inputs and a maximum fixed capital investment in machineries/equipment of not more than Tk. 2.5 million. In 1974, according the Department of Industries, there were 2,000 registered small firms and about 1,000 more non-registered units. Majority of the estimated 3,000 units were deployed in Dhaka and around other major urban centres, obviously predicated by existence of infrastructural facilities.

The large-scale industries are characterised by relatively higher level of technologies, employing large work-force size, consuming electrical/thermal power and having a fixed asset investment above Tk. 2.5 million level. These large-scale enterprises, although very small in number, are public sector enterprises, which capture a major portion of the business volume of the sector. However, many of these large enterprises, e.g. Machine Tools Factory (with an investment of Tk. 1,200 million); General Electric Manufacturing (Tk. 1,100 million investment) and some shipyards are operating in underutilised capacity condition due to limited market size, whereas the small and cottage industries sectors remain deprived of basic production inputs and had to resort to importation of basic machinery items.

Unfortunately, besides some fragmentary evidences there are no reliable current statistics which can aptly describe the engineering and metalworking sector of the country.

2.3 Contribution and Performance of the Metalworking and Engineering Sector

According to the study on small and medium metal working industries in Bangladesh and Sri Lanka, carried out jointly by the TECHNOMET ASIA and JICA for the BSCIC and Industrial Development Board, Sri Lanka, the sector as a whole has contributed about Tk. 10,697 million at 1972-73 constant price to the country's GNP. Out of this 38.4 percent (Tk. 4105 million) and 34.7 percent (Tk. 3719 million) represent the contribution of the small and large scale industries respectively, whereas the cottage industries accounted for the remaining 26.9 percent (Tk. 2873 million). These figures probably refer to the year 1979-80.^{21/}

Within the metalworking and engineering sector, when the relative efficiency of the large, medium and small subsectors is analysed in terms of input utilization, it appeared that scarce input, i.e. capital, is more efficiently used by small firms vis-a-vis the large counterparts. This better performance by the small metal firms are substantiated by their high wage per unit capital value and higher investible surplus.

It is usually reckoned that the BBS figures relating to the manufacturing industries underestimate the contribution of the sector to the national economy as it fails to capture a significant portion of the units operating in the unorganised and/or rural sector. Notwithstanding this fact the estimate provided by the JIC/TECHNOMET study (Tk. 10,697 million) seems to be grossly on the high side as the contribution of the total industry sector to the GNP in 1979-80 (in 1972-73 constant price) was Tk. 7,210 million.

It has already been mentioned that the CMI data do not allow us to make a comprehensive assessment of the sector. In that case we may supplement the CMI figures with the Small Industries Survey (1977-78) and Cottage Industries Survey (1980-81) of BSCIC. However,

TABLE 2.1

PERFORMANCE OF THE SUB-SECTORS OF THE ENGINEERING
INDUSTRIES IN SELECTED ECONOMIC MEASURES

Economic Measures	Sub-sectors of Engineering Industries		
	Large	Small	Cottage
1. Value added per worker	5706	2336	270
2. Capital Labour ratio	9892	1357	149
3. Capital value added ratio	1.734	0.583	0.532
4. Worker per unit	191	8.15	3.3
5. Annual wage per worker	1268	761	-
6. Wage per unit capital	0.128	0.558	-
7. Surplus per unit of capital	0.449	1.156	-

Source: JICA/TECHNOCENT Report p. 13.

clearly there is room for overlap between CMI coverage and BSCIC coverage, because if any registered factory with 10 or more employees has fixed assets not exceeding Tk. 2.5 million in value, it is likely to be covered by both.

According to the Cottage Industries Survey of BSCIC, there were 23,191 units (7.2 percent) in the manufacturing of fabricated metal products, machinery and equipments sector in 1977-78, where the size of employment was 60,148 persons (66 percent). The annual sales value of the products of the sector was Tk. 9,303 million (9.3 percent) and value added Tk. 443.4 million (9.1 percent).

On the other hand, the Small Industries Survey stated that there were 2,389 units (10 percent) in the basic metal and fabricated metal industries sector in 1980-81 where 39,646 persons (12.3 percent) were engaged. The value of goods produced annually was Tk. 395.6 million (10.4 percent) and value added Tk. 64 million (7.8 percent).

As the reference period of the two surveys are different, it becomes hazardous to add up the findings of the surveys and relate it to the large-scale sector through CMI data (as residual) to derive national estimate of the sector. Under these circumstances it becomes necessary to fall back to other secondary materials and adapt some recalculation techniques.

A study on the small and cottage industries of Bangladesh, carried out as a part of the Third Five Year Plan Study Report series, established that in 1980-81 the value of output and value added in the metal product sector (including transport equipments, gold and black-smithy) in 1980-81 was Tk. 1494.2 million and Tk. 738 million respectively.^{22/} If we assume that the percentage shares of the three components of the sector stated by the JICA/TECHNET Study are fairly reasonable, then the contribution of the large-scale metalworking industries would have been Tk. 392 million. Thus, the contribution of the total sector to the national income was around Tk. 1,130 million

in 1980-81. If the rates of growth of the metalworking sector and the national economy as a whole over the period 1981-86 are assumed to be similar then the amount of GDP produced in the sector in 1985-86 is estimated to be around Tk. 2,313 million (0.48 percent of the GDP).

However, it has always to be borne in mind, that this is quite an off-hand estimate and one of the main limitation of this estimate is that it has to draw upon three different sources of information, where the activities classified under the metalworking or metal fabrication sector were not totally identical.

This situation once again points out the necessity of precisely defining the small engineering and metal fabrication sector for the purpose of our study.

2.4 Defining the Small Engineering and Metal Fabrication Sector

Despite some limitations the BSCIC Survey Report on Small industries of Bangladesh (1978), appears to us relatively comprehensive, upto date and reliable for the purpose of our study. For the benchmark information we can draw upon the 2 of the 9 broad sectors, (viz. Basic Metal Industries and Manufacture of Fabricated Metal Products) into which the small industries sector has been divided in the Report.^{23/} Under these two sub-sectors a total number of 39 types of industries have been classified. The types of units operating in these 39 types of industries and falling under the Census Survey had the following features:

- i) the unit was a manufacturing unit;
- ii) the unit was privately owned;
- iii) the unit was be within the investment ceiling of fixed investment of Tk. 2.5 million;
- iv) The unit used some type of power for any production process or for rendering any industrial services employing 10 or more

but less than 20 workers, or a unit employed 20 or more workers but not using any mechanical motive power.

However, taking into cognisance the objectives and scope of the present study, it was felt that so as to minimise the ambiguity in defining the sector under study it is necessary to more precisely identify the activities. Thus, throughout the present study, small engineering and metal fabrication sector has been defined as those having the features mentioned above, performing one or more of the following operations: casting, forging, moulding, plate work/welding, plating, machining, machine assembly and press work.

Since out of the 2389 units listed under the basic metal and fabricated metal industries in BSCIC survey 1,120 units were light engineering works (being fourth most major type of small industries, 4.7 per cent of the sector), special emphasis has been given to these types of enterprises, which was in total consonance with the terms of reference of the study.^{24/} Moreover, during the study on the fabricated metal sector, basically the units producing ferrous products have been considered.

2.5 Potential and Prospect of the Small Engineering and Metal Fabrication Sector

The potential of the small engineering and metal fabrication sector obviously lies in the realisation of the considerable backward and forward linkage effects, which the sector exhibits. It is particularly true if the linkages existing with the agricultural sector can be strengthened through developing indigenous production capacities for agricultural machineries by instituting proper policies. Efforts, are likewise, necessary to establish durable linkage of the sector with their large-scale counterparts through sub-contracting programmes.

By exploiting the unutilised capacities in the sector for producing agricultural machineries, spares and other basic production inputs, the country can save substantially its scarce foreign exchange resource, as the country is heavily dependent on the importation scheme of these items. There are even limited export possibilities of some products of the sector, where it exhibits comparative advantages.

The sector is ideally suited as a vehicle for the transfer of improved technologies and moreso for production of technology appropriate to the need of the country.

Opportunities exist for labour intensive metal fabrication shops like ship repairing and dockyard facilities, conducive to the need of riverine country like Bangladesh. Through these types of activities and others, the sector as a whole may also go for diversification. The assembly industries (i.e. mechanised rickshaws, scooters, motor cycles, motor vehicles, etc.,) although at its infancy stage, are demonstrating significant promise.

It is a sector that furthers employment, locational and skill acquisition objectives.

But the sector has some intrinsic problems as well. It is almost totally dependent on imported raw materials. A small amount of mild steel billets are locally available but not in sufficient quantity. The only steel mill of the country is not even in a position to utilise more than half of its rated capacity (3 million tons). The deficit in local production of steel billets are met through import and scarp recycling, resulting in chronic escalation and instability of the prices of basic raw-materials, which is passed on downstream.^{25/} Thus, although an ample and growing demand exists for a wide variety of engineering goods, these high costs make it difficult for the present and potential domestic producers to compete effectively with imported engineering goods, some of which are lightly taxed whilst other come in under a variety of trade and donor agreement.

Lack of adequate finance is another overriding constraint to the growth and expansion of small engineering and metal fabrication sector. General paucity of capital, defective institutional lending policies and dualistic features of the capital market are believed to be the main reasons for the financial problems of the enterprises of the sector.

Whatsoever, it is reckoned, if proper policies can be initiated and adequate institutional support can be lent, the metalworking and engineering industries in Bangladesh held good prospects for further development and the economy as a whole stand to gain from it. The remarkable growth which the sector has attained over a short period of time, even in a not so conducive environment, bears testimony to it.

CHAPTER 3

ORGANISATION, PRODUCTION AND PRODUCTIVITY IN
SMALL METALWORKING ENTERPRISES

This chapter describes the major findings of the study on characteristics of the small engineering and metalworking enterprises with regard to background of the entrepreneurs; types of production process used and product mix; technology and capital, labour and employment; inputs, value added and productivity.

3.1 Socio-economic Correlates of the Entrepreneurs

In studying the economics of a particular industrial sector in the context of development needs of an economy it is important to assess the entrepreneurial supply situation. Keeping in view that the entrepreneurial supply situation is a function not only of economic inducements but also of a number of sociological, psychological and other non-economic variables, the present study gathered some relevant information relating to the background of the entrepreneurs.^{26/}

3.1.1 Distribution of the entrepreneurs by age group

As Table 3.1 reveals that while 59 per cent of the respondents belong to the age group 30-40 years, the proprietors of the small engineering and metalfabricating units are overwhelmingly (84 per cent, if we take 40 years as the cut off point) young. Only 4 per cent of the proprietors are of the age group 50 years and above. Obviously it is a reflection of the encouraging entrepreneur supply situation as it seems more new entrants are coming into the sector. On the other hand, a young stock of entrepreneurs denote they are handicapped by absence of long standing experience.

TABLE 3.1

DISTRIBUTION OF THE ENTREPRENEURS BY PRESENT AGE

Age	Number	Per cent
20 - 30 Years	13	25
30 - 40 Years	30	59
40 - 50 Years	6	12
50 Years +	2	4
	51	100

When we consider the target age group of population who are potential new incumbents, what is perhaps more important is not the present age of the proprietors but the age at the time they started or took over the business. It has been calculated that the entry age of almost 80 per cent of the proprietors have been less than 30.

Amongst the respondents there were no female entrepreneurs and as a whole no female proprietor was observed by the study team in the sector.

3.1.2 Distribution of entrepreneurs by level of education

It is often argued that education is a factor which enhances the entrepreneurial qualities. According to Table 3.2 there are no entrepreneur who did not have any sort of formal education, though

majority of them (58 per cent) do not have complete secondary education. But a significant portion (14 per cent) of the entrepreneurs do have higher and specialised technical education. When compared to the general literacy situation prevailing in the country it is quite evident that the sector is endowed with a big set of highly educated entrepreneurs. Even when compared with the educational level of the proprietors of other urban industrial activities, it may be observed that the proprietors of the small engineering and metalworking firms are relatively more educated.^{27/} Existence of entrepreneurs with specialised technical training (one of the respondents was a graduate from the Engineering College) is another positive aspect which has to be taken note of.

TABLE 3.2

DISTRIBUTION OF ENTREPRENEURS BY LEVEL OF EDUCATION

Level of education	Number	%
No formal education	-	-
Upto primary	14	27
Primary to Secondary	16	31
Secondary and Higher Secondary	14	27
Above Higher Secondary and Specialised Technical Education	7	14
	51	100

No doubt a better educated entrepreneur will be able to take relatively more advantage of the institutional sources of finance as they require lot of documentation and interaction with the bank and administration.

3.1.3 Social background of the entrepreneurs

The effect of the social background on entrepreneurial response and performance is a much discussed issue in the literature on entrepreneurship. In the study for social background of an entrepreneur we have basically considered the occupation of the father. At the same time we tried to establish whether the father of entrepreneurs belongs (or belonged) to the rural or urban surrounding.

As can be seen from Table 3.3 the entrepreneurs of the small engineering and metalworking firms have a distinctive urban biased family background. In a predominantly agrarian country with a very low level of urbanisation, only 33.3 per cent of the fathers of the entrepreneurs hail from rural area, whereas 66.7 per cent of them are urban based.

On the other hand, the table reveals that there is considerable intergenerational occupational mobility. Only 4 (7.8 percent) out of 51 had any industrial activity tradition in the family. But it is significant that 3 (5.9 percent) out of these 4 entrepreneur's fathers were associated in various forms with small engineering workshops. Though at the national level it is observed that agriculture as an occupation is gradually declining, but the table indicates that the owners of the small engineering and metalworking units are basically second generation of people employed in non-farm activities.

At the same time, it should be noted that a overwhelming proportion (at least 65 per cent) of the entrepreneur came from low income group.

TABLE 3.3

SOCIAL BACKGROUND OF THE ENTREPRENEURS

Occupation of the father of the entrepreneur	Number	Per cent
I. Rural	17	33.3
a) Agriculture	17	33.3
i) Middle & rich peasant	5	9.8
ii) Poor peasant	12	23.5
II. Urban	34	66.7
a) Service	15	29.4
i) High paid	3	5.9
ii) Low paid	12	23.5
b) Business	13	25.5
i) Big	4	7.8
ii) Small	9	17.7
c) Manufacturing	4	7.8
d) Construction	2	3.9
	51	100.0

Obviously, all these features have serious implications on the performance and perceptions of the entrepreneurs and to some extent became the determinant of their problems. For example, it is known fact that in a status conscious society with its distorted market economy, entrepreneurs with humble social origin confront relatively more problems in having access to finance.

3.1.4 Occupational structure of the entrepreneurs

All of the entrepreneurs interviewed informed that running their respective units is their primary occupation. However, according to our observation this is not entirely the reality. It is of course true that almost all of the entrepreneurs are either physically involved in the production processes or full-time engaged in the management of the enterprise, but it can be gathered from other knowledgeable sources (usually the workers of the unit or owners of close by units) that a number of proprietors were engaged in various trading activities which did not have any link with the small engineering and metal fabrication sector. Deeming that this issue is not very important for the purpose of our study, the study team was satisfied to know that none of the respondents were engaged in money lending activity as economic pursuit.

3.1.5 Mode of acquisition of the firms by the entrepreneurs

Table 3.4 shows the breakdown of the small engineering and metal-working units by mode of acquisition by their respective owners. As it can be seen from the table that the overwhelming majority (82 per cent) of the entrepreneurs became owner of their units by establishing them.^{28/} Whilst, 16 per cent of the entrepreneur came into effective control of the enterprises by change of ownership, only 1 proprietor (2 per cent) inherited the firm. Accordingly we find that, while there were 3 respondents (5.9 per cent) who had metalworking activity as family tradition, only one actually inherited such an enterprise.

TABLE 3.4
MODE OF ACQUISITION OF THE UNITS BY THE PROPRIETORS

Mode of Acquisition	Number	Per cent
By inheritance	1	2
By purchasing	8	16
By establishing	42	82
	51	100

3.1.6 Year of establishment of the enterprises and year of acquisition by the entrepreneurs

A general indication of the situation in an industry is usually expressed by the rate of growth of number of enterprises. Other things remaining same, a higher growth rate of industrial enterprises would imply a more favourable entrepreneurial supply situation. Table 3.5 gives the distribution of sample enterprises by year of establishment. As can be seen from the table only 9.8 per cent of the enterprises were established before 1971 with the oldest one dating back in 1955. Least number of units (5.9 per cent) were established during the period of the Independence and 4 years following, which is quite understandable. From 1975 onward a trend of steady growth of the sector is quite discernible from the Table 15.6 per cent of the units came into being during the 1975-80 period and whereas during the following 5 years (1981-85), the proportion of number of units established was 33 per cent. In other words, first half of the present decade witnessed a spectacular growth in the sector, where 1982 had been the peak year 12 out of 51 sample units, i.e. 23.5 per cent enterprises were founded that year. One of the contributing factor to this, inter alia, was probably initiation

of the financial assistance policy by the BSCIC. However, one can not miss the fact that, from 1982 a secular trend of decline in number of units established has set in which might be an manifestation of financial and other problems presently affecting the sector.

We have mentioned earlier that in the case of small engineering and metalworking industries in Bangladesh reliable and current information in the number of enterprises over time is lacking. For assessing the number of units now in operation in the sector presently, we use the age distribution of the sample units, assuming that attrition of the small metal fabricating and engineering firms took place at a more or less constraint rate in the past. The growth rate of the sample enterprises implicit in their age distribution would give us an idea of the rate of growth of the sector in the survey area. Having said this, we calculated the exponential growth rate in each of the years period from 1970-85 where we observe the annual rate of growth has steadily increased. During 1970-75 it was 9.4 per cent, followed by 16.2 per cent in 1975-80 and 20.8 per cent in 1980-85. For the overall period (1970-85) the growth rate has been calculated to be 15.5 per cent which is significantly above the rate of growth of the small and cottage industry sector of the country during the corresponding period.

When we compare Table 3.5 with Table 3.6 we observe that the structures of the period of establishment and the period of the acquisition of the units are quite identical. This can be very well explained by the fact that 82 per cent of the enterprises were established by the present proprietors themselves.

3.2 Production Line, Production Type and Product Mix

The small metalworking and engineering firms are predominantly in semi-mechanised level of operation where producing goods on continuous basis is almost totally absent. Quality control techniques and standards are relatively primitive due to relatively rough-tolerance

TABLE 3.5

YEAR OF ESTABLISHMENT OF THE UNITS

Year	Number
<u>Before 1971</u>	
1955	1
1968	3 5
1970	1 (9.8)
<u>1971-75</u>	
1973	1 3
1974	2 (5.9)
<u>1976-80</u>	
1977	1
1978	4 10
1979	2 (19.6)
1980	3
<u>1981-85</u>	
1981	6
1982	12
1983	9 33
1984	5 (64.7)
1985	1
1986	-
51 (100.0)	

TABLE 3.6

YEAR OF ACQUISITION OF THE UNITS

Year	Number
<u>Before 1971</u>	
1955	1
1968	1 3
1970	1 (5.9)
<u>1971-75</u>	
1972	1
1973	1 3
1974	1 (5.9)
<u>1976-80</u>	
1977	2
1978	4
1979	3 11 (21.5)
1980	3
<u>1981-86</u>	
1981	6
1982	12
1983	9 34 (66.7)
1984	5
1985	1
51 (100.0)	

products are usually produced in these firms. So as to identify the common patterns in the metalworking processes employed and products generated it is necessary to analyse the processes and products from the point of view of 'specialisation' and 'commonly found combinations'.

3.2.1 Classification of the units according to production line

In their manufacturing activities the firms in the small engineering and metalfabrication sector use one or more of the following technological processes: (i) casting, (ii) forging, (iii) sheetwork/welding, (iv) planting, (v) machine assembly (vi) machining, (vii) presswork industry, (viii) moulding and finishing. Table 3.7 presents the breakdown of the respondent firms according to the production line(s) employed. Out of 51 enterprises, 14 (27.5 per cent) units have only one production line of which 12 (23.5 per cent) units are engaged in machining only. 24 units (47 per cent) have two processes of which combination of 'machining and welding' happens to be dominant (15 units or 29 per cent). Among the rest of the enterprises, 11 units (21.6 per cent) have 3 processes and 6 units (11.8 per cent) have 4 processes in use. Among the 3 processes per firm units 'casting, welding, and machining' is the most common combination, whereas in the case of 4 processes units it is 'casting, welding, machine assembly and machining'.

When ranked according to main production line we observe (Table 3.8) that machining is the single most important (56.9 per cent) production process employed in the sector followed by casting (17.6 per cent). Though sheetwork/welding figures as the third important (13.7 per cent) production process, but when the subprocesses are taken into consideration, then it was found that more than majority (52.9 per cent) of the enterprises are engaged in sheetworking and welding in combination with other processes. On the other hand, though machine assembly occupies the fourth place (3.9 per cent) according to main line of production, it is quite significant in

TABLE 3.7

CLASSIFICATION OF THE UNITS ACCORDING TO PRODUCTION LINE

T y p e	Number
1. Casting only	-
2. Forging only	-
3. Welding only	-
4. Planting only	1
5. Machine assembly only	-
6. Machining only	12
7. Presswork industry only	-
8. Mould making and finishing only	1
9. Casting and forging	1
10. Casting, welding and machining	7
11. Casting, welding, planting and machining	1
12. Casting, welding, machine assembly and machining	3
13. Welding, machining and presswork industry	1
14. Machining and welding	15
16. Machining and mould making	2
17. Casting, machine assembly and machining	1
18. Casting and machining	3
19. Forging and machining	1
20. Casting, welding, machining and presswork industry	1
51	

TABLE 3.8

RANKING OF UNITS BY MAIN PROCESS USED

Main Process	Frequency	Per cent	Rank
1. Casting	9	17.6	II
2. Forging	1	2.0	
3. Sheetwork/welding	7	13.7	III
4. Flangint	1	2.0	
5. Machine assembly	2	3.9	IV
6. Machining	29	56.9	I
7. Presswork industries	1	2.0	
8. Moulding/finishing	1	2.0	
	51	100.0	

the context of necessity of graduation of the sector from processing phase to assembling of complete products.

3.2.2 Classification of units according to product types

As it has been mentioned earlier, presently the small engineering and metalworking sector produces a variety of products, which is reflected in the Table 3.9. During the survey it was found that 21 out of 51 units have monosector product line. In other words, each of the 41.2 per cent of the enterprises in the sector produce intermediate goods and services for one sector only. Within them production of motor vehicle parts dominates (8 units or 15.7 per cent), followed

TABLE 3.9

CLASSIFICATION OF UNITS ACCORDING TO PRODUCT TYPE

T y p e s	Number
1. Industrial equipments	6
2. Motor vehicle parts	8
3. Agricultural implements	2
4. Metal industries equipment	2
5. Pipe-work	2
6. Other machinery parts	3
7. Others (miscellaneous)	3
8. Industrial equipments & motor vehicle parts	11
9. Motor vehicle parts & agricultural implements	-
10. Industrial equipments motor vehicle parts, agricultural implements metal industries equipments	4
11. Motor vehicle parts & metal industries equipments	8
12. Industrial equipments & other machinery parts	1
13. Agricultural implements & metal industries	1
14. Motor vehicle parts, metal industries equipments & others	1
51	

by production of industrial equipments (6 units or 11.8 per cent). Enterprises engaged in pipeworking and producing exclusively agricultural implements were relatively fewer in number - 3 units or 5.9 per cent and 2 units or 3.9 per cent respectively. On the other hand, another 21 units (41.2 per cent) have product lines where the production of industrial equipments and motor vehicle parts happen to be the most important combination (11 units or 21.6 per cent), whilst combination of production of motor vehicle parts and metal industries equipments figures significantly (8 units or 15.7 per cent). Rest of the 9 units (17.6 per cent) are engaged in production of items for 3 or more sectors, where a mix of production of industrial equipments, motor vehicle parts, agricultural implements and metal industries equipments is the most popular one (4 units or 7.8 per cent).

When the units were classified according to their main product line, it was revealed, as we see from Table 3.10, that motor vehicle parts is the most important product line (35.3 per cent) when considered in totality, followed by industrial equipments (29.4 per cent). The third most important product line in the sector was found to be metal industries equipments (11.0 per cent).

Amongst the sub-processes, it was established that motor vehicle parts and metal industries equipments are equally significant followed by industrial equipments.

As a whole the sector demonstrate quite a significant diversity in terms of forward linkages which are basically production oriented, i.e. the sector is engaged, primarily, in production of intermediate goods and services, and, to a lesser extent, in production of means of production.

3.2.3 Classification of units by production type

The metalworking and engineering sector are usually engaged in the following types of basic activities: (i) servicing and repair-

TABLE 3.10
RANKING OF UNITS BY MAIN PRODUCT LINE

Product Type	Frequency	Per cent	Rank
1. Industrial equipments	15	29.4	II
2. Motor vehicle parts	18	35.3	I
3. Agricultural implements	3	5.9	
4. Metal industries equipments	6	11.8	III
5. Pipe, mould, etd.	2	3.9	
6. Other machinery parts	4	7.8	IV
7. Other (miscellaneous	3	5.9	
	51	100.0	

ing, (ii) fabrication (iii) integrated production (fabrication & assembly), (iv) complete goods production and (v) assembly.

Table 3.11 presents the breakdown of the units surveyed according to their production type. 20 out of the 51 units, i.e. 39.2 per cent of the units are engaged in only one type of activity. Within them servicing and repairing activity is overwhelmingly dominant (14 units or 27.5 per cent), whereas 8 per cent of the units were engaged in fabrication, and integrated production and complete goods production were 2 per cent each. On the other hand, among the rest of the units, which carry out two or more activities simultaneously, the combination of servicing and repairing and fabrication is singularly important as 49% of the units surveyed are of this type, followed far behind by fabrication and complete goods production (4 per cent). No firm exclusively dealing with assembly was found.

TABLE 3.11

CLASSIFICATION OF THE UNITS ACCORDING TO PRODUCTION TYPE

Types	Number	
a) Servicing & repairing	14	(27%)
b) Fabrication	4	(8%)
c) Servicing, repairing & fabrication	25	(49%)
d) Fabrication & assembly (Integrated production)	1	(2%)
e) Complete goods production	1	(2%)
f) Assembly	-	
g) Others	-	
h) Servicing, repairing & others	1	(2%)
i) Fabrication & others	1	(2%)
j) Servicing, repairing, fabrication & integrated production	1	(2%)
k) Integrated production, Servicing & repairing	1	(2%)
l) Fabrication & complete goods production	2	(4%)

TABLE 3.12

RANKING OF THE UNITS BY MAIN TYPE OF PRODUCTION

Type of Production	Frequency	Per cent	Rank
1. Servicing and repairing	29	56.9	I
2. Fabrication	17	33.3	II
3. Integrated production	3	5.9	III
4. assembly	-	-	-
5. Complete goods production	2	3.9	
	51	100.0	

When the units were classified according to their main type of activities, it was revealed that the more than majority (56.9 per cent) of the units specialises in servicing and repairing. The second most important activity is fabrication (33.3 per cent). The shares of units primarily engaged in integrated production and complete goods production are 5.9 per cent and 3.9 per cent respectively.

Among the sub-activities, it was found fabrication happens to be the most important one followed by servicing and repairing.

Thus, when we consider the pattern of production lines, product types and production types of the small metalworking firms, we observe that it is at the phase of transcendence from the servicing and repairing oriented sector to a phase of integrated and/or complete goods production. This dynamics of development of the sector is obviously going to have some financial implications. For example, if a firm has to go to complete goods production, it will have to incur more

material and production cost, maintain a bigger stock of raw-materials and finished goods, etc. which will increase the need of working capital. More so, if the entrepreneurs so as to move into more advanced form of production, have to carry out balancing, modernisation and replacement of this equipments and machineries, it will demand fresh investment in fixed assets, thus enhancing the financial need of the sector.

3.3 Employment and Labour

The size of employment in the surveyed units has been found to be 310 persons,^{29/} accordingly the average size of employment per enterprise is 6.1 persons.

Table 3.13 presents the distribution of enterprises according to size of employment. It may be observed from the table that more than majority (62.7 per cent) of the units have an employment size of 1-5 persons. A significant portion (25.5 per cent) of the units have a working force of 6-10 persons. Employment size of 9.8 per cent ranges between 11-15 persons, whereas only 2 per cent of the units have more than 15 persons working in the enterprises.

TABLE 3.13

DISTRIBUTION OF UNITS ACCORDING TO SIZE OF EMPLOYMENT

Size of employment	Number	Per cent
Upto 5 persons	32	62.7
6 - 10 Persons	13	25.5
11 - 15 persons	5	9.8
15 + persons	1	2.0
	51	100.0

Except in one, other than the proprietor, no person performing exclusively managerial activities was observed among the surveyed units. The unit, where the non-production employee was found, belongs to the employment size group of 15+ persons.

Regarding type of workers, it was found that out of the total number of 310 persons employed in the surveyed units, 156 (50.3 per cent) are skilled workers and 154 (49.7 per cent) are either apprentices or unskilled workers. All of both the types of workers were hired workers. No incidence of family labour and female labour was noticed in the surveyed units.^{30/}

Both the types of workers are employed full time in the enterprises having a working day, on average of 8-10 hours.

The workers receive fixed monthly wages. There is significant difference between the wage rates of skilled and unskilled workers. On average, the monthly wage of a skilled worker has been found to be Tk. 1,144, whilst it usually ranges between Tk. 1,000 to Tk. 2,000, depending upon the skill and nature of the job. On the other hand, an unskilled labourer on average earns Tk. 381 per month, whereas their monthly wage usually varies between Tk. 200-400. It was observed that the wage of young unskilled workers is directly proportional to their age. On the whole, the average income of a worker in the small engineering and metalworking firm earns Tk. 765 per month.

3.4 Capital Structure

It is a known fact that the small engineering and metalworking sector has relatively a high value of capitalisation and is characterised by speedy turnover. These two factors have a considerable bearing on enhancing the capital requirement of the units of the sector. But quantitative knowledge of how high is the capital requirement of these enterprises are also important in order to estimate capital requirement for setting up new enterprises in the sector and as well as to formulate an enlightened credit policy, geared to the need

of the sector. On the other hand, so as to ensure best possible use of scarce capital, it is necessary not only to know the amount of capital in use but also its composition with a view to make most economical use of the scarcest type of assets. The following description of the capital structure of the small engineering and metal fabrication sector will attempt to throw some light on these issues.

3.4.1 Fixed Asset

Fixed asset in the present study has been evaluated under four broad categories, viz. land and building, machinery, tools and equipment, and miscellaneous items. The value of capital stock has been measured in terms of their resale value in current cost, although no rigorous method of estimating their resale value could be applied.^{31/}

The total value of fixed assets in the 51 sample enterprises is Tk. 1,96,96,576, which means that the average size of fixed capital per unit is around Tk. 3,86,207. But a wide variation of fixed asset size may be observed amongst the units. At one end there are enterprises having an investment of less than Tk. 1,00,000 in the form of fixed assets and on the other end there are enterprises where the value of fixed assets is almost Tk. 20,00,000. Distribution of units according to their value of fixed assets has been presented in Table 3.14.

The proportion of land and building cost in the value of fixed assets presented in Table 3.14 is quite significant. Due to locational importance the value of land is relatively high in the survey areas and pucca and semi-pucca type of structure raised the value of the building assets. However, in a situation when almost all of the units were situated in rented premises, the predominance of land and building cost in the capital cost in the capital structure implies that the picture of relative capital requirement that one may get from Table 3.14 is liable to some what misleading.

TABLE 3.14

DISTRIBUTION OF UNITS BY VALUE OF FIXED ASSETS

Value of Fixed Assets	Frequency	Per cent
Below Tk. 1,00,000	1	2.0
Tk. 1,00,000 - Tk. 2,00,000	12	23.5
Tk. 2,00,000 - Tk. 3,00,000	18	35.3
Tk. 3,00,000 - Tk. 4,00,000	6	11.8
Tk. 4,00,000 - Tk. 5,00,000	4	7.8
Tk. 5,00,000 - Tk. 6,00,000	5	9.8
Above Tk. 6,00,000	5	9.8
	51	100.0

Alternatively, it is preferable to exclude the land and building cost of the surveyed units and include the amount of lump-sum down payment made at the moment of renting the premise or the resale value of possession of the premise to get a truer picture of their capital requirement. This truncated requirement would appear to be the more appropriate measure of fixed asset requirement in the context of designing credit policies, as well as, in estimating resources cost of setting up of a new unit in the traditional localities of engineering activities.

When the value of fixed asset are adjusted in the above fashion, it was found that the total amount of fixed capital engaged in the units is Tk. 1,1,22,050 and the average size of fixed capital per unit is Tk. 2,57,295 i.e. 2/3 of the previous measure of the fixed asset. Table 3.15 depicts the distribution of the value of adjusted fixed assets.

TABLE 4.15

DISTRIBUTION OF UNITS BY VALUE OF ADJUSTED FIXED ASSETS (EXCLUDING VALUE OF LAND AND COST OF STRUCTURE AND INCLUDING AMOUNT OF DOWNPAYMENT OR RESALE VALUE OF POSSESSION)

Value of Adjusted Fixed Assets	Frequency	Per cent
Below Tk. 1,00,000	6	11.8
Tk. 1,00,000 - Tk. 2,00,000	22	43.1
Tk. 2,00,000 - Tk. 3,00,000	11	21.6
Tk. 3,00,000 - Tk. 4,00,000	5	9.8
Above Tk. 4,00,000	7	13.7
	51	100.0

In the adjusted value of fixed asset of the respondent firms, whilst the investment on account of the workshop premise is usually between 12-14 per cent, the shares of machineries and tools/equipments vary between 64-74 per cent and 12-19 per cent respectively. Proportion of miscellaneous items is around 2-3 per cent.

During the survey it was revealed, that among the sample units, highest value of average fixed asset per firm is attained by the unit where machine assembly is the main production process, followed by presswork, machining, casting and welding and sheetwork.

3.4.2 Working Capital

Working capital is defined in the study to include stocks of raw material, fuels and outputs, work in progress, trade accounts receivables and cash in hand or bank to meet running expenditures. Information relating to working capital is collected at a point

in time (i.e. at the moment of administering, the questionnaire), which may be quite deceiving as it is subject to fluctuation (in spite of the fact that no seasonal factor determining the volume of output was observed). Moreover, since almost all of the respondent units indicated that credit for working capital as one of their major need, the figures presented here should be interpreted as what the enterprises have to do with at the present state of affairs, not that what they may require for properly running the enterprises.

The total amount of working capital of the respondent firms has been estimated to be Tk. 39,30,875 which gives an average size of working capital of Tk. 77,076 per unit. These figures include both the sum of advances received for job work and used for the purpose, as well as, amount of procurement done on credit, thus giving an approximate measure of the working capital requirements of the small engineering and metalworking enterprises. However, the average working capital figure conceals a highly skewed distribution, varying from a modest Tk. 1,000 to as high as about Tk. 8,00,000. Distribution of the units according to various levels of working capital requirement has been presented in Table 3.16. The Table reveals the working capital requirement of the overwhelming majority of the units (70.6 percent) is less than Tk. 50,000 per unit.

The abovementioned working capital figures are essentially the assets of the enterprises for meeting the current production expenses at the moment, which include both the own working capital of the entrepreneurs, as well as, the borrowed working capital. Whilst this indicator more or less captures the working capital need of the units at the present level of capacity utilisation, it, however, gives an inflated picture of the financial capabilities of the respondent units to serve the running expenses from own sources. Thus, when the working capital requirement estimates are accounted for the production advances and credit procurements, they will express more accurately the investment of the entrepreneurs themselves under the head of working capital and alternatively bring out the contribution of the external sources for the purpose.

TABLE 4.16

DISTRIBUTION OF UNITS BY LEVELS OF WORKING CAPITAL REQUIREMENT

Range of Working Capital	Frequency	Per cent
Less than Tk. 10,000	14	27.5
Tk. 10,000 - Tk. 50,000	22	43.1
Tk. 50,000 - Tk. 1,00,000	7	13.7
Tk. 1,00,000 - Tk. 2,00,000	4	7.8
Tk. 2,00,000 and above	4	7.8
	51	100.0

Hence, the adjusted working capital figure of all the 51 respondent firms amounts Tk. 29,57,475 and the per unit working capital figure stands to be Tk. 57,990, which is 75.2 per cent of the total working capital estimate. In other words, 24.8 per cent of the working capital requirement (i.e. Tk. 19,086 per unit) is compensated by external sources (i.e. customers and suppliers).^{32/}

Table 3.17 presents the distribution of the adjusted working capital per unit according to various ranges. As expected, the units having smaller size of adjusted working capital increase in number of comparison to their corresponding size group in Table 3.16. As per Table 3.17, the number of firms having own working capital of less than Tk. 50,000 is 40 (78.4 per cent), whilst the number of firms of corresponding working capital range, as has been mentioned earlier, is 36 (70.6 per cent).

Another aspect relating to both the types of working capital estimates is that the relative share of the better endowed firms in the total volumes of working capital are more than their correspon-

TABLE 3.17

DISTRIBUTION OF UNITS BY LEVELS OF ADJUSTED WORKING CAPITAL

Range of Adjusted Working Capital	Frequency	Per cent
Less than Tk. 10,000	17	33.3
Tk. 10,000 - Tk. 50,000	23	45.1
Tk. 50,000 - Tk. 1,00,000	5	9.8
Tk. 1,00,000 - Tk. 2,00,000	2	3.9
Tk. 2,00,000 and above	4	7.8
	51	100.0

ding share of units. But what is more significant is that the units having smaller size of working capital have had a lower degree of dependence on customers advance and suppliers' credit. This indicates the disadvantageous situation of the smaller units in meeting their working capital requirements through the principal actors of the production process, and thus, forcing them to resort to other informal sources of finance or to remain with a greater gap of unfulfilled working capital requirement. On the other hand, units with larger value of fixed assets have been found not to have corresponding amount of working capital. This, of course, a reflection of the general scarcity of working capital in the sector, one of the consequences of which is lower level of capacity utilisation. The fixed asset and working capital analysis revealed, that, on average, the working capital is about 30 per cent of that of fixed asset or 23 per cent of the total asset.

3.5 Capacity Utilisation

The spectacular rate of growth of the small engineering and metalworking sector in number of enterprises in the recent periods also indicates rapid increase of production capacities in the sector. Information relating to state of utilisation of installed production capacities, in the study, have been first solicited from the entrepreneurs themselves. Since there is a strong suspicion that the perceptions of the entrepreneurs regarding rate of utilisation of capacity may frequently be off the mark (usually lower), so the figures are later compared and revised taking account of the technically feasible normal capacity and actual output (production and services) of individual units.

After moderating the perceived state of capacity utilisation, it was deemed appropriate to present the results in terms of levels of unused capacity. As the Table 3.18 reveals that the bulk of the enterprises (41.1 per cent) have an unutilised capacity to the size of 30-50 per cent, i.e. their rate of capacity utilisation is 50-70 per cent. Comparatively only a small section of the enterprises (7 units or 13.7 per cent) are being able to put to use a high proportion of their installed capacity (70 per cent and above), whereas an equal number of units could only utilise 30 per cent of their production capacities. However, it has been estimated that, on the whole, the size of the idle capacity is around 60.4 per cent, or in other words, the average rate of capacity utilisation is about 39.6 per cent in the sector, which is obviously a very low figure (when compared to other relevant national estimates).

3.6 Material Input Structure

3.6.1 Raw material

The main raw materials used by the small engineering and metalworking firms are found to be as follows: puddled bars and pilings; ingots, blocks, lumps of iron and steel; rods, blocks, billets, slabs

TABLE 4.18

DISTRIBUTION OF UNITS ACCORDING TO LEVELS OF UNUTILISED CAPACITY

Level of Unutilised Capacity (%)	Units	Per cent
Below 20	2	3.9
20 - 30	5	9.8
30 - 50	21	41.1
50 - 70	16	31.4
70 - 90	7	13.7
	51	100.0

and sheet bars of iron and steel; iron or steel coil for rerolling; universal or corrugated sheets of iron; angles, shapes and sections of iron and steel, tubes and pipes of cast iron, iron and steel; alloy steel, carbon steel, copper and aluminum sheets, plates, bars or aires; ship scraps; etc.

It has been noted earlier, that the indigenous basic iron and steel sector is quite narrow-based and more so cost ineffective, and as a result the metal consuming firms have to basically depend upon raw materials of imported origin. Accordingly, the small metalworking firms in addition to high prices for locally manufactured materials and intermediate products, have to pay high rates of tax on imported raw materials.^{33/}

During the present survey, information on consumption of raw materials by the units for the last three months were collected, which was later crosschecked for consistency. Inconsistencies basically arised whilst taking account of the raw material consumption for the units engaged in servicing along with production. The present

estimate of total raw material consumption include raw materials used in service activities (even when they were supplied by the receivers of the service)^{34/}. However, the value of production of these activities has been estimated by the value of raw materials plus service charges.

The value of total amount of yearly consumption of raw materials of the surveyed units has been found to be Tk. 38,16,780, i.e. on average each unit yearly consumes raw material to the tune of Tk. 74,839, which means raw materials account for 40.8% of the total cost of production or 19.5 per cent of the gross value of output.

Table 3.19 depicts that although the average yearly value of raw material consumption is around Tk. 75,000, for more than 60 per cent of the units the cost of raw materials used is less than Tk. 50,000. Whereas the 5 largest of the units (in terms of raw material consumption) consume more raw material than the smallest 31 altogether. This is in fact reflection of, besides various scales of operation, the different production orientation of the units. The units having relatively low expenditure on account of raw material basically specialize in servicing activities, whereas higher cost of raw material is incurred by the firms engaged more extensively in production (fabrication of parts or complete good production).

Although there are incidences of raw materials being provided by the customers, raw materials are mainly procured by the entrepreneurs from the wholesalers and retailers (depending upon the size of procurement) and quite often on credit.^{35/}

Frequency of purchase of raw materials by the enterprises per month has been presented in Table 3.20, which shows that the firms have to engage themselves into frequent purchase of raw materials. For a sector like engineering and metal fabrication, where there is a set pattern of raw material consumption, the raw materials are mostly of imported origin and quite costly (often subjected to significant price fluctuation), it is expected that the firm will take

TABLE 3.19

DISTRIBUTION OF UNITS ACCORDING TO VALUE OF
YEARLY CONSUMPTION OF RAW-MATERIALS

Value of Raw-materials	Number of Units	Per cent
Below Tk. 5,000	10	19.6
Tk. 5,000 - Tk. 25,000	12	23.5
Tk. 25,000 - Tk. 50,000	9	17.6
Tk. 50,000 - Tk. 1,00,000	8	15.7
Tk. 1,00,000 - Tk. 2,00,000	7	13.7
Tk. 2,00,000 and above	5	9.8
	51	100.0

TABLE 3.20

DISTRIBUTION OF ENTERPRISES BY FREQUENCY OF PURCHASE
OF RAW MATERIALS PER MONTH

Range	No. of units	Per cent
Upto 5 times	23	45.1
6 - 10 times	4	7.8
More than 10 times	4	7.8
According to need	20	39.2

advantage of the price situation and minimise their per unit purchase cost by going into bulk purchase and maintaining steady stock. In this context, it appears that incidence of a sizeable portion of the units (45 per cent) belonging to the least frequent purchasing group (almost once a week) is quite significant, whereas the firms (15 percent of units) those have to address themselves to the market for procurement to the extent of 6 to 17 times per month are obviously in a disadvantageous position. It seems that the reality has been more accurately expressed by the 39.2 per cent of the respondents, according to whom procurement is done 'as and when necessary'. Apparently, it may be ascribed to a weak demand situation, but it is our informed opinion that basically it is the financial limitations of the entrepreneurs, more precisely the working capital shortage, which do not allow them to go for cost minimisation through bulk purchase and maintaining steady stock.

3.6.2 Other inputs

Under the head of other inputs' monthly expenditures on account of electricity, gas, other fuel (coal, petroleum, firewood, etc), transport, material cost of maintenance and repair, water, miscellaneous expenses have been considered. It has been estimated that cost of the above mentioned intermediate consumption items in the surveyed small engineering and metalworking firms adds upto Tk. 26,88,768 or on average Tk. 52,721 per unit. In other words, proportions of intermediate consumption (other than raw materials and labour) in the total cost and gross value of output are 28.75 per cent and 13.71 per cent respectively. These high percentages of 'other input' expenditure is largely explained by the energy intensive production processes, characterising the sector.

3.7 Value Added

The value added by the sample enterprises during the last one year (1986) has been estimated to be Tk. 1,31,01,172 or 66.8 per

cent of the gross value of output , which amounts to about Tk. 2,56,886 per unit yearly. The value added per enterprise is sometimes used as a measure of size of firm. Distribution of the units by their average size of value added has been presented in Table 3.21. As the table reveals that more than 70 per cent of the units have an annual value added to the maximum of Tk. 1,00,000. The significant size variance amongst the 'large' and 'small' units is brought out by the fact that 30 per cent of the sample firms (belonging to the larger value added range) account for more than 85 percent of the total value added.

TABLE 3.21

DISTRIBUTION OF UNITS ACCORDING TO AVERAGE SIZE OF VALUE ADDED

Value Added Range (000)	No. of Units	Per cent
Less than 50	18	35.3
50 - 100	18	35.2
100 - 500	10	19.6
500 - 1,000	3	5.9
Above 1,000	2	3.9
	51	100.0

3.8 Production Analysis

Taking into cognisance all the valid criticisms which are usually leveled against production function analysis, an attempt was undertaken through the use of most popular production function used in empirical investigations with a view to generate some insights on the issues of returns to scale, marginal productivities of inputs and efficiency

in their allocation, and the possibility of factor substitution.^{36/}
 In a situation where no alternative satisfactory techniques are available for the purpose of our study, the present exercise has been carried out to estimate certain important parameters for whatever their worth.

Estimated values of relevant parameters are first obtained by the traditional neo-classical Cobb-Douglas production function having the general form

$$Y = AL^aK^b$$

where A is a constant, Y value added and L labour services and K capital series. The parameters a and b are elasticities of output with respect to labour and capital respectively. The sum of the elasticities reflects the degree of returns to scale in production. Whilst labour and capital should be ideally measured in flow terms, because of non-availability of data in most empirical exercises they are measured in stock terms.

In our exercise enterprise level cross-section data have been used to estimate the production function. Labour has been measured in flow terms by the amount of wage bill paid by the entrepreneurs over the reference period (last one year), whereas capital has been measured in stock terms by adding together the present resale value of possession of the building, machinery, and equipment and other fixed assets and the value of working capital, i.e. stocks inputs and outputs, work in progress, amounts receivable and cash in hand or bank to meet immediate expenses, at the moment of administering of questionnaire.^{37/}

Results of the regression run on the estimated values of the relevant variables for the surplus have been presented in Table 3.22. The results indicate that the Cobb-Douglas production function gives of relatively good fit to our survey data. The value of R^2 is 0.567 indicating that about 57 percent of variation in value added

TABLE 3.22

ESTIMATED VALUES OF PARAMETERS OF THE COBB-DOUGLAS
PRODUCTION FUNCTION FOR THE SMALL ENGINEERING
AND METALFABRICATION SECTOR

Value of Constant	Coefficient of labour	Coefficient of Capital	Value of R ²
-5.149	0.120 (0.189)	1.175 (0.255)	0.567

Note: Values within parentheses are standard errors of the estimated regression coefficients.

is explained by the variations in use of labour and capital. The value of the coefficients on labour and capital are significantly different from zero.

As it is known, the sum of the coefficients of labour and capital in Cobb-Douglas production function reflects the degree of returns to scale. In the present case, the sum of the coefficients is more than one indicating an increasing returns to scale.

As the neo-classical production theory posit, estimation of marginal factor productivities and their comparison with wage and interest rates give insights into the efficiency of allocation of the inputs. The marginal productivity of labour and capital may be estimated within the framework of Cobb-Douglas production function as follows:

$$MPL = a \frac{Y}{L}$$

and $MPK = b \frac{Y}{K}$,

where MPL and MPK are marginal productivities of labour and capital respectively, a and b are output elasticities of labour and capital,

Y/L and Y/K are average productivity of labour and capital respectively.

The estimated marginal productivity of capital for the small engineering and metalfabrication sector has been found to be Tk. 0.346 for one taka of investment. This means that the return at the margin on capital investment in this sector is 34.6 per cent. Considering that interest rates on bank loans are 14 per cent per annum, this result suggests that expansion of investment in this sector will improve allocative efficiency.^{38/} However, as it has been mentioned earlier that since very few of the small engineering and metalworking firms have access to or get adequate support from the institutional credit markets, these enterprises have to fall back upon the informal/non-institutional credit markets which charge a very high rate of interest. Thus, whilst those firms who are privileged to have institutional credit support, get cheaper capital which induces them to go for more capital intensive techniques, but those who do not have access to financial institutions the situation is not so unambiguous. Although the rate of return on capital is quite high in the small engineering and metalworking sector, it is only profitable to invest by borrowing capital from the informal credit market when the rate of interest of the latter is less than the incremental return on every supplementary capital. Our subsequent analysis will show the implicit borrowing interest rate in the informal credit market, in most of the cases, is significantly higher than 35 per cent^{39/}. As a result the dualistic capital market promotes inefficiency in those cases in allocation and utilisation of capital where the units have to be satisfied with an investment at a below optimal level.

The marginal product of labour for the small engineering firms is Tk. 3.25 per hour as against the average wage rate of Tk. 2.95 per hour. The result that wage rate is 90.8 percent of the marginal product of labour indicates that labour is more or less efficiently utilised by the sample firms and there is no significant scope for additional employment.

3.9 Productivity

Productivity in our study has been measured in relation to particular inputs, i.e. labour and capital. Labour productivity and capital productivity measured by value added per unit of capital and labour are partial productivities. However, in a labour surplus and capital scarce developing country like Bangladesh to indicate efficiency amongst them, the more relevant partial productivity is that of capital rather than labour. Even the crucial determinant of labour productivity is amount of capital necessary to employ a worker. And, of course, total productivity will be more meaningful in measuring how efficiently both capital and labour are combined.

3.9.1 Labour productivity

Labour productivity has been estimated in the study through two measures. Firstly, it is value added per worker per year and secondly, value added per labour hour. The average labour productivity has been found to be Tk. 42,261 per worker (irrespective of skilled or unskilled) per year or about Tk. 3522 per month. The average labour productivity per hour for the sector has been estimated to be Tk. 14.09. Since a significant portion of the workers (about 50 percent) in the sector is unskilled and/or apprentice workers, the second measure of labour productivity needs to be appropriately adjusted to more accurate express value added per skilled worker hour. Taking two unskilled/apprentice/child workers for one skilled worker equivalent, value added per hour for a skilled worker has been estimated to be Tk. 18.10.

3.9.2 Capital productivity

The value added per take of capital invested has been estimated at Tk. 0.70, indicating a relatively high rate of return on capital. The capital-output ratio has been found to be on average 1.09. However, according to Table 3.23 a variation may be noted in capital--output ratio among the sample enterprises. The enterprises having

a capital-output ratio of less than 0.50 are in fact units endowed with very little fixed assets and use very little working capital and are engaged in servicing activities.

TABLE 3.23

DISTRIBUTION OF ENTERPRISES BY LEVEL OF CAPITAL-OUTPUT RATIO

Capital-output Ratio	No. of Units	Per cent
Upto 0.50	6	11.8
0.51 - 1.00	21	41.2
1.01 - 1.50	16	31.4
Above 1.50	8	15.6
	51	100.0

3.9.3 Total productivity ratio

As it has been mentioned earlier, comparative study of the efficiency in resource use among various enterprises cannot be made in relation to either labour productivity or capital productivity alone. Accordingly, a total productivity ratio expressing value added as a proportion of the weighted sum of labour and capital, (the weights being the scarcity price of the inputs) has been estimated. The total productivity ratio (which is in sense efficiency index), TPR_i has been calculated as follows:

$$TPR_i = \frac{VA_i}{wL_i + qK_i}$$

where VA_i is the value added by the i th enterprise, L_i the labour hours worked for producing the output, and K_i is the amount of

capital invested in the enterprise, and w and q are the marginal productivities of labour and capital for the sector as a whole. Whilst, the denominator in the above equation shows what the i th unit could produce given its labour and capital realising the marginal productivities of labour and capital of the sector as a whole, the numerator expresses the amount the unit has actually produced. If the ratio is greater than one for a particular unit, it may be said to be earning more on its labour and capital than the sector as a whole.

Distribution of units according to different sizes of total productivity ratio (efficiency index) is reported in Table 3.24. It should be noted that units listed in the most efficient and marginally inefficient groups are primarily those which have relatively lesser amount of investment (fixed asset and working capital). Only one among these 10 unit happens to have very high capital intensity, which means overcapitalisation of this unit has resulted into its marginal inefficiency. As a whole, most of the efficient groups units rank relatively high in capital intensity (particularly those having more than 1.50 productivity ratio) suggesting that greater influx of capital in the sector will positively influence on enhancing the level of efficiency of the enterprises.

3.10 Profit

Profits have been estimated directly from the information on input-output and value of fixed assets collected from the sample enterprises during the survey. Profit figures were derived by subtracting from value added the wage bill paid to the workers, rent paid for hired buildings, and the estimated value of depreciation of machinery and equipments.^{40/}

Accordingly it was found that on average per unit Tk. 8,919 is yearly accounted for depreciation which is 2.3 percent of the gross value of output or 4.9 percent of the total cost.

TABLE 3.24

DISTRIBUTION OF UNITS ACCORDING TO EFFICIENCY INDEX

Value of Total Productivity Ratio	No. of Units	Per cent
Less than 0.75 (most inefficient)	4	7.8
0.75 - 0.99 (marginally inefficient)	6	11.8
1.00 - 1.25 (marginally efficient)	8	15.7
1.26 - 1.50 (efficient)	11	21.6
Over 1.50 (most efficient)	22	43.1
	22	43.1
	51	100.0

Per unit yearly cost and returns estimates of the small engineering and metal fabrication sector as presented in Table 3.25 reveal that on average enterprises of the sector accrue very high rate of profit. The table shows that on average a small engineering and metalworking unit earns nearly Tk. 2,00,000 per year which is 50 per cent of the gross value of its output. The total amount of profit generated in the sample units is estimated to be Tk. 98,00,496. Amongst the 51 sample firms, there was only one reported incidence of incurring loss. On the other hand, significant variation of profitability rate was observed among the sample enterprises.

TABLE 3.25

PER UNIT YEARLY COSTS AND RETURNS IN THE SAMPLE SMALL
ENGINEERING AND METALFABRICATION ENTERPRISES

<u>I t e m</u>	<u>Value</u>	<u>AS % of Gross Value of Output</u>
<u>Output</u>	3,84,337	100.0
Production		
Servicing		
<u>Material input</u>	1,27,560	33.2
Raw materials	74,839	19.5
Other inputs	52,721	13.7
<u>Labour input</u>	55,800	14.5
<u>Total cost</u>	1,83,360	47.7
<u>Value added</u>	2,56,886	66.8
<u>Depreciation</u>	8,919	2.3
<u>Profit</u>	1,92,167	50.0

CHAPTER 4

FINANCING SMALL ENGINEERING AND METAL FABRICATION
ENTERPRISES

It is a common belief amongst the concerned researchers that one of the major factors inhibiting development of new small scale units and transformation of the existing ones from traditional to modern lines is shortage of finance.^{41/} Lack of finance forces the entrepreneurs to use second hand machines, inferior methods of production, and ineffective techniques of procurement and marketing. On the other hand, this problem in fact is so acute and extensive that all other problems, whether of inadequacy of raw material or shortage of power, labour or marketing, become in the ultimate analysis a problem of finance.^{42/} The perennial problem of finance, confronted by the small enterprise are usually explained by the general paucity of capital, defective lending policies of the financial institutions and the dualistic features of the capital market of the developing countries.

In this chapter we seek to examine the general characteristics of financing of establishment operation and expansion of small engineering and metalworking firms, and attempt to assess whether lack of finance is impeding the growth of the sector. To start with, let us examine how the entrepreneurs themselves perceive the factors limiting more effective use of their scarce resources.

4.1 Entrepreneurs' Perceptions About Their Constraints

We have mentioned earlier that for a capital-scarce country like Bangladesh, efficient use of capital is an issue of overriding importance. To this end, level of utilisation of already installed production capacity is one of the appropriate measures of efficient use of capital. Again, it has been noted earlier, that on the average,

share of idle capacity in the total technically possible production capacity of the surveyed units has been found to be very high (more than 60%). In that case, instead of asking the respondent entrepreneurs to enlist their problems (in order of importance), during the survey they were requested to mention the factors (in descending order of importance) limiting higher level of utilisation of capacity in their firms.

Several factors have bearing on the rate of capacity utilisation, which include technological requirement, market condition, resources of the firms (particularly working capital), government policy, etc. Notions of the entrepreneurs regarding the unsatisfactory state of capacity utilisation presented in Table 4.1 reveals that inadequacy of working capital has been identified by more than majority (58.8 per cent) of the units as the single most important factor, and it also figures significantly (31.3 per cent) as the second most important factor impeding better utilisation of capacity. More than $\frac{1}{4}$ of the respondents deemed lack of demand for the goods and services of the units has contributed most in keeping installed capacity idle. Amongst the inputs, unavailability of skilled labour appeared to be a matter of more concern (9.8 per cent) than raw material constraint (3.9 per cent). However, skilled labour shortage figured prominently (37.2 per cent) as the single most important second factor. Interestingly, one of the respondents (classified under 'others') mentioned 'inability to expand capacity is hampering his rate of capacity utilisation' as his most important problem, i.e. addition of another set of particular machine would have balanced his inventory and enhanced the rate of utilisation of existing technological facilities.

As it appears from the Table, on the whole, the entrepreneurs largely associate their constraints, in the process of operation, to supply related issues, amongst which working capital need is predominantly important. At the same time concern relating demand aspect is quite discernible. Whilst, relatively small firms were quite univocal about working capital need, the large firms voiced concern about sluggish demand.

TABLE 4.1

PERCEPTIONS OF THE ENTREPRENEURS REGARDING FACTORS
AFFECTING CAPACITY UTILISATION

F a c t o r s	First Most Important Factor		Second Most Important Factor	
	No. of Units	Per cent	No. of Units	Per cent
1. Lack of work	13	25.5	14	27.5
2. Inadequate working capital	30	58.8	16	31.3
3. Raw material constraint	2	3.9	1	2.0
4. Unavailability of skilled labour	5	9.8	19	37.2
5. Others	1	2.0	1	2.0
	51	100.0	51	100.0

During the discussions with respondents it was found that though the entrepreneurs perceive both fixed and working capital to be their major initial constraints, lack of fund for meeting working capital requirement happens to be their primary concern. When the respondents were asked to indicate the stage of production cycle where financial assistance will be most beneficial, an overwhelming majority of the firms (80 per cent) mentioned it to be the pre-production stage i.e. finance is mostly needed to cover the expenditures necessary to put a job order into operation (See Table 4.2) 12 per cent of the respondents maintained that financial assistance would be most fruitful if it can finance the expenditures relating to market promotion and maintaining stock of produced goods. Whilst finance is no problem for the entrepreneurs when a job is already in the production process,

TABLE 4.2

PERCEPTION OF THE ENTREPRENEURS ABOUT THE STAGE OF PRODUCTION CYCLE WHEN THE FINANCIAL ASSISTANCE WILL BE MOST BENEFICIAL

Stage	No. of units	Percent
1. Procurement and organisation of production	40	80
2. Actual production process	1	2
3. Marketing and maintaining stock	6	12
4. Recurring expenditure	3	6
	50*	100

*One out of 51 of respondents mentioned that does not need any financial assistance at any stage.

a section of the enterprises pointed out support to sustain recurring expenditures at the beginning of each month (overhead costs, wage bills, etc.) will be most appreciated.

Analysing Table 4.3, where the perceptions of entrepreneurs regarding the duration for which financial assistance is required have been presented, it becomes quite clear that what these entrepreneurs expect is short term credit for sustaining the operation of the units. Whilst 46 per cent of the respondents indicated that duration for which financial assistance to be provided may be less than a month, only 12 per cent reckoned it should be for more than a year.

Evidence provided in the foregoing paragraphs prompt us to conclude that even when the entrepreneurs of the small engineering and metal fabrication sector are somehow able to gather the initial venture capital, but many of them may fail to grow and sustain their production because of lack of adequate flow of credit to meet short-term operating expenses.

**PERCEPTION OF THE ENTREPRENEURS REGARDING THE DURATION
FOR WHICH FINANCIAL ASSISTANCE IS REQUIRED**

Time Period	No. of Units	Percent
Upto 1 month	23	46
Upto 6 months	13	26
Upto 12 months	8	16
More than 12 months	6	12
	50	100

4.2 Financing of Initial Capital

The first requirement of capital faced by the entrepreneurs is the initial capital or start-up capital. The total amount of capital invested by the respondent entrepreneurs to establish the units or to acquire effective possession of them has been estimated to be Tk. 58,43,000, which means the average size of initial investment per enterprise is approximately Tk. 1,14,600.

There exists variation among the initial capital per enterprise invested at different points of time. There are enterprises with relatively modest investment of Tk. 20-25 thousand at the one end and Tk. 300-350 thousand at the other. Distribution of enterprises by their size of initial investment (after adjusting the figures of various years for inflation) reveals that the number of units in various size groups secularly decreases with the increase of the range. Thus, 33.3 per cent enterprises belong to single most important group of units having an initial investment to the maximum of Tk. 50,000, whilst 15.7 per cent of the units belong to the upper bound range of Tk. 2,00,000 and above.

TABLE 4.4

DISTRIBUTION OF ENTERPRISES BY SIZE OF INITIAL INVESTMENT

Range of Initial Capital (Tk)	No. of Units	Per cent
Upto 50,000	17	33.3
50,000 - 1,00,000	14	27.5
1,00,000 - 2,00,000	12	23.5
2,00,000 and above	8	15.7
	51	100.0

Having established a notion about the size of initial capital of the units in the small engineering and metaworking sector, it becomes important to generate some idea about the pattern of financing of this form of capital. As Table 4.5 exposes that whilst own capital of the entrepreneurs had been the main source of financing the start up capital (63.6 per cent), borrowed capital also contributed significantly (36.4 per cent). By own capital it has been meant here resources generated by the entrepreneurs himself through sale of assets, savings, accumulation from other business, etc.^{43/} The main sources of borrowed initial capital have been found to be friends (16.5 per cent), relatives (12.3 per cent) and financial institutions (5.1 per cent). Under the head of 'others', the respondents basically included share of the business partners, if any.

Analysing the Table, quite a number of aspects can not escape our attention. Firstly, the insignificant contribution of institutional sources in financing start-up venture capital in the sector. Secondly, friends and relatives, as in other sectors of the economy, here also together provide the bulk of the borrowed capital (79.1

TABLE 4.5

FINANCING OF INITIAL CAPITAL BY SOURCES

Sources	Amount	Per cent
I. <u>Own Capital</u>	<u>37,15,000</u>	<u>63.6</u>
II. <u>Borrowed Capital</u>	<u>21,28,000</u>	<u>36.4</u>
Friends	9,67,000	16.5
Relatives	7,16,000	12.3
Bank	3,00,000	5.1
Money-lender	10,000	0.2
Others	1,35,000	2.3
III. <u>Total Initial Capital</u>	<u>58,43,000</u>	<u>100.0</u>

per cent) and a important portion of the total initial capital (28.8 per cent). However, as we will see later 'friends and relatives' as source of informal finance do not necessarily mean lending of capital free of cost. Thirdly, the role of professional moneylenders (except in one case) appears to be totally absent. One obvious inference which can be drawn from this is that usury capital has not yet penetrated into the sector or has been totally squeezed out. However, our subsequent analysis shows that either of the above inferences are not true. It may be suggested that the professional moneylenders are not so keen to finance the venture capital due to the risk factor involved, even when they have an opportunity to charge high rates for the credit extended. Fourthly, it is quite evident, the entrepreneurs for financing start-up capital, have to primarily rely on their own internal resources as against the external sources, including both formal and informal.

The abovemade observations are quite consistent with resources of the country and the occupational background of the entrepreneurs. The infrequent use of loans as a source of initial capital funds by the entrepreneurs is basically explained by the paucity of loanable funds resulting from underdeveloped and segmented nature of the capital market, high cost attached to such funds, and knowledge and information gap facing the borrower about possible sources of loans.

In our analysis no functional relation was found between the size of initial capital and pattern of financing. Nevertheless, there were attempts on behalf of the respondents of 'larger' units to ascribe their initial investment to borrowed sources (which may be a deliberate attempt to conceal his previous incomes).

4.3 Financing of Raw-material Procurement

Although quite often the necessary raw materials are provided by the customers and/or financed by the advances paid by the customers, raw materials are mainly procured by the small engineering and metal-working enterprises from the wholesalers and retailers (depending upon the size of procurement), situated in and around Dhaka City. However, it was also established during the survey that a significant portion of the units (29 units or 56.9 per cent of the units) purchase a part of their raw material on credit or on deferred payment. Table 4.6 present the extent of use of credit in procurement by number of units. According to the Table, whilst 43 per cent of the units do not make any use of credit purchase, 29.4 per cent and 21.6 per cent of the units can resort to credit to finance upto 25 per cent and 50 per cent of their raw material procurement respectively. Only 5.9 per cent of the respondents mentioned that they can take advantage of credit purchase to cover more than 50 percent of their procurement expenditure.

Taking into consideration the frequency at which procurement is done by the units and stability of the seller-buyer relationship,

TABLE 4.6

DISTRIBUTION OF ENTREPRISES ACCORDING TO THE SHARE OF CREDIT
AND/OR DEFERED PAYMENT IN RAW-MATERIAL PROCUREMENT

Per cent of Raw-materials Procured on Credit and/or Deferred Payment	No. of Units	% of Units
Nil	22	43.1
Below 25%	15	29.4
265 - 50%	11	21.6
above 50%	3	5.9
	51	100.0

it may be suggested, that use of credit for financing procurement in the sector is not so wide even though 57 per cent of the units are making use of it in various extent.

However when one considers the raw material suppliers' input to the working capital, the importance of credit purchase of raw materials becomes more noticeable. The total amount of debt of the sample units to the raw material suppliers (and to an insignificant extent to the machinery and equipment dealers) has been found to be Tk. 14,43,850 which is 36.7 per cent of the total current assets of the enterprises.

4.4 Financing of Expansion Capital

Out of 51 responding units, 45 units mentioned of expanding their business during the last five year period (1981-86). In view of the constraints, inhibiting fuller realisation of the potentials

of the sector, and due to the fact that a big section of the enterprises have only been established in 1980's, the finding that 88 per cent of the units have expanded their business through additional investment in recent past only underscores the vitality of the sector. Total amount of expansion capital invested during the said period in the concerned units has been estimated to be Tk. 53,26,300, i.e. Tk. 1,18,462 on average per enterprise.^{44/}

Table 4.7, presenting distribution of units by various levels of investment with amount, exposes that 35.6 per cent of the units account for 66.6 per cent of the total invested expansion capital. These enterprises exclusively belong to the group of relatively 'large' small engineering and metalworking firms having higher level of capitalisation and employment. Moreover, the ratio of expansion capital to value added is higher in this group of firms than the same of the rest of the units in the sector.

TABLE 4.7

DISTRIBUTION OF UNITS BY LEVELS AND AMOUNTS OF EXPANSION
CAPITAL INVESTMENT DURING 1981-86

Range of Expansion Capital (Tk)	Units		Investment in the Range		Average Investment per Enter- prises in the ange
	Number	Per cent	Amount	Per cent	
Upto 50,000	18	40.0	8,69,800	16.3	48,322
50,000 - 1,00,000	11	24.4	9,10,000	17.1	82,727
1,00,000 - 2,00,000	8	17.8	13,85,000	26.0	1,73,125
2,00,000 and above	8	17.8	21,66,000	40.6	2,70,750
Total	45	100.0	53,30,800	100.0	1,18,462

The contributions of different sources of funds in various ranges of expansion capital investment have been depicted in Table 4.8. The Table shows that in overall financing of expansion capital, informal sector loan appears to be the single most important (27.8 per cent) source, closely followed by refinancing through profit (26.4 per cent).^{45/} The contribution of the institutional loan is also quite pronounced (23.1 per cent) in the total investment figure. However, we find the relative role of various sources of financing are significantly different for various ranges of expansion capital investment.

According to Table 4.8 the firms belonging to smaller investment groups (upto Tk. 1,00,000) had to depend on informal sector credits to the extent of about 55 per cent to finance the expansion of their business. The contribution of institutional finance is minimal in the oversaid investment groups (a little more than 4 per cent). Whereas in the larger investment ranges (Tk. 1,00,000 and above), informal credits account for 14-15 per cent only of the total investment in the ranges, and institutional loans about 30 per cent for the same. On the other hand the proportion of reinvested profit is maximum (34.6 per cent) in the highest investment range.^{46/} Moreover, the share of fund from own sources (profit, sale of property, and other own sources) is also higher for the firms having bigger investment (it is 40 per cent for the units with less than Tk. 1,00,000 investment). In other words, the units belonging to bigger investment range (which are incidentally the more capital intensive enterprises with bigger scale of operation) generate more investible surplus and capable of mobilising relatively more resources from internal sources. Thus, amongst the sample small engineering and metalworking units two distinctive trends can be identified with respect to financing of expansion capital. In the structure of sources of financing of expansion capital for the small investment ranges 'informal credit - own resources' set dominates, where in the case of larger investment ranges the set is 'own resources - institutional finance.'

TABLE 4.8

PROPORTION OF EXPANSION CAPITAL CONTRIBUTED BY VARIOUS SOURCES OF FUNDS

Range of Expansion Capital (Tk)	Profit	Sale of Property	Other Own Sources	Institutional Loan	Informal Sector Loan	Total Investment in the range
Below 50,000	20,88,000 (24.0)	38,000 (4.3)	1,05,000 (12.1)	45,000 (5.2)	4,73,000 (54.4)	8,69,000 (100.0)
50,000 - 1,00,000	2,00,000 (22.0)	50,000 (5.5)	1,10,000 (12.1)	50,000 (5.5)	5,00,000 (54.9)	9,10,000 (100.0)
1,50,000 - 2,00,000	2,50,000 (18.1)	5,55,000 (40.1)	1,00,000 (7.2)	2,70,000 (19.4)	2,10,000 (15.2)	13,75,000 (100.0)
2,00,000 and above	7,50,000 (34.6)	-	2,50,000 (11.5)	8,66,000 (40.0)	3,00,000 (13.9)	21,66,000 (100.0)
Total	14,08,000 (26.4)	6,43,000 (12.1)	5,65,000 (10.6)	12,31,000 (23.1)	14,83,000 (27.8)	53,30,800 (100.0)

Note: Figures in the parenthesis denote percentage of row total.

The above findings have important implications. Firstly, for the relatively smaller units of the sector informal credit is the predominant contributor to the financing of expansion and these units remain almost out of the coverage of the operations of institutional finance. When these units come up with significant amount of their own resources, they had to supplement their own capital with costlier credit. Secondly, whatever amount of institutional credit has been disbursed in the small engineering sector, it appears only the relatively larger units have benefitted from it. But for these units internal resources remain to be the major source of expansion capital funding.

Some observations can also be made if we compare the pattern of financing expansion capital with that of initial capital. First of all, it is found that the share of own capital is higher in initial capital (64 per cent) than that of in expansion capital (50 per cent). Secondly, the contribution of the institutional finance is less in start-up capital (5 per cent) as against the expansion capital (23 per cent). Thirdly, the informal sector loans account almost equally for financing expansion capital (28 per cent) and financing initial venture capital (29 per cent). However, as we will subsequently see, the relative roles of various sources within the informal loan mix are significantly different in two cases.

4.5 Financing of Working Capital

According to the perceptions of more than majority of the entrepreneurs (59 per cent) the main reason for the existence of unused capacity in the sector is the shortage of working capital. It may be testified that lack of sufficient working funds is the most significant factor that puts the small engineering and metalworking enterprises (particularly the 'smaller' units) in a conspicuously disadvantageous position. Other factors do aggravate their problems, but they assume a secondary role.

The composition of gross working capital (i.e. current assets) is made of inventories, debtors and sundry current assets such as cash in hand/bank, advance deposits, etc. The capital structure-wise break-up of this item in its various constituents is given in Table 4.9. As we see inventories (stock of raw material and finished goods, work in progress etc.) comprise more than 77 per cent of the current assets. The promotion of holding of raw materials and finished goods have been found to be affected by the financial resource availability of the entrepreneurs or more precisely by the scale of operation of the units. Significant unrealised amount on account of already delivered goods and services (about 18 per cent) and small amount of cash in hand and/or in bank (only 4.7 per cent^{47/} express the weak base and precarious liquidity position of the enterprises.

However, when the two important sources of financing working capital of the sample units are considered, we find share of suppliers' credit (allowed on raw material) in the current assets is 36.7 per cent and advance received from the customers contributed 8.3 per cent only. Abstracting from other sources of external borrowing and accounting for the trade credits and production advances received by the enterprises, it was found that the own working capital of the sample units is a little more than 75 per cent of their current assets. It is notable that the quantum of credit and advances granted to the units stands greater in comparison to the quantum of credit allowed by the them to their customers.

But significant share of trade credit does not reflect the adequacy of working capital, more so at the low level of customer's contribution. Obviously under such circumstances, the units have to resort to borrowing from other external sources, particularly from the informal sector to meet running and recurring expenditures.

The analysis of working capital structure reveals its fragile composition, inadequate liquidity and considerable dependence on trade credit and production advance. It was noticed that there exists a positive association between these features with the scale of operation, i.e. smaller the firm, weaker the working capital structure.

TABLE 4.9
COMPOSITION OF GROSS WORKING CAPITAL OF THE SAMPLE UNITS

I t e m	Value (Tk.)	% of Current Asset
Inventories	+ 30,38,576	77.3
Cash in hand/bank	+ 1,84,751	4.7
amount receiveable	+ 7,07,557	17.9
<u>Current asset</u>	<u>39,30,875</u>	<u>100.0</u>
Raw-materials received on credit	14,43,850	36.7
Advance received from the customers	+ 4,70,450	8.3
Own working capital	29,57,475	75.2

4.6 Financing of Output Disposal

Marketing of output happens to be a very important factor which influences the production and determines the efficiency of operation of an enterprise. It is often argued, because of smallness in the scale of operation, poor financial position, competition from imported goods and large industry products and inadequate infrastructural facilities, marketing may often become a leading constraint of development. Whilst these general propositions are also true for the small engineering and metal fabrication firms, some distinctive features of the sector regarding output disposal need to be pointed out.

The small engineering units situated in Dhaka City cater mainly to the local need but have a major market outside the capital, covering

rest of the country. The marketing practices of these units may be classified broadly under the following three heads:

- (i) catering (small) individual order;
- (ii) wholesale order supply;
- (iii) subcontracting.^{48/}

We know that the sector is predominantly service oriented. Those units which are engaged only in servicing they usually cater individual orders, placed directly by the customers and they usually depend on the local markets. The units having production and assembling facilities along with servicing can take advantage of the wholesale orders and work as subcontractors of large industries. This group of units have markets of greater geographical coverage (particularly those involved in subcontracting). Table 4.10 gives the distribution of enterprises by their major marketing outlets. Preponderance of the units involved in small job work is explained by the fact, that though many of these units do supply wholesale orders and, occasionally, subcontracting, these do not happen to be their main marketing practise.

Consequently, the small engineering enterprises do not have any marketing wing of their own which dispense with ready goods, as and when approached by the customers. In that case the output marketing strategy centres not around disposal of ready goods and services but around finding appropriate work orders. It may be recalled 25.5 per cent of the responding units mentioned sluggish demand as the main factor inhibiting fuller utilisation of their existing capacity.

In that case it may appear that the problem of financing output of small engineering workshops, if there is sufficient effective demand for the goods and services provided by these enterprises, is essentially problem of financing production. And as we have discussed earlier, a portion of the production cost is covered by the advances paid by the customers. Notwithstanding this, as we have mentioned earlier that 80 per cent of the respondent entrepreneurs

TABLE 4.10
DISTRIBUTION OF UNITS BY MAJOR MARKETING OUTLETS

Major Outlet	No. of Units	Percent
Catering individual orders	33	65.0
Wholesale order supply	12	23.4
Sub-contracting	6	11.6
	51	100.0

have indicated that the necessity of financial assistance is most acute at the preproduction phase. At the same time 12 per cent of the proprietors of the responding units mentioned that financial support will be most appreciated if it is targetted for financing marketing and maintaining stocks (both raw material and ready goods).

The liquidity position of the small engineering units becomes vulnerable when they are sometimes required to sell on credit which involve problems of delayed payment and defaults. During the survey it was found that 32 per cent of the sample enterprises sell on credit or had unrealised amount for already delivered goods or services. And for those who had such pending payments to their credit, 13 per cent of their current asset or 23.9 per cent of the own working capital, i.e. Tk. 7,07,537 constituted that amount. Although the entrepreneurs ruled out the possibilities of default, it was reported that repayment delay in these kinds of transaction is very high, particularly in the case of supplying government orders.

4.7 Analysis of Financial Ratios

To assess the overall financial status and strength of the small engineering and metalworking enterprises, in our study, we have analysed three important financial indices viz. current ratio, liquidity ratio and proprietary-ability ratio.

Current ratio (CR) is a measure of liquidity of a firm, i.e.

$$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

where current assets mean sum of the values of stores and spares, stock in trade (raw-materials, finished goods, work in progress), sundry debtors, cash balances at hand and at bank, loans and advances, and current liabilities mean acceptances, sundry creditors, interest accrued and other liabilities and provisions.

The current ratio of the sample units on average has been found to be 1.65 indicating that the current assets of the units are only little more than $1\frac{1}{2}$ times the current liabilities. Obviously, it is an expression of a very modest financial situation as in ideal case CR should figure between 2.5 and 3.0. Thus, the estimated CR of the engineering units reveal that their strength of working capital and their solvency in regard to current operation are bordering on the margin.

Current asset ratio is usually discussed along with liquidity ratio (LR) which is a more severe test for liquidity as strictly liquid assets are considered and it more precisely expresses the adequacy of working capital. LR is worked out as follows,

$$LR = \frac{\text{Cash, Immediately realisable goods, Debtors loans and advances considered good}}{\text{Current Liabilities}}$$

The average LR for the responding units has been estimated to be 0.68 which expresses their stringent financial position. The

sample engineering units can mitigate their immediate liabilities to the extent of 68 per cent by the quick assets at their disposal. The LR and CR decline noticeably with decrease in scale of operation (in terms of value added) indicating more vulnerable liquidity position of the smaller units of the sector. Considerable frequent purchase of raw material confirm the assertion of entrepreneurs and our foregoing analysis that the small engineering and metalworking sector (more so the 'smaller' among the 'small') are facing financial difficulties due to liquid resources constraint.

Under the circumstances it becomes necessary to evaluate the prospect of the sector in terms of long term financial strength, index of which is happens to be proprietary-liability ratio (PLR). PLR is worked out as

$$PLR = \frac{\text{Net Worth}}{\text{Total Liabilities}}$$

where net worth means present value of assets minus all liabilities and total liabilities include both current and long-term liabilities. PLR is also an expression of extent of entrepreneur's own investment and the extent of borrowed funds.

The average value of PLR has been estimated to be 1.83. It means that the share of the entrepreneurs to the total assets of the sample unit is about 65 per cent and the level of total indebtedness of the units to various firms of creditors is around 35 per cent. The higher the PLR, the more comfortable is the position of the creditors because it means they can be called up to suffer losses only if the losses are very high. On the other hand, a higher PLR than CR may be interpreted as the sample units are better endowed financially in long term sense in comparison to meeting its current liabilities.

The low liquidity ratio does not contradict high rate of profit as we have seen significant portion of profit is being used for refinancing of investment. The entrepreneurs attempt to compensate

the inadequacy of their working capital by increasing/accelerating its turnover. Concomitantly, it appears that the entrepreneurs in their attempt to optimize resource allocation and minimise cost of borrowing are investing their own funds relatively more in fixed assets which in turn is enhancing their creditworthiness in the credit market.

On the whole, the operational financial position of the small engineering and metalworking units can not be termed anything better than modest, although, there are indications that the long term financial position is quite prospective, provided proper arrangements can be made for fresh capital inflow to the sector for easing the present operational financial difficulties.

Significant reliance of the small engineering and metalworking sector's entrepreneurs on internal sources in financing initial capital requirements and on reinvestment of profits in financing expansion capital reflects reasonable rates of return accrued to them from their enterprises. But internal financing through reinvestment of profits, sale of property, and other own sources is hardly enough to meet their purpose because of insignificant retained earnings, high consumption of profits, ever increasing production cost, considerable under-utilisation of production capacity, repayment delays, etc. In such situation limited use of external funds by the entrepreneurs is not a matter of choice, but a consequence of their restricted access to such funds flowing particularly from formal credit market. As a consequence the small entrepreneurs of the sector are left with no other alternative but to fall back on informal sector non-institutional lenders even though loans obtained from them are inadequate and bear high interest rates.

Under the circumstances, the growth and expansion of the small engineering and metalworking sector, particularly during their initial stage is likely to be extremely difficult unless arrangements are made to ensure adequate flow of formal credits to the sector, which

may remain a far cry unless the formal credit market is consciously developed to suit the circumstances and geared to meet the specific needs of the enterprises. Along with this, it may not be possible and/or desirable to avoid altogether financing by informal financial intermediaries at the present state of affairs. Given a low rate of savings, informal sector lenders have a significant role to play in mobilising resources and investing them efficiently. Thus, it becomes imperative to analyse the modes of operation and their implications of the financial intermediaries (both formal and informal), ascertain their comparative advantage and suggest measures so that they can be made a more constructive component of development financing for small engineering and metalworking sector.

CHAPTER 5

THE NATURE AND MODALITIES OF INFORMAL CREDIT MARKET OPERATIONS IN
IN THE SMALL ENGINEERING AND METALFABRICATION SECTOR

Vindicating the role played by the informal credit markets in the least developing countries, three fundamental distinguishing characteristics of the ICMs are usually mentioned in the literature. First, the transaction cost of borrowing and lending of ICMs are lower than those of formal sector institutions, serving the same clientele. Second, ICMs are extremely successful, either de juri or de facto, in avoiding administrative controls on lending and borrowing rates which so often shackle formal sector institutions. Third, ICMs normally succeed in escaping completely from implicit taxation of the financial sector which arises from the government's preempting of funds at sub-equilibrium interest rates. In short, ICMs are distinguished by their comparative advantages in relation to some factors which restrict the level of financial intermediation in the economy.^{49/}

Discussion contained in the foregoing chapters established that non-institutional financial sector or ICM covers significant portion of the financial activities of the small engineering and metalworking enterprises. Virtually remaining outside the ambit of institutional finance, these enterprises draw upon the ICM to finance a vast portion of their initial capital, subsequent fund for expansion and working capital need. Even a cursory look at the operations of informal financial sector with the small engineering and metalworking enterprise tells us it is a heterogeneous residual sector comprising different entities, such as friends and relatives, suppliers and customers, moneylenders and other investors, who provide capital in innumerable ingenious ways, often linked to supply, machinery, employment and customers (deriving indirect financial or non-financial benefits) or overtly taking the form of usury capital

directly charging high interest rates or discreetly taking the form of profit sharing). In an attempt to have a better insight of the structure and operation of the ICM, the present chapter analysing each of the informal loan incidences of the sample enterprises over the last five year time period (1981-85) concentrates on the issues relating to incidence of informal loans, identification of the lenders, sources of funds and their uses, nature of credit relationship and market segmentation, level and structure of interest rates, collateral need, transaction cost and general trend of evolution of the ICM in the small engineering and metalfabrication sector. On the whole, we will try to consider the actual mechanism and actors through which informal finance is made available to the borrower-entrepreneurs of the sector.

5.1 Flow of Informal Fund Through the Sample Units

Our survey revealed that out of the 51 sample enterprises 32 units have resorted to informal sources of fund, at least once, for various purposes during the period covered (1981-85). The aggregate figures relating to inflow and outflow of informal credit funds through the debtor enterprises have been depicted in Table 5.1. The total amount borrowed by these units have been estimated to be Tk. 19,65,000. It means, whilst 62.7 per cent of the enterprises are indebted to informal creditors, flow of fund per enterprise amounts to about Tk. 38,530 during the given period.

According to our estimates, on account of these informal loan transactions, the amount payable by the debtor enterprises to their creditors, at the end of 1986, is Tk. 29,29,000 including Tk. 10,14,000 as interest.^{50/}

The amount repaid by the debtor units during this period as against each of the loan cases adds upto Tk. 10,97,000 of which Tk. 8,02,000 as principal and Tk. 2,95,000 as interest.

TABLE 5.1

**INFLOW AND OUTFLOW OF INFORMAL CREDIT FUNDS THROUGH
32 INDEBTED SAMPLE ENTERPRISES DURING 1981-85**

Amount of loan taken (Tk.)	Amount to be paid (Tk.)			Amount paid (Tk.)			Amount outstanding (Tk.)		
	Princi- pal	Inte- rest	Total	Princi- pal	Inte- rest	Total	Princi- pal	Inte- rest	Total
1965000	1965000	1014000	2971000	802000	295000	1097000	1163000	719000	1882000

The total outstanding amount on account of the reported loan cases works out to be Tk. 18,82,000 which includes Tk. 11,63,000 as principal and Tk. 7,19,000 as interest.^{51/}

From Table 5.1 it appears that the debtor enterprises during the period could pay back almost 41 percent of the principal amount and 29 percent of the interest accrued. The relative promptness of the debtors in repaying the principal part of the net amount payable by them is well expected, as it is the result of an attempt on behalf of the debtors to minimise their total payable amount by reducing the principal component.

5.2 Incidences of Informal Loans

In the 32 indebted units, a total number of 62 loan incidences were recorded. Distribution of units by the number of times loan taken (Table 5.2) shows that the three-fourths of the indebted units have had resorted to informal financing only once or twice over a five year period. Obviously, this is not a very high incidence rate. Given the acute financial need of the enterprises, this may be possibly explained by the overall paucity of funds in the ICM, and/or the cost of such loans has restrained the entrepreneurs from more frequent borrowing.

TABLE 5.2

DISTRIBUTION OF UNITS BY LOAN INCIDENCE

No. of times loan taken	No. of units	No. of incidences
Once	14	14
Twice	10	20
Thrice	4	12
Four time	4	16
	32	62

Table 5.3 presents the incidences of informal loan operation by years of their execution. From the table a discernible trend may be identified. Whilst 1983 is the peak year, when more than 32 per cent of the loan transactions took place, number of loan incidences markedly increased from 1981 to 1983, and then secularly declined in the following two years.

During 1981-85 33 of the 51 sample enterprises came into being (refer to Table 2.5). If we analyse the structure of the units by their year of establishment (during this time period), we find that in 1982 maximum number of 36 per cent of the units were established followed by a uniform decrease in number. Which means that there is a correspondence with a one year time lag between the trends of establishment of new units and loan incidences. Thus, it may be suggested, there is a strong association between numerical increase in number of enterprises in the sector with that of demand for credit, resulting into higher degree of informal loan transaction.

TABLE 5.3

INFORMAL CREDIT INCIDENTS BY YEARS OF EXECUTION

Year	Loan incidences	
	No.	%
1981	4	6.5
1982	10	16.1
1983	20	32.3
1984	18	29.0
1985	10	16.1
	62	100.0

5.3 Size of Informal Loans

Whilst frequency of borrowing may be an indicator of level of activity in the ICI, but it becomes more meaningful when these credit operations are considered with respect to size of loans. The average size of loan for the 62 operations has been found to be Tk. 31,694 (see Table 5.4), however, a marked variation exists amongst the loan sizes. Bulk of the loans (42 per cent) is 'small' loan ranging between Tk. 10-25 thousand and controlling 21.4 per cent of the credit flow. The second most important group of loan operations (30.6 per cent) belongs to Tk. 25-50 thousand range, through which 28.8 per cent of the volume of credit was channellised. Thus, 72.5 per cent of the loan incidences are smaller loans (less than Tk. 50,000) and they account for 50.2 per cent to the total credit amount. Predominance of larger number of small loans may have resulted from a number of factors. Since the borrowers from the informal sources are basically the entrepreneurs of relatively modest means, their economic standing to some extent determined their creditworthiness in the

TABLE 5.4

DISTRIBUTION OF INFORMAL CREDIT OPERATIONS BY LOAN SIZE

Size of loans (Tk.)	Loan incidences		Total amount lent in the range		Average size of loan (Tk)
	No.	%	Taka	%	
10,000 - 25,000	27	41.9	4,20,000	21.4	25,554
25,000 - 50,000	19	30.6	5,65,000	28.8	29,737
50,000 - 100,000	13	30.0	6,55,000	33.3	50,385
100,000 - 200,000	3	6.5	3,25,000	16.5	8,33
	62	100.0	19,65,000	100.0	31,694

ICM and subsequently limited the possibility of availing themselves bigger amount of credit. The higher incidence of smaller loan is an expression of necessity of small loan for short period required for mitigation of working capital deficits and other operational expenses. The possibility that the lenders favour disbursement of funds in small packages in an attempt to have a better leverage over the borrowers may not be totally ruled out. However, it also goes without saying that the overall scarcity of loanable funds may be one of the primary factors determining the size of the loans.

5.4 Extent and Potential of the ICM

Whilst the researchers quite categorically describe the credit market in the developing countries as dualistic, they are not so unanimous regarding the nature of the ICM in these countries. Thus, we find abundance of attributory definitions such as 'monopolistic', 'competitive', 'competitive monopolistic' etc. Without going into any theoretical discourses in this regard, in our study by addressing ourselves to the issue of nature of the ICM in the small engineering sector in Bangladesh, basically we wanted to generate some idea rela-

ting to the extent and potential of the ICM in terms of number of active lenders and size of available loanable fund. As it is difficult to make any rigorous estimates regarding the relevant absolute figures, we have attempted to produce some indicative quantitative figures which would help us to make some assumptions in this regard.

With a view to give the potential of the ICM, and in some sense to assess the extent of 'monopolisations' we tried to find out the number of persons who are presently active as informal creditor, or may potentially become one. In order to do so we have asked the debtors the number of persons approached by him to get the loan before he could successfully negotiate it. It was revealed that during the course of 62 loan transactions, a total number of 321 persons were approached by the debt seekers, which means on average more than 5 persons (deemed potential by the debtor) were available to be requested for loan. Taking into consideration the possible diverse contacts which an urban loan seeker has, more so when he is a proprietor of a modern enterprise, this figure, in our opinion is not so big. However, as we see in Table 5.5 that in 16.1 per cent of the loan cases the respondent had to approach 5 to 10 persons and in 6.5 per cent cases more than 10 persons had to be found before the respondent could produce a loan.

TABLE 5.5

DISTRIBUTION OF LOAN CASES BY NUMBER OF PERSONS
APPROACHED FOR GETTING THE LOAN

Number of persons approached	Loan cases		Number of persons approached in the range
	No.	%	
1 to 5	48	77.4	163
6 to 10	10	16.1	72
More than 10	4	6.5	86
	62	100.0	321

But the number of persons needed to be approached would have increased if these potential creditors did not have ready funds at their disposal to meet the financial demand of the loan seeker. According to our survey the potential financial demand of the concerned respondents amounted to Tk. 25,83,000 whereas the actual amount of fund supplied by the creditors, as has been mentioned earlier, was Tk. 19,65,000 which is about 76.1 per cent of the requested sum. This signifies the limitation of loanable funds in the ICM and to some extent explains the high rate of interest often charged by the informal creditors.

It is alleged that the ICMs are 'segmented' or 'fragmented' along various patronages and lineages, local political groups, trading and production lines and geographical boundaries. In the course of our study we have tried to explore to what extent the ICM of small engineering sector embodies the segmentation process.

Evidence suggest that the operations of ICM of the small engineering and metalworking sector is perceptively compartmentalised along the line of activities of the sector. 22.5 per cent of the lenders themselves are engineering workshop owners, whereas 33.7 per cent of the lenders are associated with sector in one form or another (either on the input side or on the output side).^{52/} Moreover, out these of total 56.7 per cent engineering sector based or associated lenders, 35.5 per cent are have direct production linkages with the debtor's units. These close circuit operations have found to be cemented by various types of socio-economic and political bondages.

The segmentation of ICMs results basically from the segmentation in the flow and interpretation of information. Due to lack of acquaintance with other potential lenders (including the financial institutions) the debtor approaches only them who are known to him through his business, whereas the lender try to minimise his lending risk by giving money to the activity best known to him. Thus, the segmentation is perpetuated.

In the light of the above analysis, if we add to the number of engineering sector based and associated lenders, the lenders who are relatives of the borrowers and those living in close proximity to the surveyed areas, the level of segmentation will appear to be more pronounced. In that sense, approximately 69 percent of the lenders have access to information relating to the sector in one form or another (by experience of running similar enterprise, by being involved in peripherally associated activities, by kinship relation and by living in locational proximity).

5.5 Sources of Informal Credit and Identification of the Lenders

Whilst analysing sources of fund, it is a general practice in the literature to categorise the lenders in terms of 'friends and relatives', 'professional moneylenders', 'well to do people', etc. This type of classification, obviously, can not adequately capture all the diverse lineages through which fund of each of the lenders are made available to each of the borrowers. In our study besides retaining the classification in the above line, we have attempted explore other societal features of the lenders with a view to draw a more comprehensive profile of the real actors of the ICM in the small engineering sector. Basically, the approach concerns itself in tracing the links which bind the creditors with the debtors and their business.

5.5.1 Sources of informal credit

Similar to many other sectors, the major contributor of informal credit in the small engineering and metalworking sector (in terms of number of cases as well as loan amount advanced) remains to be the group 'relatives' (58 per cent) followed by 'friends/neighbours' (32.3 per cent). Only in 4 cases (6.5 per cent) it was mentioned that the lender is involved in professional moneylending and in 2 cases (3.2 per cent) the lender happened to be a rich man, (who is neither a professional moneylender nor a friend/relative/neighbour of the borrower) (see Table 5.6).

TABLE 5.6

DISTRIBUTION OF LOAN CASES BY TYPES OF INFORMAL
CREDITORS AND THEIR RELATIVE AREAS

type	Loan incidences		Amount advanced		Average size of loan (Tk.)
	No.	%	Taka	%	
Relatives	36	58.0	8,62,000	43.9	23,945
Friends/Neighbours	20	32.3	6,03,000	30.7	30,150
Moneylenders	4	6.5	3,05,000	15.5	76,250
Rich persons (other than the moneylenders)	2	3.2	1,05,000	9.9	97,500
	62	100.0	19,65,000	100.0	

However, it is significant to note that there is a variance in the proportion of loan cases with that of amount lent by the respective group. We find whilst the moneylenders and the rich persons account for 6.5 per cent and 3.2 per cent of the loan cases, they contribute, 15.5 per cent and 9.3 per cent respectively of the total inflow of informal credit. Thus, an assessment of the extent of existence of the moneylender (as well as other rich persons) based on only frequency distribution of loan cases will give us a deflated idea of the role played by these groups of lenders.

In addition, the average size of the loan packages provided by each of the groups varies amongst themselves. Whilst the average size of loan extended by the relatives or friends has been worked out to be Tk. 23,945 and Tk. 30,150 respectively, the average size of loan provided by the moneylenders or rich persons is about 3 times more than that.

5.5.2 Occupational structure of the lenders

In pursuance of our attempt to identify the informal lenders in the small engineering sector we tried to gather information relating to the primary occupation of the persons who provided credit to the debtor enterprises. Table 5.7 shows distribution of lenders by their occupation.

As the table reveals that the service holders figure most prominently (32.3 per cent) amongst the creditors. Amongst these service holders, the persons on government or semigovernment services are the main contributor (19.3 per cent) of informal credit. Incidentally, it was found that 4 of the 20 service-holder creditors were working abroad (3 in Middle East and 1 in Europe). The finding of service holders appearing to be a major credit supplier in the sector obviously has important policy implication in the light of domestic resource mobilisation. It appears that majority of the service-holders belongs to the 'friends and relatives' group indicating that small bundles of personal savings of fixed income earners are being converted into industrial investments through informal social intermediation. However, this is not to say that these investments are not bringing any returns to the creditors and sources of these funds are not necessarily the savings generated from the earned incomes of the service holder creditors. (We will return to these issues later when we will be discussing interest rates and real origin of the advanced amounts).

The second most important group of lenders (25.8 per cent), associated with diverse kinds of trading activities are closely followed by the creditors involved in manufacturing and engineering activities (25.7 per cent). It is interesting that the ICM of the small engineering and metalworking sector is being able to attract funds from creditors who deem it more beneficial for them to invest their surplus in the sector instead of in their own business. However, here again the above statement will be an oversimplification of reality

TABLE 5.7

OCCUPATIONAL STRUCTURE OF THE INFORMAL LENDERS

Occupation	No. of lenders	%
1. Service	20	32.3
Govt./Semigovt.	12	19.3
Private	4	6.5
Abroad	4	6.5
2. Trade	16	25.8
Machinery supply	4	6.5
Raw material supply	2	3.2
Hardware dealing	3	4.8
Wholesale grain dealing	2	3.2
Speculative trade	2	3.2
Consumer goods	1	1.7
General	2	3.2
Transport	4	6.5
4. Construction	4	6.5
Agriculture	2	3.2
6. Manufacturing and engineering	16	25.7
Motorworkshop	2	3.2
Engineering and metalworking enterprises	14	22.5
	62	100.0

if we do not take into cognisance the types of business the creditors are involved in (e.g. supply of machinery, supply of raw materials, etc.), which give them an added advantage as financiers. This remains also true for the creditors such as engineering and motorworkshop owners.

The other two equally important group of creditors (6.7 per cent) are people engaged in construction (they are government enlisted contractors) and transport sector (they are owners of bus, minibus and autorickshaws). The area which figures least (3.2 per cent) in the occupational structure of the creditors, as may be expected, is agriculture.

Analysis of the occupational structure of the creditors revealed that a person who at the first instance was identified by the borrower as a professional moneylender, on closer scrutiny, was found to be a speculative trader or involved in wholesale trading as well.^{53/} On the other hand, the analysis also revealed that the creditors are drawn from diverse professions signifying a certain level of intersectoral mobility of capital in the ICM of the sector.^{54/}

5.5.3 Production linkages between the informal creditors and the debtors

As we analyse the occupational structure of the informal lenders, it can not escape our notice that activities of the lenders are closely associated with the small engineering and metalworking sector (either through backward linkages or through forward linkages). Here one ponders whether the association occupations of the creditors have any relevance for the credit relations which exists between the debtors and creditors. In other words, if the creditor is attached to the debtor's enterprise through any production link, then the creditor might have felt interested to finance the capital need of the debtor with a view to enhance his original business, ensuring a safe return of the lent amount (may be along with some dividend). It is reckoned that these types of credit relations may remain well concealed within the classification of lenders as 'friends, and relatives' or as 'service holders' and 'traders'.

Having this in mind, we tried to establish how many of the creditors are directly associated with their respective debtors enterprises through input supply (machinery and raw material) and output disposal (marketing agent or consumer). Evidence gathered in this regard have been presented in Table 5.8.^{55/} The table shows that a considerable portion (35.5 per cent) of the creditors has direct production related associations with the borrowing units. The most prominent amongst this group of creditors (22.6 per cent) appears to be people who regularly avail themselves the goods and services provided by the units (e.g. owners of hardware stores, automobile workshops, bus, minibus, subcontractor engineering units, etc.).

TABLE 5.8

DISTRIBUTION OF CREDITORS BY THEIR PRODUCTION
LINKAGES WITH DEBTOR ENTERPRISES

Type of relation	No. of creditor	%
Supplier of raw material	2	3.2
Supplier of machineries	4	6.5
Permanent customer	14	22.6
Marketing agent	2	3.2
No direct linkage	40	64.5
	62	100.0

Whilst a certain degree of interlocking of the informal credit market relations becomes evident from the above data, it is necessary to distinguish the credits provided by this groups of creditors from the traditional 'trade credit' concept. The credit provided by the concerned group of creditors to their clients are in the form cash

credit, which is not necessarily being used to finance the particular goods and services provided by or providing to the creditors. (This type of arrangement appears to go in favour of the creditors about which we discuss later). On the other hand, had not there been those production linkages between the concerned group of creditors and the debtors, the necessary credit information flow resulting into credit transaction would not have taken place. Credit relation in these cases thrives on the production linkages between the concerned group of creditors and the debtors, the allowing credit information flow result into credit transaction. Thus, credit relation in these cases thrives on the production linkages between the creditors and the debtors, but exists relatively independent of those linkages.

5.5.4 Exploring the 'dependency' of the debtors on the creditors

It is a common wisdom that 'dependency' is one of the main attributes of the informal credit relations. It is usually argued that the creditors, taking advantage of various types of 'patron-client' relationship, emanating from diverse socio-economic and political phenomena, appropriate high rates of interest from their clients. To explore this issue in the context of our study we asked the respondent entrepreneurs whether they feel themselves dependent or obligated to the creditors for any particular reason, having impact on their credit relation.

The responses in this regard, tabled below (Table 5.9) exposes 58.1 per cent of the debtor-entrepreneur maintain that there exists no such bond with their creditors, which could have influenced the terms and conditions of the loans negotiated. The most important form of dependence, as recognised by the respondents, appears to be the economic one (19.4 per cent). According to the respondents, as they are linked to the creditors for various reasons, they had no other choice but to accept the ground rules of the loan transaction. The creditors who enjoy this kind of advantage over the borrowers include the machinery and raw material suppliers, subcontractee engineering workshop owners and other permanent customers. Social bondages

TABLE 5.9

DISTRIBUTION OF LOAN CASES BY THE FORM OF DEPENDENCE
OF THE DEBTORS ON THE CREDITORS

Form of dependence	Loan cases	
	No.	%
Economic	12	19.4
Social	10	16.1
Political	4	6.4
No such dependence	36	58.1
	62	100.0

also figure prominently (16.1 per cent) in the dependent credit relation. It was reported that borrowers, for diverse social reasons, feel themselves attached to the sources of loan, for assistance extended to them previously or in anticipation of probable helps. These favours include matrimonial matters, getting job for the son or brother, having common economic interest elsewhere, etc. and the patron-creditor in these cases are usually the relatives and friends. Interestingly, 4 of the borrower respondents (6.4 per cent) acknowledged that the existing political environment of the study areas have prompted them to avail loans from their respective creditors. The respondents reported that these creditors are themselves big engineering workshop owners and trade union bosses, having high level connections with the bureaucracy and ruling party. By virtue of their socio-political position, these creditors control the supply of electricity (particularly illegal connections), moderate sale of workshop possessions, manipulate with the distribution of work orders of the subcontractees, etc. As the borrowers are virtually helpless against

the possibilities of remaining without electricity and work order or evicted from the workshop premise, they had to agree to the loan propositions of their creditors.

Thus, we find that the so called 'patron-client' relation persists in a considerable extent (though in a much more subtler forms than in the rural moneylending activities) in the ICM of the small engineering sector in 41.9 per cent cases. However, it can not be said that the patron-creditors all belong to a particular type or group, though the role of the people engaged in the activities related to the sector (particularly the engineering workshop owners) are relatively pronounced in this respect. On the other hand, it appears, as may be expected, a pattern cuts through the structures of sources of loan and types of dependence between the debtors and the creditors.

5.6 Sources of Informal Credit Funds

One of the features of available literatures on informal credit transactions in Bangladesh is that, whilst discussing sources of informal funds they limit themselves to the immediate sources of the funds, usually, with respect to the occupation of the lenders or their relationship to the borrowers. Alternatively, what is necessary is to trace the ultimate (original) sources from which the money flows. Obviously, it would necessitate generation of information relating to real incomes and expenditures of the lenders. As such cooperation in this regard is not expected from the lenders, we had to satisfy ourselves with the perceptions of the debtors regarding to origin of lenders' money.

Table 5.10 presents the perceptions of the loanees about the sources of funds advanced by the creditors. Whilst, in 19.4 per cent cases the respondents were not sure (or did not want to disclose) about the real sources of the lenders' funds, it emerged that personal saving of the creditors is the single most important source (41.9 per cent) of the lent amount. In 14.5 per cent incidents, the loanee feels that the lender has diverted a portion of his own running cash capital into financing of the debtor's enterprise. Foreign remittances

TABLE 5.10

SOURCES OF INFORMAL CREDIT FUNDS ACCORDING TO THE
PERCEPTION OF THE BORROWERS

Source	Loan cases	
	No.	%
Personal savings	26	41.9
Business capital	9	14.5
Selling landed property	2	3.2
Foreign remittances	4	6.5
Unearned income	9	14.5
Not known	12	19.4
	62	100.0

account for 6.5 per cent of the loan cases, whereas funds generated through selling of agricultural lands - 3.2 per cent. The role of 'black incomes' in the ICM is a much talked about theme and, incidentally, in 9 cases (14.5 per cent) our respondents strongly asserted that their loan demands were met by the 'black liquidity' of the creditors.^{56/}

It was found that the creditors those who have been identified by the respondents as 'black money lenders' are mainly service holders or involved in speculative trading. On investigation it was found that a significant portion of these lenders are humble service-holders in different government and semi-government organisations and departments, viz. Power Development Board (PDB), Water and Swearage Authority (WASA), Telegraph and Telephones, (T & T), etc.^{57/} It is quite clear that almost all of the money advanced by those types of financiers has been 'earned' by embezzlement of public funds and taking bribes by using their functional positions.

Apparently, savings account for the substantial portion of the informal credit funds,^{58/} but it is difficult to form a judgement within the framework of the present study, whether this enhanced role of the savings in a result increased money supply, increased money circulation or increased use of a given volume of savings. If we accept channelling of funds generated from sale of agricultural lands to the engineering sector, as an expression of interface between rural and urban economy, then it may be said that relative share of such transfers is not very sizeable, particularly when compared with inter-economy remittances. Granting that in the 'segmented' ICM of the sector, much of the reallocated running capitals or other business came from activities having vertical or horizontal production linkages, along with other dependent relationships, it may still be said a considerable portion of the flow of these funds has been caused by the productivity and rate of return differentials.

5.7 Purposes of Informal Lending and Uses of Fund

Where the informal money goes is a question which has quite important policy implications relating to mobilisation, allocation and equitable use of informal capital market funds. Accordingly an analysis of the purposes of negotiated informal credits and their actual use pattern is also warranted when we examine the characteristics of ICM operation in the small engineering sector.

There are evidences that due to deplorable economic conditions, the borrowers often do not use the funds for the purposes for which they were negotiated and thus capital borrowed for financing one productive purpose is exploited to meet other competing production demand or even used to mitigate emergency consumption need. Keeping this in mind, in the present study whilst gathering relevant data, we decided to explore the perceived dichotomy between apparent purpose of giving loan and the actual use of it. Since our study kept informal loans taken and used to meet consumption ends beyond its purview, what we intended to ascertain is whether consumption loans are utilised

for financing production or loans negotiated for production purposes are used for consumption.

Evidence as presented in Table 5.11 suggest that, except in two cases, loans were actually used for the purposes for which they were taken. This finding do not come as surprise as it is quite natural that the borrower will use the fund appropriately for which he is paying a high cost. On the other hand, knowing the proximity which exists between the lender and borrowers in terms of social relationship, place of residence, sphere of activity, etc. it is also expected that the lender, in order to ensure his returns, will closely oversee that his money is properly utilised. The two cases where loans have been taken on account of purchase of machineries and later used for financing running capital may be explained by

TABLE 5.11

DISTRIBUTION OF LOAN CASES BY THEIR NEGOTIATED PURPOSE AND ACTUAL USE

Activities	Loans taken for the purpose		Loans actually used	
	No.	%	No.	%
1. Expansion and renovation of workshop	4	6.5	4	6.5
2. Purchase of machines	44	71.0	42	67.7
3. Purchase of equipments	0	0.0	0	0.0
4. Purchase of raw materials	2	3.2	2	3.2
5. Running capital	12	19.3	14	22.6
	62	100.0	62	100.0

the facts that one was interest free loan provided by a relative, who probably did not have the urge to control the use of fund and in the other case the sources was a service-holder working abroad who did not have the opportunity to monitor the form of utilisation of the loan.

Table 5.11 reveals that the bulk of the loans have been for extended for (71.0 per cent) and used in (67.7 per cent) purchasing of machineries. If we take frequency of lending for a particular purpose as a proxy of agreeability of the lender to finance such activity, then, it may be said that the informal creditor is most ready to finance that portion of the fixed assets which will enhance the viability of the borrowing unit (guaranteeing him promised returns), will play the role of undeclared collateral and in the event of non-repayment of loan may be easily disposed off to compensate the default amount. As we will discuss later that financing of fixed asset components by the lenders are very much organically built into the informal lending practices, where a significant section of the creditors opt for short term profit sharing arrangement.

The second most important purpose (19.3 per cent) and use (22.6 per cent) appear to financing running (working) capital. The stringent working capital position of the small engineering units has been mentioned earlier. Obviously, the borrowers as well as other potential borrowers would have liked to find more funds flow into the sector under this head. The relative riskiness of financing the liquid component of the working capital probably have deterred the creditors from channelling their funds for the purpose. Interestingly, a considerable portion of the borrowed running capital funds came from the sources identified by the borrowers as 'black money' (in 6 cases out of 14).

Relative shares of financing expansion and renovation of workshops and purchase of raw materials were modest (8.5 per cent and 3.2 per cent) respectively).

It was also found that the entrepreneurs could not plug into their loan packages any loan negotiated for purposes other than the operation and development of their units.

5.8 Forms of Informal Lending Practices

Within the limits of its operation, ICM in the small engineering and metalworking sector demonstrate varied and ingenious practices of lending. Firstly, different forms of informal lendings may be broadly classified under two broad groups relating to their cost, viz. the cost free loans and the loans involving costs.^{59/} Secondly, the loans involving costs to the borrowers may be grouped as loans with stipulated interest rates and the loans without stipulated interest rate but accruing financial benefits to the creditors.^{60/} Thirdly, the loans without stipulated interest rates but accruing financial benefits may be again distinguished by their specific forms of benefit generation for the creditors.

The informal loan incidence practice format has been presented in Table 5.12. As the table exposes, in the overwhelming number of cases (85.5 per cent) the borrower has to repay the entire loan amount plus some interest (directly or indirectly). Only 9 out of the 62 informal incidences (14.5 per cent) were so called 'cost free'.

In the mix of loans involving costs, the loans without stipulated interest rates appear to be dominant (48.4 per cent of the loan incidences and 56.6 per cent of the loans involving costs). However what is more noteworthy is the incidence of a sizeable number of loan cases with stipulated interest rates. It seems that economic compulsions have, to a great extent, rationalised the religious and social values relating to usury.^{61/}

Our field investigation revealed that there exists a type of informal loans, which are ostensibly 'cost free' (as they do not have stipulated interest rates) but the credit relations in these cases subsumes a variety of arrangements (either negotiated earlier

TABLE 5.12

DISTRIBUTION OF LOAN INCIDENCES BY THEIR FORM OF LEND

Types of lending	Loan incidences	
	No.	%
1. 'Cost free' loans	<u>9</u>	<u>14.5</u>
2. Loans involving costs	<u>53</u>	<u>85.5</u>
(a) Loans with stipulated interest rates	23	37.1
(b) Loans without stipulated interest rates but accruing financial benefit to the creditors	30	48.4
i) Free servicing facilities to the creditor	10	16.1
ii) Servicing of the creditor's orders at discount rate	6	9.7
iii) Supply of machineries by the creditor at a mark up price	2	3.2
iv) Profit sharing arrangement	8	12.9
v) Lump sum return	4	6.5
	<u>62</u>	<u>100.0</u>

or forced into later) which accrue financial benefits to the creditors. In this type of lending practices, five broad forms may be identified, viz.

- (a) providing free servicing facilities by debtor to the creditor
- (b) servicing of creditor's orders at discount rate
- (c) supply of machineries by the creditor at a mark up price
- (d) temporary profit sharing arrangement
- (e) payment of a specified sum (more than the principal amount).

Among the above mentioned lending practices the most prominent form (about one-third) has been found to be providing free servicing facilities by the debtor enterprises to the creditor. The creditors here are involved in activities which usually avail services of the engineering workshops. However, we also find such a group of debtors who do not service the creditors' job orders totally free, but have to do it at discounted rate of charges. These creditors regularly, in relation to their primary activities, make use of this provision and account for one-fifth of the loans where the creditors take financial benefits other than the interests. This form of informal lending practices along with the form of entering of the creditors in profit sharing arrangements (for a contracted period) with the loanee proprietors of the engineering workshops are perhaps forms of informal lending unique to the sector. Under the profit sharing arrangements, owner of the unit retains the full proprietorship of the business (along with machineries financed by the creditor), but regularly pay the creditor certain part of the profit of the enterprise over a specified period.^{62/} The number of cases belonging to this group is more than one-fourth of the of number cases without stipulated interest rates but accruing financial benefit to the creditor. This form of lending is mostly practised by engineering workshop owners and machinery suppliers.

Another sector specific (though not so significant) form of informal lending is the case where the creditor is a engineering machinery dealer or his agent who supplies machineries at a premium price but does not make the sale deal contingent to the loan transaction.

The form of informal lending where the debtor promises to pay back the creditor a lump sum (which is more than the principal amount) is probably also popular in other ICMS. In our study, It accounts for a little more than 13 per cent of the covert financial benefit extraction processes and only 6.5 per cent of the total loan incidences.

Thus, we see that the majority of the informal creditors are 'compensated' for temporarily parting with their money by the goods and services provided by the debtor units, but to form a judgement regarding the size of the premium accrued by the creditors through the diverse types of lending practices as well as to have a better understanding for the ICM operation in the small engineering sector we need to scrutinise the terms and conditions under which the loans were negotiated.

5.9 Terms and Conditions of Informal Borrowing

Keeping the general features of informal lending practices in the small engineering metalworking sector in mind, in this section under terms and conditions of informal borrowing we intend to discuss the collateral need, repayment schedule including grace period, repayment period, number of installments. The issue of interest rates, being one of the key aspects of informal credit market operation, has been discussed separately in the following section.

Hypothetically the value of collateral (c) should completely cover the value of loan (L) plus interest (r), i.e. $(1 + r)L = c$. Our practical observations show that informal loans in the sector are virtually made without any collateral. Only in two cases the debtors had to mortgage gold ornaments to procure loan. In both the cases value of the collateral, as mentioned by the respondents was more than the loan size.

Readiness of the creditors to extend loan without any collateral may be explained by their trust upon the debtors and the closeness of relation in all its forms which exists between them and their debtors. On the other hand, in the above equation as the value of c approaches zero, the implicit rate of interest tends to rise, compensating the value of the loan amount is as much shortest time period as possible.

Interestingly, the ambivalent legal status of the informal lendings are brought out by the fact that only in twelve (20 per cent) cases document was drawn up between the debtors and the creditors formalising the loan transaction. The document was a agreement typed in a non-judicial stamp paper but not registered with the court. The rest of the loan cases did not have any legal instruments of transaction.

60 out of the 62 loan transactions did not have any specified time period allowed to the debtor till the payment of first installment. In the two cases of exception the grace period was six month and one year.

Similarly, loan negotiations did not specify the number of installments in which the loans have to be repaid, excepting in three cases where the creditors demanded the loans should be paid back at a time in one installment. On the other hand, in a situation where the number of repayment installments are not determined, the issue of value of each of the installments becomes redundant.

Perhaps the time frame of repayment is a point where the informal loan transactions demonstrate relative rigidity. Even here also only in 22 loan cases (35.5 per cent) the debtors are supposed to repay their loans within a stipulated time period. Distribution of these 22 cases reveals that 2 loans were to be repaid within 3 to 6 months, 6 loans within 6 months to 1 year, 10 loans within 1 to 2 years and 4 loans had a repayment period of 3 years. Almost all of the profit sharing based transactions, some of the transactions with stipulated interest rates as well as, few cost free loans constitute this fixed repayment schedule loans.

Thus the analysis of terms and conditions of informal credit transactions in the engineering sector clearly brings to the forth the flexibility of informal credit market operation.

5.10 Interest Rates: Levels and Structures

The issue of interest rates is a vexed question in informal credit relation. It is a known fact that the levels of interest rates have been always higher in the informal sector. The high level of interest rates are usually explained by both demand and supply factors. Whilst on the supply side, factors such as shortage of capital, the monopoly position of the moneylenders, the inadequate collateral and riskiness of loans are generally mentioned, on the demand side it is maintained that the low levels of incomes and household savings have made borrowers dependent on the informal financial markets and the low levels of education and literacy have made it possible for the lenders to exploit the borrowers.

The broad underlying rationale of interest rate calculation is that loan interest rate (r) must be such that on an average the returns to the lender must be greater than or equal to the opportunity cost of funds (i) plus transaction costs (t). Incorporating the possibility of default, where a portion of the loan (L) is repaid, the above mentioned relationship between rate of interest and the components of interest structure may be depicted as $(1+r)L.P = (1+i+t)L$. But this is a case of competitive equilibrium. If we recognise the possibility of monopoly profit being built into the interest rate structure of the ICM of the small engineering sector, the equation takes the form $(1+r)L.P = (1+i+t+m)L$.

When we recall the repayment schedules and modes of repayment of informal loan transactions, the possibility of default appears to be a trivial issue. 'Bad debt' becomes a redundant term in a case where there is no specified repayment time frame (although there may be a lender's expectation). On the other hand, we have found that all debtors were eager to liquidate their liabilities (recall the relative high repayment rate of principal amount as against the interest) and field observations suggest that the debtors do not believe that, under the given conditions, they will be able to get away with paying back all their informal credit dues.^{63/} Thus, for

a closer reflection of reality, we can abstract in our analysis from the possibility of repayment of a portion (P) of the loan, instead of the full principal amount (L).

On the other hand, the cost of administering loan, as it is known to us, is minimal in informal loan transactions (particularly in comparison to the institutional sector).^{64/} Moreso, whatever cost is associated in informal loan transaction, it is beared by the debtors. Thus, transaction cost (t) is a variable of relevance for determining the real costs of borrowing, not for acertaining the level and structure of interest rates under the concrete circumstances.

Accordingly, the equation $(1+r)L.P = (1+i+t+m)L$ may be simplified as $(1+r)L = (1+i+m)L$ for our particular case. Within this framework of analysis we proceed to examine the levels and structures of rate of interest in the ICM of small engineering and metalworking sector.

5.10.1 Levels and structure of stipulated interest rates

In 23 loan incidences where the rates of interest were fixed at the time of loan negotiations, the rates of interest seem to vary from as low as 22% to as high as 97%. The average rate of interest in this group of loans has been estimated to be 45.4%.

In these loan cases, one year appears to be most frequently (56.5%) used base for calculating interest rates, whereas practice of interest calculation on half yearly and monthly basis are also quite significant (21.7% and 17.4% respectively). One case was recorded where there was stipulated weekly rate of interest.

Irrespective of the periods of interest calculation, in almost all of loan cases in this group simple interest rate was applied for calculation of interest accrued. In two cases of exception, the creditor demanded compound rate of interest.

Analysing the terms of borrowing of informal loans with stipulated interest rates it may be said, loans with shorter period of interest rate calculation are costlier than those with yearly rate of interest. Recalculation revealed that whilst the average annual rate of interest of the loans with yearly rate of interest is about 25%, the loans with half-yearly, monthly or weekly interest rate calculation practices have an average implicit rate of interest of more than 64%. Surprisingly, it was observed that the borrowers were usually not aware about the implications of period of interest calculation.

In the absence of any other satisfactory method of estimation, for working out the opportunity cost of the informal loan funds, we used as a proxy the highest interest rate offered by the commercial banks on term deposits. Presently this happens to be about 14.5% for 3 years fixed deposit receipts (FDR). Taking into consideration the short-comings of fixed interest policy, we assumed that the investment income foregone by the creditors due to parting with the loan amount is at least twice that of the highest rate offered by the Banks, i.e. the real opportunity cost of these loan funds could not have fetched more than 29% p.a. returns under the present conditions of the capital market.^{65/}

We have mentioned earlier that the average rate of interest for the loans with stipulated interest rates has been estimated to be 45.5%. In this implicit rate of interest, in view of our foregoing discussion, the real interest component (equal to opportunity cost of the fund) accounts for 29% and the rest 16.4% may be deemed as monopoly rent appropriated by the creditors. Even if we make some reasonable allowances for bad debts or riskiness of informal lending and for the costs incurred by the lenders for administering and collecting the loans, the share of monopoly profit in the structure of interest rate in the informal loan cases with stipulated interest rates will not be less than 10 per cent.

5.10.2 Level and structure of implicit interest rates

The average implicit rate of interest for the 30 loan cases without stipulated interest rates but accruing financial benefits to the creditors has been estimated to be 53.4% p.a. i.e. more than that of case with stipulated interest rates. However, different levels of interest rates cut across various methods of extracting financial benefits by the creditors.

The lowest implicit rate of interest in this group of loans has been found to be about 11.1 per cent for those where machineries were supplied at a premium price. The cases where the borrowers were supposed to return a promised sum, the implicit rate of interest works out to be about 23.6 per cent. The creditors who enjoy free servicing and repairing facilities or servicing at a discounted rate charges get financial benefit to the extent of 38.4 per cent p.a. on the loan amount. In comparison to all these rates of interest, the rate of return accrued by the creditors engaged in some sort of profit sharing arrangements appears to be significantly high. The imputed rate of interest in this cases has been estimated to be about 124 per cent. As the profit sharing arrangements usually mention that the creditor will take only 5-10 per cent of the profits (but no liabilities of the loss), the debtor quite often remains ignorant about the real volume of outflow of his resources on account of loan repayment.

Applying the method, enunciated in the previous section for ascertaining the structure of the implicit rate of interest for the group of loans involving costs about without stipulated interest rates, we find that the degree of monopoly premium works out to be about 24.4 per cent (by deducting 29 per cent for opportunity cost from the average interest rate of 53.4 per cent). Here again if we make allowances for the bad debts and transaction cost beared by the creditors, the share of monopoly premium will not be much less than 20 per cent.

The higher level of interest in the informal loans without explicit interest rates in comparison to those with explicit interest rates and particularly the relatively higher share of monopoly profit in the former is explained by the differential standing of the two sets of creditors and their modalities of operation. The creditors extracting financial benefits through various discreet mechanisms, by virtue of their sector related activities, are most well informed creditors. In addition to this, their direct production linkages with the debtor enterprises give them an edge over the other creditors. Thus, they have the opportunity to choose the form of lending most beneficial of them in a segmented, interlocked credit market.

Before we end this section it should be mentioned, that data analysis could not establish any discernible relation between rate of interest and educational background of the debtor-entrepreneurs, loan size, age of the debtor enterprises. However, a feeble association was noticed between the production orientation of the debtor enterprises and the rate of interest, where predominantly servicing oriented, monoprodukt enterprises tend to avail loans with higher levels of interest, particularly the loans involving profit sharing arrangements.

5.11 Transaction Cost

The costs of transaction and information are low in the ICNs in comparison to the formal sector because of the informality of transactions and intimate knowledge of borrowers on the part of the lenders. As almost all of the creditors do not receive deposits and are not engaged in large scale lending operation, they do not have to maintain any establishment which would have incurred them administrative expenses. On the other hand, since ICN of the small engineering sector is, basically, a 'creditors' market', whatever costs are involved in loan administration and collection are usually borne by the borrower. To this end, the transaction cost in informal credit is virtually a component of real costs of borrowing on the part debtors.

To construct an estimate about the expenditure incurred by the borrowers in the process of procuring informal loans, we attempted to gather information relating to direct and obligatory expenses of and time spent by the borrowers on account of getting the loans.

During the survey, all of the 32 debtor-entrepreneurs reported that their creditors did not demand payment of any fees (including down payment) for making the loans available. In that sense direct loan expenditures on behalf of the borrowers were totally absent. However (28 per cent) mentioned that being at the receiving end they had to be up and doing in preserving their financiers good disposition towards them. As a manifestation of this the debtors have had to give expensive presents (television, radio, gold ornaments etc.) to the creditors or their relatives on various social occasions. Total amount spent by the borrowers on this account has been estimated to be Tk. 47,160, which is approximately 2.4 per cent of the total volume of informal credit. Besides, these types of obligatory expenditures, the debtors have had to render various services to the creditors (not related to production) which are not quantifiable, e.g. helping relatives of the creditors to get employment, providing assistance to the creditors in their other gainful business, extending social support to the creditors and participation in political mobilisations under their leadership, etc.

Time and money spent by each of the debtors in pursuing the loan request comprise another important component of real costs of informal borrowing. According to the report of the borrowers, on account of getting the funds released from the creditors as against the 62 loan cases, a total number of 220 working days were wasted. It means each borrower on average had to devote about three and a half working days to get his loan. The sum spent by the borrowers in this regard has been estimated to around Tk. 4,200 which is about 0.2 per cent of the total inflow of informal credit.

Thus, the total transaction cost of borrowing beared by the debtors on account of various types of expenditures amounts to Tk. 51,360 or 2.6 per cent of total volume of disbursed informal credit.

To be accurate, we should add the opportunity cost of 3.5 working days to the transaction cost of each of the loan cases.

It may be added that the transaction cost did not seem to vary with the size of loan, but a positive association was noticed between the cost of transaction and mode of lending, where the costs borne by the borrowers for processing the loans tend to be higher in the cases involving profit sharing arrangement and free servicing facilities.

5.12 Informal Credit: Cost of Borrowing and Its Impact on the Borrowers

As we have discussed earlier the charge paid for the use of informal credit in the small engineering and metalworking sector varies from as low as 11 per cent to as high as 124 per cent depending upon the nature of the financial intermediaries, the lending practices and the terms and conditions under which the loans are negotiated. According to our estimates, on the average the rate of charge for informal credit in the sector is approximately 49.4 per cent. If we add to it the transaction costs of borrowing incurred by the debtors, the real cost of using informal loans (or the effective rate of interest) amounts to 52 per cent (excluding the opportunity cost of the working days lost by the debtors).

Referring to the framework to interest rate structure analysis elaborated in section 5.10, it may be said in this 52 per cent interest rate, 29 per cent compensates the income foregone by the creditor (or the opportunity cost of the loan sum), 2.6 per cent accounts for transaction costs and 20.4 per cent is appropriated as monopoly premium.

What we did not account for in the above mentioned structure of effective rate of interest are defaults and risk factors. According to our observations the very nature of informal credit operation in the small engineering sector excludes the possibility of default and ensures safe return of the investment made by the creditors.

However, to be on the safe side we may say that contribution of factors such as bad debts and riskiness of informal lending can not be more than 5 per cent^{66/}

Thus, accounting for the bad debts and risk factors, the composition of the real costs of informal borrowing (averaging 52 per cent) may be written down as follows: 29 per cent is due to opportunity costs for the lender who could have used to funds in other ways, 2.6 per cent is due to costs of transaction, 5 per cent is due to default and risk factor coverage and the residue 15.4 per cent is monopoly profit appropriated by the lender.

As we come up with an estimate of effective rate of interest averaging 52 per cent, the first question which arises is that how beneficial it is for the debtors to finance their units borrowing money from such costly sources. To get an answer to this question we may recall the costs and returns and productivity indicators analysed in chapter 3.

A small engineering workshop, on the average, earns a yearly profit amounting to Tk. 1,92,167 (which is about 50 per cent of the his gross value of output), whereas the amount paid by 32 indebted enterprises on account of informal credits over a period of 5 years is Tk. 10,97,000. Which means the indebted enterprises had to sacrifice only 3.6 per cent of their surpluses so as to mitigate the costs of borrowed capital from the informal sources. If we account for other costs incurred by the loanees to procure the loans and to maintain favourable relationship with the creditors, the share of informally borrowed capital costs will not be more than 4 per cent of their profits. Even if, the indebted workshop owners had to liquidate all their outstanding informal loans it would not have taken away more than 10 per cent of their surpluses. It is a case where the sector is afflicted by acute liquidity crisis but increasing returns to scale, high marginal productivity of capital (about 35 per cent), high capital-output ration (around 1.1) and speedy turnover of working capital make borrowings from costly informal sources

gainful. Thus, in the absence of adequate flow of institutional finance, inflow of informal credit funds in the small engineering and metalworking significantly enhances the economic viability of the sector, satisfactorily subserving the objective of allocative efficiency.

But the question remains whether all the borrowers from the informal sources are evenly benefitted from the informal loans. To find an answer to this question we must first establish who are borrowers from the informal sources. Whilst we analysed the salient features and performance indicators of the loanee enterprises, it was found that the significant relation exists between informal loan incidence and efficiency index of the loanee units. About 72 per cent of the borrowing units (23 units) belonged to the 'marginally efficient' and 'most efficient' groups (as described in Table 3.23). The rest 9 units belonged to the 'marginally inefficient' or 'most inefficient' groups. On the other hand, further exploration also revealed that the efficiency indicator of the borrowing units cuts across the diverse forms of lending practices. To elaborate, the 'efficient' group of borrowing units were primarily recipients of interest free loans and loans with stipulated interest rates, i.e. these units having the advantage of borrowing from 'less costlier' informal sources. Alternatively, the 'inefficient' borrowing units, basically had to resort to such informal transactions which involve profit sharing arrangements and free servicing facilities. Thus, it may be concluded, that firstly, there is a discernible tendency in the direction of inflow of informal credit funds in the small engineering sector to by pass the 'less' efficient units. In other words, there is a process of natural selection of clientele by the informal creditors, where the units with higher capital intensity and high productivity ratio are favoured. Secondly, whatever volume of informal credit trickles down to the 'fortunate' 'less' efficient group of units (these units are usually less endowed with fixed assets and working capital), these loans have to be negotiated under relatively trying conditions. In other words, the informal creditors

discriminate to 'smallers' amongst the small engineering and metalworking enterprises.

Consequently the engineering workshops with weaker capital structure are not being able to mitigate their informal credit dues with their modest economic performance. But the very nature of their capital structure compels them to resort to informal borrowing and the very nature of the informal credit market allows them loan only on relatively higher effective rates of interest, which subsequently further weaken their resource basis. Entrenched in this vicious circle, it is reckoned that these units still remain viable and compensate the burden of informal credit financing by paying wages to the workers less than the marginal productivity of labour. Thus, from the equity point of view the benefits of informal credits are not evenly distributed.

The other aspect relating to the impact of informal credits which needs to be mentioned here is the issue of 'clientile satisfaction'. Our study revealed the differential preference of the borrowers for the informal sources of fund vis-a-vis institutional finance. It was found that 30 per cent of the borrowers came to the informal creditors after failing to get loans from the institutional sources, whereas 70 per cent debtors came straight to the informal creditors without approaching the financial institutions. On the other hand, 96.8 per cent of the debtors mentioned that the informal lenders provided them with loan when it was most required. The positive attitude expressed by the borrowers towards informal lending appears to be quite plausible when we analyse the hazards associated with institutional financing. Our following chapter is devoted to this theme.

CHAPTER 6

PROBLEMS OF INSTITUTIONAL FINANCING OF SMALL ENGINEERING
METALFABRICATION ENTERPRISES

Of the various constraints facing the small scale industry at large in Bangladesh, inadequate flow of credit, particularly from the institutional lending agencies (public and private) is commonly believed to be a crucial bottleneck impeding its growth and expansion.^{67/} In the foregoing sections we have seen that, firstly, small engineering workshop owners often perceive finance to be their key constraint; secondly, foundation and subsequent expansion of the enterprises are done mostly out of personal savings accumulated from proprietors' previous occupations and through reinvestment of profits; thirdly, whatever little credit is used in the sector comes mainly from informal sources which charge much higher rates of interest compared to formal sources; fourthly, with the given marginal productivity of capital in the sector, inflow of institutional credit would contribute to enhancing all native efficiency; fifthly, the proportionate share of institutional finance in the total capital employed is much smaller in the case of smaller among the small engineering enterprises.

Having established these some of the general features pertaining to the present coverage of institutional financing in the small engineering and metalworking sector, it becomes pertinent to examine the characteristics of operation of institutional lending agencies, investigate the existence of interaction between formal and informal sources of fund, and analyse the problems associated with exploiting institutional finance as an effective instrument of development of the sector. Accordingly, the present chapter is devoted to the abovementioned issues.

6.1.1 The institutional network

Underscoring the importance of the small engineering sector has become more pronounced lately in the official documents and speeches. Some policy measures, including institutional arrangements, fiscal incentives and provision for finance to promote growth and development of the enterprises have been adopted. These promotional measures are part of the New Industrial Policy (1982) and institutional arrangements to implement these attempts.

At present a number of government and semi-government agencies are engaged directly or indirectly, in varying degrees, in promoting smallscale engineering sector. Notable among these are:

- Bangladesh Small and Cottage Industries Corporation (BSCIC)
- Department of Industries (DI)
- Bangladesh Steel and Engineering Corporation (BSEC)
- Bangladesh Standard Institution (BSI)
- Industrial Advisory Centre of Bangladesh (IACB)
- Nationalised Commercial Banks (NCBs)
- Bangladesh University of Engineering and Technology (BUET)

In addition, a couple of international official agencies (i.e. ADB, IDA, USAID, UNDP, JICA, DANIDA, etc.) and private organisations (MIDAS) are also engaged in various capacities in promoting the growth of small engineering sector.

A discussion of the activities of these agencies is beyond the scope of this study. The assistance provided by the official agencies usually consists of financial grants, routed through the development financial institutions (DFIs) of Bangladesh, whereas the private organisations and some of the autonomous (semi-government bodies (BUET, BITAC, IACE) provide training facilities for development of knowledge and artisan skills, collect, innovate and disseminate information on new and appropriate technology; extend counselling and advisory services, etc. BSEC is more involved in the development of medium and heavy engineering industries. Government agencies like Department of Industries are engaged in promoting the sector

within the framework of industrial investment policy. Promotional services provided by most of these organisations are basically non-financial in nature and in many cases incidental or indirect. Thus, we will concentrate more on the institution which is the primemover organisation in Bangladesh for promotion and development of the small engineering and metal fabrication sector, viz. BSCIC and which in collaboration with other financial institutions, viz. the NCBs provide financial support to the enterprises of the sector.

6.1.2 Role of Bangladesh Small and Cottage Industries Corporation

BSCIC, formerly known as EPSIC was established in 1957 with autonomous status as the key agency to assist the growth of the small and cottage industries.^{68/} The broad objectives of BSCIC with respect to small engineering and metalworking sector are the following:

- i) to ensure accelerated growth of new capacities in the sector;
- ii) to increase productivity (resource maximisation) of the existing units;
- iii) to ensure optimum utilisation of financial resources;
- iv) to provide infrastructural facilities;
- v) to create and develop marketing facilities, including market information system for the products of the sector;
- vi) to innovate product process and technology;
- vii) to ensure development of skills
- viii) to help socio-economic upliftment of the entrepreneurs.

Credit programme is one of the most important component of the wide range of activities pursued by BSCIC. Appreciating that the small engineering workshop owners are generally men of small means, those can neither finance capital requirements adequately from own

source, nor have satisfactory access to the NCBs, BSCIC complements its promotional and extension services with financial support. But the corporation does not own any credit fund. It has been channelising fund from national and international sources and arranging credit through NCBs to their clients.

As per BSCIC Act 1957, the Corporation has been bestowed upon the responsibility to discharge loan function BSCIC performed this function with own resources, in collaboration with Bangladesh Shilpa Bank (BSB) and operated Consortium Fund with participation of commercial functions upto 1972. The corporation utilized foreign credits like Yen credit, UK credit, Swedish credit, German credit, etc. during this period.

After the liberation of the country, focus has been switched mainly to promotion and extension services and credit has exclusively become the responsibility of NCBs and DFIs. The present arrangement even though appears to be logical one but readily it does not serve the purpose and expected promotional attitude is absolutely lacking. It is reckoned that the introduction of commercial and profitable lending created colossal set back in the industrialisation process. In order to improve the situation Government of Bangladesh (GOB) has been deeply thinking to find out ways and means for appropriate funding arrangement in view of the commitment of the GOB in the Third Five Year Plan (1985-90) document and subsequent Industrial Policy, 1986.

At the moment BSCIC has seven credit programmes of the following two are particularly directed towards the development of the engineering sector.^{69/}

- a) Fund for promotion of subcontracting linkages,
- b) Fund for promotion of Engineering Industries of Zinzira and Dholaikhal.

Both programmes are executed in collaboration with Agrani Bank.

The credit programme for promotion of subcontracting linkage between small, medium and medium industries and ancillary units has been taken up BSCIC for healthy development of different sectors with specific focus on the small engineering and metalfabrication sector at a cost of Tk. 15.2 million including Tk. 4.9 million as project aid. The project proforma was not approved by GOB till June, 1986 and hence fund was not released and as such no expenditure made.

The second programme on promotion of engineering industries is already underway and is of special interest to us as the respondent entrepreneurs of our present study constitute the target clientele group of this programme. Accordingly, the terms and conditions under which this credit programme operates have been elaborated in the following paragraphs.

6.1.3. Salient features of credit operation of BSCIC for small entrepreneurs in the Dholaikhal and Zinzira area of Dhaka

This targeted credit programme has been launched by BSCIC in 1986, with the approval of Ministry of Industries and a collaboration with Agrani Bank, to provide fund for engineering industries of Dholaikhal and Zinzira Tk. 50 million has been allocated for disbursement through this special credit scheme. The general guidelines of the scheme are as follows:

- a) Target group: The loan is to be given to those small enterprises located in Dholaikhal and Zinzira area, particularly to those who have no access to bank finance under normal arrangement of lending.
- b) Purpose of loan: The loan programme comprises of two parts: (i) replenishment of working capital and (ii) creation of fixed assets by balancing, modernisation of existing units.

- c) Amount of loan: The maximum loan limit for each enterprise may be Tk. 7,00,000 for machinery procurement and Tk. 3,00,000 for working capital. The actual requirement for loan shall be assessed on the appraisal of individual cases by BSCIC.
- d) Mode of payment. The mode of payment is decided by the BSCIC and Bangladesh Bank as per existing rules and regulations applicable for the purpose.
- e) Mode of realisation of loan. The loan for fixed capital is for 5 years and working capital for 3 years, including grace period. The repayment is on half-yearly instalment basis. The first installment becomes due on the 12th month from the date of disbursement of first installment, i.e. one year grace period is allowed to both types of loan (for fixed assets and working capital).
- f) Rate of interest. Rate of interest has been fixed at 14 per cent p.a. for fixed investment and working capital. However in case of default of repayment of any installment a penal additional interest 0.1 per cent is usually charged.
- g) Equity and margin requirement. The margin of loan under this programme should not normally exceed 20 per cent. Margin is to be provided usually by the borrower as his equity. Before disbursement of loan, equity money shall be normally deposited with financing bank for subsequent adjustment against the investment.
- h) Security arrangement. Most of the industrial units located in Dholaikhal area are working in rented premises. So the security of loan would be the hypothecation of machinery (existing or to be procured) and stock of raw materials. Where, however, loan includes the cost of land and building to be owned by the borrower or existing units located on the own land of the borrower, the same would be provided as security by equitable mortgage.

- i) Recycling of fund. The fund of the programme will be recycled and a minimum rate of interest may be charged on the loan amount by Bangladesh Bank.
- j) Role of designated bank. The designated bank (Agrani Bank) has an interest bearing account in the name of BSCIC, where the amount accrued on recovery and interest there of are being deposited. The bank provides BSCIC officials with access to all documents relating to this loan programme. The bank informs BSCIC about recovery position every six months and furnish statement of accounts to BSCIC annually.
- k) Role of Bangladesh Bank. Bangladesh Bank after designating Agrani Bank placed fund in the account of BSCIC and provides the facility of credit guarantee scheme against bad debt/loss, if any. Besides credit guarantee scheme, other measures may be evolved by Bangladesh Bank by mutual consultation with BSCIC.

According to BSCIC estimate there were in 1986 about 519 metal-fabricating, repairing and servicing, scrap reconditioning and trading units in Dholaikhal area of which 130 units were registered with the Directorate of Cooperatives and enlisted with BSCIC. 219 metal product units are said to exist in Zinzira area.^{70/} Out of these 738 units, during 1986, under this scheme, loan amounting to Tk. 16.5 million has been disbursed to 50 units.

6.1.4 Borrowing from Banks

Besides the special lending programme of the BSCIC - Agrani Bank, the small engineering units can take advantage of the credit policy measures, designed by the GOB for financing small scale industries through short term small loans. Bangladesh Bank has fixed a target of 1 per cent of the demand and time liabilities of the foreign and local private banks for disbursement as loans to small scale industries. A target of 1 per cent of bank deposits for lending for non-traditional exports (which include goods of engineering and

metalfabrication sector) has been introduced. Along with these allocational instruments, other financial policy measures which are directed towards enhancing the inflow of fund from institutional sources to this sector is the differential interest rate policy. Under the small loans scheme introduced by Bangladesh Bank in all the NCBs, rate of interest on advances for internal trading purpose upto Tk. 1 lakh has been fixed at 16 per cent and for advanced exceeding Tk. 1 lakh limit the interest rate is 18 per cent.

There is no scope for elaborate discussions, at this point on the issues relating to the real impacts of these financial measures. It may be only added that the credit ceiling and prohibition policy, allocational instruments, interest rate policy hardly subserved their explicit and implicit objectives with respect to small engineering sector, when considered in terms of volume and incidences of inflow of credit from institutional sources^{71/} Evidences presented in the following sections bear testimony to this assessment.

6.2 Incidence of Borrowing from Institutional Sources

It was recorded during the survey, out of 51 sample enterprises only 9 units (17.67 per cent) were recipients of institutional loans.^{72/} Amongst these 9 units only one unit has used institutional loan as well as credit from informal sources, which may be taken as an indication that access to institutional sources has an inverse correlation with the extent of use of informal credits. It may be also noted that none of the indebted units borrowed more than once from the financial institutions.

The institutional loans disbursed cover a period of five year (1981-86). The years of disbursement are as follows:

1982	2 loans
1984	2 loans
1985	5 loans

The increase in number of loans cases in 1986 has been brought about by the launching of special credit programme by BSCIC.

6.3 Volume and Size of Institutional Loan

Table 6.1 gives a distribution of loan cases by levels of amounts applied for, sanctioned and actually disbursed. The total loan requested by the 9 units amounts to 37,45,000 whereas approved figure is Tk. 27,61,000 (73.79 per cent of the applied for). The rate of disbursement (over the sanctioned amount) has been found to be 83.3 per cent. It appears from the Table that there is a tendency on behalf of the sanctioning authority in scaling down the amounts during approval. It has resulted into maintaining the overall bias of the loan operations towards bigger loan size (more than Tk. 1,00,000), and has diminished the average size of small loans.

TABLE 6.1

DISTRIBUTION OF LOAN CASES BY LEVELS OF REQUESTED,
SANCTIONED AND DISBURSED AMOUNTS

Range (Tk.)	Amount requested		Amount sanctioned		Amount disbursed	
	No. of units	Amount in the range	No. of units	Amount in the range	No. of units	Amount in the range
Upto 1,00,000	2	1,45,000	3	2,25,000	3	1,95,000
1,00,000-3,00,000	2	5,00,000	2	4,20,000	2	4,20,000
3,00,000-5,00,000	2	9,00,000	3	13,16,000	4	16,86,000
Above 5,00,000	3	22,50,000	1	8,00,000	-	-
Total	9	37,45,000	9	27,61,000	9	23,01,000

The real inflow of institutional funds during the time period as shown in the table, amounted to Tk. 23,01,000, which means the average size of loans extended to the borrowing units is around Tk. 2,55,666, whereas inflow of institutional fund for sample enterprise works out to be Tk. 41,235.

Comparing these figures with those of informal credit operation in the small engineering and metalworking sector, we find that, whilst the average size of loan from the institutional sources is 8 times greater than the same from the informal sources, the levels of flow of fund from both the sources are not significantly different (Tk. 38,530 and Tk. 41,235 per enterprise from informal and institutional sources respectively).

6.4 Sources of Institutional Funds

The main two institutional lenders in the small engineering sector have been found to be BSCIC and the NCB. BSCIC along with Agrani Bank provided loans in 5 cases under the special credit programme, whereas, the other NCBs accounted for the other 4 loan cases. These NCBs included Janata Bank (3 cases), Sonali Bank and Rupali Bank (1 case each).

6.5 Purposes of Lending and the Actual Use of Funds

It was revealed during the study that there is a total overlapping between the purposes of lending and end uses of the funds which negates the hypothesis, in the case of small engineering sector, that cheaper institutional credits are frequently used for purposes, other than those for which they were negotiated.

The use pattern of the institutional funds shows that 6 (66.74%) of the 9 loan cases were transacted to buy new machineries, 2 (22.2%) for financing raw material procurement and 1 for expansion and renovation of the workshop. It is significant, none of the institutional

loans were explicitly targetted to meet the working capital requirements of the enterprises (if we exclude the 2 cases of raw material procurement), which happens to be a crying need of the sector.

6.6 Terms of Borrowing

Since the loans were transacted under various financial schemes and institutional arrangements, it is necessary to examine the terms of lending (guarantee and collateral, rate of interest, repayment period, grace period, number of installments, etc.). Analysis of terms of lending from the institutional sources will allow us to compare the same in the ICh.

6.6.1 Guarantee and Collateral

Collateral constitutes one of the vital components of terms of lending. Inability to offer adequate collaterals (which would have covered completely the value of loan plus interest) by the borrowers has been often mentioned as a chief bottleneck for advantageous and wider use of institutional loans. To meet the rigorous collateral demand of the banks, the entrepreneurs of the small engineering sector put forward whatever assets they have at their disposal, which include land, buildings, machineries, etc. Distribution on enterprises by types of collateral offered shows that the most common form of collateral appears to be machineries along with buildings (5 units or 55.6 per cent). To be more precise hypothecation of the fixed assets acquired by the loans is the usual practice. In other cases, 2 entrepreneurs (22.2 per cent) each mortgaged their landed property and operational inventories to procure loans from institutional sources.

It was observed that the entrepreneurs are quite sensitive about the issue of collateral. Since the engineering workshops are their main source of income, proprietors are cautious about mortgaging the units. They have an apprehension that if they can not regularly repay the installments, their business might be forfeited.

The other complain of the entrepreneurs relating to collateral is that the value of the security which the disbursing agency demands far exceeds the value of the loan along with interest. On investigation it was found that total value of assets mortgaged/hypothecated by the units amounts to (present resale value as reported by the respondents) more than Tk. 50,00,000, i.e. double the approved amount.

6.6.2 Rate of interest

It is known to us that not only the credit allocation/ceiling targets, statutory reserve ratio, etc. are determined by the Bangladesh Bank for the commercial banks (public and private) and other financial institutions, Bangladesh Bank also fixes their lending rates. Thus, in Bangladesh institutional credit market is a 'fix-price' credit market and the differential interest rates charged by the lending institutions is a variable of the 'credit rationing' policy of the GOB.

The survey revealed that the firms are paying different rates of interest to the institutional loans. It is explained by the fact that lending rates have been revised by the Bangladesh Bank from time to time and as loans were sanctioned under different arrangements so different rates of interest were charged. It was found that 6 of the 9 units were paying a yearly rate of 10% interest, whereas 1 unit was paying 16% and 3 others - 18%. The BSCIC sponsored loans were basically accruing 10 per cent interest and other commercial lending from NCBs - 16 per cent and 18 per cent.

6.6.3 Repayment period

We may distinguish the repayment period between grace period (period till the first installment is to be paid) and the actual repayment period. As recorded during the survey, only in one loan transaction the grace period was 6 months, whilst for the rest (8 units) it was 1 year. The loan case with a shorter grace period was executed as a 'over draft, where the Bank was not in a position to allow longer period.

The actual repayment periods of the loans fall under two categories. One with 2 years (plus 1 year grace period) and the other with 4 years (plus one year grace period) categories. 4 cases belonged to the first group, whilst 5 to the latter. Here again, the intra-institutional variation appears to be determinant. The NCB loans had a total repayment period of 3 years and the BSCIC sponsored loans - 5 years.

6.6.4 Number of installments

The institutional loans were to be paid back in a number of installments, depending up their size. The average number of installments in which loans are to be repaid has been found to be about 7. The distribution of loan cases by number of installments is as follows: 4 cases - up to 5 installments, 3 cases - 6-10 installments and 2 cases - more than 10 installments.

However, the extent of relief a loanee gets by phasing the repayment of its dues over a period of time is better understood if we also consider the size of each of the repayment installments. The average size of each of these installments worked out to be about Tk. 45,800. Amongst the 9 loanee units, 2 units have to pay less than Tk. 35,000 per installment, 3 units - Tk. 35-50,000 and 4 units - more than Tk. 50,000.

6.7 Transaction Cost

Lower or economic interest rates charged by the financial institutions, in comparison to the ICM, is obviously not all that is required to ensure efficient lending to small units in the engineering sector. It is also important that appropriate level of services must be provided and system must be designed to minimise transaction costs while still allowing speedy and informed appraisal of application. Thus, it becomes necessary to achieve the apparently conflicting twin goals of real costs reduction to both borrowers and lenders.

Keeping ourselves apprised of the traditional notion that the banks do not feel encouraged to give loans to small borrowers as it increases their transaction costs, here, at the moment, we will concern ourselves only with the costs which the small engineering workshop owners had to incur in the process of getting loans from financial institutions and will try to ascertain how 'cheap' the institutional credits are.

One of basic elements of transaction cost is the expenditures which a borrower has to bear so as to execute necessary documents of the loan agreement. Our survey revealed that a total amount of Tk. 24,700 was spent by the 9 borrowing units on account of non-judicial stamps, insurance premium, legal fees, etc. for formalising the loan agreement, which is about 1.1 per cent of the total disbursed amount.

Incidentally, a more major item of real transaction cost of institutional loans happens to the unofficial payments which the workshop owners had to make to procure loan. It was estimated that a total amount of Tk. 79,500 or 3.5 per cent of the actually disbursed amount have been paid by the 9 loanee entrepreneurs to the officials of NCBs and BSCIC as outright cash bribe.^{73/} In general, the small engineering workshop owners were very indignant about the scale and extent of rampant corruption which pervade the concerned institutions.

Besides these official and unofficial fees, the borrowers have to incur expenditure on other miscellaneous accounts, e.g. travel expenditure to and from the financing institutions, cost for keeping the officials in good humour (tea, cigarettes, etc). It has been estimated that the loanees have to spend approximately Tk. 7,700 under this head which is about 0.4 per cent of the disbursed amount.

The high transaction cost of the borrower also arises from the disproportionate amount of time spent by him in order to prepare application, carry out lengthy and expensive visits to explain, request, record and revise the proposal, and if and when the application is approved these visits continue to pursue the disbursement.

As reported by the loanees, a total number of 163 working days have been lost by them to expedite the sanctioning process. In other words, on average more than 18 working days have to be spent by the borrowers in the financial institutions from submission of application to actual disbursement of funds.

The necessary procedures and formalities also lead to delay. As per the responses of the loanees, the average time period which elapsed between the submission of loan application to actual disbursement has been estimated to be 5.4 months. As a result of these kinds of delay, the opportunity which the loan would have enabled the borrower to grasp may cease to be available. 5 of the 9 borrowers mentioned to us that they did not get the loan at the time when it was most necessary and incidentally most of these unsatisfied clientele were borrowers under the BSCIC sponsored scheme.

Thus, it becomes quite evident that the real costs of borrowing from the institutional sources are significantly higher than revealed by the interest rates paid. According to our estimation, for a typical small engineering workshop owner, his borrowed amount gets eroded by 5 per cent before it reaches his hand. This figure will rise further if we add to it the opportunity cost of the 18 working days which he has devoted in pursuing his loan application.

Our data suggest that the cost of loan do not vary significantly with the level of education of the entrepreneur, production orientation of the enterprise and size of loan; but it appears to vary inversely with the scale of operation of the unit, i.e. 'smaller' of the small entrepreneurs, as a result of their more dire necessity, are ready to sacrifice a considerable part of the principal amounts to get the loan which still remains economic for them, when compared with the real costs of informal market credits.

6.8 Rate of Repayment

Poor repayment record is the general experience of institutional lending in Bangladesh. It is reckoned that the big borrowers are

usually the biggest defaulters. It is also maintained lender's weakness and political interference, than genuine difficulties of borrowers have resulted poor repayment performance.

In this context our study found that the situation is not significantly different in the engineering sector. Out of the 9 only 2 loanees have started repaying their debts (one has paid one installment and the other - five installments). Incidentally, both the borrowers had taken loans directly from the NCEs. However, all the loanees, including the above two, have accumulated sizeable amount of financial liabilities to the sponsoring agencies.

Interestingly, it appeared to us that the debtors do not intend to repay their dues. One of the major arguments of these borrowers is that they are not going to pay interest on the money which they have never received (meaning the cut which they had to pay to the officials for getting the loan sanctioned). On the other hand, none of the financial institutions have initiated any legal action for the recovery of the dues. According to our considered opinion, the repayment trend has no relation with economic performance of the units. Low interest rates contributed to arrears particularly when they are below the rate of inflation. It seems that a notion has got embedded in the borrowers' culture that public money may not be returned unless forced to. Since a borrower knows that being a recipient of a sponsored loan once, almost excludes him from availing another such loan next time, it makes him feel discouraged to repay his loan and ask for another. Thus, he entraps himself in a mechanism, where attempt to subsidise one's business through appropriation of institutional fund eventually lead him into the embrace of costlier informal loans.

This is not to say that this an unamenable feature of institutional lending. Due to the racketeering going on with disbursement of institutional funds in the small engineering sector, the sponsoring agency do not necessarily concentrate on the character and ability of the prospective borrower. Experience suggests that an "energetic

and enterprising" borrower is more likely to succeed than an appropriately presented highly profitable proposal from a "disinterested and incompetent" applicant. It implies, firstly one has to ensure about the integrity and commitment of concerned institutions. Secondly, the total lending approach needs to be revised and institutions restructured. Reduction of transaction costs, restructuring of repayment schedule, rigorous enforcement of relatively simple sanctions, remoulding of the financing agencies (including decentralisation) to suit the needs of the intended borrowers should be some of the key elements of the above-mentioned restructuring process. In this context one should also take lessons from the operation of ICMs and equip the formal sectors with all the replicable features of informal lending to make institutional loans more advantageous to the borrowers and influence the ICMs to operate within a competitive regime.

6.9 Factors Responsible for Limited Availability of Institutional Loans - The Entrepreneurs Views

One way of identifying the factors responsible for limited use of institutional loans by the sample entrepreneurs may be to examine their own perceptions about the difficulties involved in getting them. This is done through analysing the replies of the respondents as to the reasons restraining them from taking institutional loans as well as to the problems actually encountered by them in obtaining such loans. In this connection the respondents were requested to express their views regarding the necessary measures to be taken to facilitate wider use of institutional loan in the small engineering sector. However, to start with, it was deemed meaningful to assess the extent of knowledge of the entrepreneurs about the existence of the financial institutions which may play a role in solving their resource constraints.

6.9.1 Level of awareness of the entrepreneurs about the financial institutions

'Information gap' happens to be one of the much cited reasons explaining the modest use of institutional finance in the small scale and cottage industries. It is usually argued that the entrepreneurs of these sectors are sometimes unaware of the existence of the institutions which may contribute effectively in mitigating their capital needs, not to speak of the fact that these entrepreneurs are quite often are totally unapprised about the specific services provided by these institutions. Consequently, the informal creditor thrives by taking advantage of the total ignorance of the borrowers about institutional financial network and, at the same time, officials of the financial institutions prosper manipulating with the absence of knowledge of the borrowers about their rights of loan entitlement.

Under the circumstance we decided to test out whether lack of knowledge of the small engineering workshop owners regarding the concerned institution is working behind the insignificant use of formal sources of loan and thus encouraging the ill consequences of the dualism existing in the credit market. In response to the question whether they can at least name the organisations involved in financing small engineering and metalworking enterprises, all the entrepreneurs demonstrated a strikingly good knowledge about these organisations. As it becomes evident from Table 6.2 all of the respondents could mention at least one institution, whilst a majority could name even two or more.

As it appears from Table 6.2 BSCIC is the most popularly known organisation amongst entrepreneurs as 96 per cent of the respondents mentioned its name and it constituted more 43 per cent of all the responses. Different NCBs e.g. Agrani Bank, Sonali Bank, Rupali Bank and Uttara Bank are the second most important (70.6 per cent of the respondents and 31.8 per cent of the responses) group of organisation known to the owners of the sample units. Interestingly, the respondents showed quite a good knowledge about international aid

TABLE 6.2

**AWARENESS OF THE ENTREPRENEURS REGARDING SOURCES OF
INSTITUTIONAL FINANCE**

Institution mentioned	No. of responses	% of the responses	% of the sample respondents
BSCIC	49	43.4	96.1
NCL	36	31.2	70.6
DFI (BSB, BSRS)	12	10.6	23.5
Foreign Banks and Donor Agencies	16	14.2	31.4
Could not mention	-	-	-
	113	100.0	-

giving agencies (although these agencies do not directly disburse aid in the sector). Beside the foreign banks, the donor agencies mentioned by the respondents include UN organisations, USAID, Asian Development Bank, JICA and NORAD. Another interesting feature of the responses is that some of the entrepreneur reckoned the domestic private commercial banks as one of the potential sources of institutional finance.

The level of awareness demonstrated by the entrepreneurs is not at all surprising given the urban and modern features of the sector and more so with the relatively high level of educational qualification of the entrepreneurs.

Whilst the entrepreneurs exhibited quite a fair knowledge about the sources of formal loan, a overwhelming majority of them could not precisely say how they should proceed to get loan from these

sources and whether the institutions have any specific scheme for financing the units of the sector.

Thus, it may be concluded that information gap regarding sources of institutional loan exist in the sector to the extent that not all the entrepreneurs are well apprised of about the specific facilities which these organisations are ready to provide them. Alternatively, limited use of institutional loan in the small engineering and metal working sector is not so much a result of lack of knowledge, as much as it is due to the hurdles associated in realising the potential services of the concerned institutions.

6.9.2 Problems of getting loan from the financial institutions

In order to identify the problems confronted by the entrepreneurs in getting loans from the concerned financial institutions and/or to understand the apprehensions of the entrepreneurs which refrain them from approaching a financial institution for loan, we asked the respondents to mention three main problems associated with procuring institutional financial support. The responses received in this regard have been grouped and table below.

It is quite evident from Table 6.3 that the illegal payments have to made by the prospective borrowers to the officials of the financial institutions is the overwhelming dominant concern (94.1 per cent) of the entrepreneurs. They univocally expressed their indignation about the bribes which they have to pay the BSCIC officials to get a loan sanctioned. The second most frequently (58.8 per cent) mentioned problem relates to the harassment caused to the borrowers due to indifferent attitudes of the concerned official and bureaucratic procedures, which are sometimes deliberately engineered by the officials. Complaints about high interest rates (43.1 per cent) and inability to meet collateral requirements or unwillingness to mortgage the machineries (39.2 per cent) are other two important problems mentioned, which are closely followed by complaint that the loans can not be obtained from BSCIC Banks at the time of necessity or

TABLE 6.3
PROBLEMS OF GETTING LOAN FROM INSTITUTIONAL SOURCES

Problems mentioned	No. of times mentioned	% of the respondents
Illegal payments have to be made	48	94.1
Deliberate harassments are caused	30	58.8
Rate of interest is high	22	43.1
Not given in proper time	18	35.3
Cannot/Do not want to meet the collateral requirements	20	19.6
Repayment period is very short	10	9.8
Others	5	

quite long period is taken to process loan application (35.3 per cent). If we remember our earlier discussion relating to real cost of institutional loans then these reactions of the entrepreneurs will not come as surprise.

Analysing the problems mentioned by the entrepreneurs, it seems there are basically two sets of problems deterring wider use of institutional loans. First set relates to subjective factors such as corruption, harassment, delay, etc, and the second set to the terms and condition under which loans are disbursed to the entrepreneurs, such as, interest rate, collateral, repayment period, etc. It can not escape our attention that the first set of problems disturbs the entrepreneurs much more than the second. Under the circumstances, improvement of the situation regarding the first group remains a pious wish as these are complex multifaceted and endemic problems, whereas the second group of problems demand revision of existing policies, which may not be deemed appropriate from the lenders point of view.

Thus, it is feared in the near future no spectacular improvement of the performance of the institutions engaged in providing financial assistance to the small engineering workshops is expected, whilst even a marginal improvement could have an impact on making available to the entrepreneurs the scarce financial resources which the GOB has allocated for the development of the small engineering sector.

6.9.3 How to solve the problems

It was pleasant surprise to find that owners of the small engineering workshops were able not only quite aptly pin down their problems regarding institutional finance, but also came up very promptly with a whole series of remedies to do away with these malices. When they were asked to suggest measures which could have given them better access to institutional sources of finance and broaden the scope for more efficient utilisation of institutional finance for the development of the sector, the 51 sample entrepreneurs suggested in all 161 steps which have grouped under 11 heads in the Table 6.4.

TABLE 6.4

**MEASURES SUGGESTED BY THE ENTREPRENEURS TO FACILITATE WIDER
USE OF INSTITUTIONAL SOURCES OF LOAN**

Measure Suggested	No. of	% of the sample respondents
1. Loan should be provided by only mortgage of machineries	10	19.6
2. Rate of interest should be lowered	18	35.3
3. Loan should be provided according to scale of production	8	15.7
4. Loan should be provided according to efficiency	12	23.5
5. Loan should be provided against work order	4	7.8
6. Loan should be provided according to need	14	27.5
7. Corruption should be seriously dealt with	36	70.6
8. Harassment should be stopped	20	39.2
9. Loan should be processed within a short period of time	22	43.1
10. Govt. should allocate more money for the sector	12	23.5
11. Other	5	9.8
161		

As expected the relative shares of different measures suggested correspond more or less with intensity of the problems as mentioned in Table 6.3. The overwhelming (70.6 per cent) feeling of the respondents have been found to be effective control of corruption would contribute most to improve the prevailing situation. The second most popular (43.1 per cent) step appears to be expeditious processing of loan applications. The other, two frequently suggested steps are stoppage of harassment (39.2%), decreasing of interest rates (35.3 per cent).

Interestingly, the entrepreneurs deemed it necessary to make themselves explicit on the criterion of selection of loan beneficiaries. The most popular perception in this regard is that loan should be given according to need (27.5 per cent), whereas suggestions such as loan should be given according to efficiency (23.5 per cent), scale of production (15.7 per cent), and against work order (7.8 per cent) also prevailed significantly.

Besides decreasing of rate of interest, measures advocated relating to revision of terms and conditions of loan disbursement included the sensitive issue of collateral. The entrepreneurs (19.6 per cent) reckoned that no other assets except the machineries to be purchased with loan money may be offered as collateral.

Perhaps recognising the limitation of funds of the financing agencies, particularly BSCIC, a significant proportion of the respondents (23.5 per cent) went on to indicate that the GOB's allocation to the sector should be enhanced. Two of the respondents (included in 'others') strongly advocated setting up a special bank for the engineering sector and welcomed the decision of establishing a bank for the small scale industries.

CHAPTER 7

MACRO ASPECTS OF ICM IN SMALL ENGINEERING AND METALFABRICATION
SECTOR AND SOME POLICY CONSIDERATIONS

After analysing the organisational, functional and operational features of ICM and formal financial system, the present chapter intends to focus on some aspects of ICM at the macro level. These include tentative estimates about the size of ICM in the small engineering and metalworking sector, interaction between formal and informal credit markets, etc. The other set of issues addressed in the present chapter relates to evolving a framework for promoting ICM with a view to enhance the efficacy of the monetary fiscal policy and to accelerate domestic resource mobilisation for the development of the small engineering sector.

7.1 Size of the ICM in the Small Engineering and Metalworking Sector

Whilst analysing the modes of financing of small engineering units in Chapter 4 we have already presented some estimates of the size of ICM in relative terms. Thus it was mentioned that the contribution of informal sources of finance is around 29 per cent of the initial venture capital 28 per cent of the expansion capital, 25 per cent of the working capital, etc. However, besides these relative shares, it is also necessary to generate some estimates relating to the absolute size of the ICM operating in the sector.

Our study revealed that the volume of outstanding loans of the 32 debtor enterprises, on account of their loan transactions over the period of last five years, amounts to Tk. 18,82,000. It was also reported during the survey, that the debtor units as a legacy of their earlier informal loans (taken before 1981) have inherited financial liabilities to the tune of Tk. 3,62,000. On the other hand, the non-debtor units (those who did not borrow during 1981-85) also have an accumulated financial liabilities (by 1985) on account

of informal credits to the extent of Tk. 6,72,000. Thus, the real amount of outstanding liabilities of the 51 enterprises to the informal creditors adds upto Tk. 28,16,000. We may then say that the contribution of the informal sources of finance in the investment package of the 51 sample units in stock terms at a point in time (by the end of 1986) is Tk. 28,16,000 or approximately Tk. 5,700 per enterprise.

A recent paper on the engineering sector mentioned that there are presently about 2,400 small engineering units in the sector employing 40,000 workers in the country.^{74/} It seems the author in the paper is referring here once again to the dated and understated estimates of the Small Industries Survey of BSCIC (1980-81). However, even if we take this figure as the lower bound limit of number units in the sector and assume that our sample units more or less reflect the structure of scales of operation of the enterprises in the sector, then it may be said that the total investment drawn from ICM in the Bangladesh small engineering and metalworking sector is not less than Tk. 13.7 million. But if we work out the size of the ICM taking into cognisance the more recent estimates of number of small engineering units, then it appears Tk. 11.3 million of capital borrowed from the ICM remains invested in the 2000 units of Dhaka district alone, of which Tk. 3.5 million accounts for our study areas (587 units of Dholaikhal and Tipu Sultan Road).

During the course of our survey, we tried to make off hand assessments about trend in the size of the ICM in the sector. Our respondents mentioned during conversations that, despite the increased demand for funds due to the significant growth of the sector, presently more persons are available (than in 1970) ready to finance the capital needs of the sector. The terms and conditions have also liberalised overtime. These observations may be accepted as indication of increased inflow of informal funds which has taken place even at the face of enhanced contribution of institutional finance to the sector.

7.2 Interaction Between Formal and Informal Sources of Finance

One of the important point of enquiry in an analysis of ICM is the existence of channels and mechanisms through which the formal and informal credit markets are interlinked. We also tried to explore issue.

Whilst considering the issue of interface between the institutional source of finance and informal creditors, two aspects may be differentiated. First, whether there is on-lending, where funds originating from the formal sector institutions find their way to the ICMs through intermediaries and second, whether formal sector financial institutions are tapping funds of informal sector creditors for redistribution^{75/}. These two aspects are sometimes discussed in a broader context of enhancing effectiveness of monetary policy and instruments where the necessity of redressing of one of the sectors with the advantageous features of the other is propagated.^{76/}

Our study of informal loan transactions could not trace any such cases where the origin of creditor's fund is institutional source. In that sense on-lending of funds received from financial institutions at a subsidised rate, to accrue higher return appears to be absent. But if we remember that 19.3 per cent of the informal creditors are government or semi-government employees and a sizeable portion of their investment amount has been alleged to be acquired through misappropriation of public funds, then we may say that, though in a round about fashion, a considerable share of the informal credit funds owes their origin to the state organisations, which are not necessarily financial institutions.

Alternatively, it is a common knowledge that the GOB presently does not have any policy targetted to mobilise financial resources for its financial institutions with a view to subsequently redistribute these resources through ICM.

Thus, we find the links between the two sectors of financial markets are rather weak, if not totally absent, when considered in

the context of financing small engineering workshops. Nevertheless, this is not say that the two sectors do not influence each other. As a consequence of the Bangladesh Bank's 'fix price' credit policy, subjected to various quantitative restrictions, the availability of credit in the informal sector has increased overtime. Our study suggests that the major factors contributing to the enhanced inflow of informal credit funds to the small engineering sector are the 'spill over' demand from the institutional credit market and the income differential arises from the high rates of interest charged and paid in the ICM as against the negative real rate of interest in the repressed institutional market. On the other hand, it was also observed that the increase in quantum of institutional finance inflow could make the ICM more competitive and, albeit marginally, substitute and/or supplement it.

Simultaneously, the ICM of the small engineering sector also reflects the working of the so-called 'underground economy' thriving on black liquidity, which emerges as mechanism to evade taxes and control. The operation of ICM in the sector also considerably dampen the money multiplier effect, despite the predominance of currency in its transactions, as it extends credits without accepting deposits. Further, as the ICM is providing loans in the small engineering sector on the basis of various promissory agreements without any formal collateral requirements, it allows to keep much of the lending and borrowing even outside the informal sector. All these factors make ICM act as a vehicle of disintermediation, erode the efficacy of monetary policy, perpetuate fragmentation of capital market, impede efficient mobilisation and allocation of domestic resources.

Under the circumstance it becomes pertinent to take a balanced view towards the potential and prospective role which may be played by the ICM in the development of small engineering sector and evolve a framework for its realisation. But before we move on to that subject it is necessary to have an idea about the size of credit demand prevailing in the sector.

7.3 Demand for Credit in the Small Engineering Sector

Demand for credit in the small engineering sector arises from two broad sources, viz. demand for new venture capital and demand for expansion capital. The two main components of the latter happen to be funds necessary for balancing, modernisation, renovation and new acquisition of fixed assets, and funds necessary for meeting working capital need.

The present study does not allow us to estimate the effective demand for start-up capital for setting up new units in the sector. Similarly, though our survey indicates that investment in the line of restructuring of the fixed assets of a considerable number of units would have perceptibly enhanced the economic viability of the sector, our study does not provide us with any indicator to capture the demand for funds on this account. On the other hand, the study revealed that the effective rate of utilisation of already installed production capacity is very modest (around 40 per cent) and inadequacy of working capital has been identified by more than majority of the respondents (around 60 per cent) as the factor responsible for an idle capacity of such magnitude.

Under the circumstances, to have at minimum estimate of demand for credit in the sector, we may estimate the volume of capital that will be necessary at least to utilise the existing productive assets at a reasonable level. Thus, if we assume that an effective rate of 85 per cent is a technically feasible level of capacity utilisation and there is sufficient effective demand for goods and services provided by the small engineering units, then the supplementary amount of funds necessary to meet the working capital need of the sector (with the units presently, having on an average, a working capital to the tune of Tk. 77,000) will be Tk. 392.7 million (on the basis of 1982 BSCIC estimate of number of units in the sector). Taking in to the more recent estimates of number of units, available for certain areas, the supplementary working capital requirement the

existing 2000 units of Dhaka district and 587 units of Dholaikhal and Tipu Sultan Road areas amount to Tk. 327.5 million and Tk. 96 million respectively.

Thus, in the backdrop of such an assessment of the potential working capital requirement, the amount earmarked by BSCIC-NCBs for disbursement amongs the units of the small engineering sector in Dholaikhal and Zinzira (Tk. 50 million) appears to be quite inadequate. On the other hand, the estimate about the size of the ICM indicates that, till the moment it is being able to only partially meet the potential capital demand of the concerned units. Under the circumstances, to satisfactorily neutralize the demand-supply gap of credit, it becomes necessary to increase the quantity and improve the quality of institutional finance, in the line discussed earlier. But what is possibly, which is no less important is to channel innovative efforts to muster and develop the nonconventional (but may be traditional) sources of finance and diversify the choices of the borrowers. The present study prompt us to conclude, development of new instruments of monetary and credit policy directed towards enhancing the role of the ICMs in financing the small engineering units will contribute towards attaining equilibrium in the credit market as a whole, subserving the domestic resource mobilisation and allocative efficiency objectives. If these instruments, designed to the satisfy the concrete needs and capabilities of various types of units in the sector are differentiatively used, in our opinion, ICM may also meet the equity objectives of credit allocation.

7.4 Modalities of Developing ICM for Financing Small Engineering and Metalworking Sector

Any measure targetted to the enhancement of ICM's contribution of promoting small scale engineering units should subsume in itself two basic features. Firstly, it should be able to appropitately cater to the specific need of the entrepreneurs and secondly, it should retain the characteristics which makes borrowing from ICM advantageous in comparison to other sources. Thus, the ICM should

be largely complementary and at the same time competitive with the formal sector. Of course, any such measure, equipped by the aforementioned characteristics but not forming an integral part of the overall policy thrust of improving the basic tenets of credit market will fail to achieve many of its declared objectives.

We have already mentioned that demand for funds in the sector arises from the need of financing new enterprises and the need of financing expansion and working capital of already existing units. Our study revealed that the relative shares of informal credits do not significantly vary with respect to financing of venture capital and running capital, but the relative shares of informal credit cut across the size of the units and their scale of operation. The enhanced role of informal finance in relatively smaller units in the small engineering sector is explained by these units' severely restricted access to the institutional sources. Due to their magnitude of dependence on the ICM, the smaller amongst the smalls have to be compromise with the more stringent offers of informal lending practices. A close scrutiny of the pattern and terms of borrowing reveals, that the entrepreneurs are primarily in need of short term, small size loans taking the form of bridge financing. Given the intricacies involved in such types of loan operations, it is not possible for the institutional sector to offer services in this respect economically and efficiently, once again discriminating the small borrowers. Given the situation, so as to evenly distribute the benefits of ICM operation the first thing which is to be advocated is redirection of the flow of institutional funds in favour of smaller units (having a fixed asset investment upto Tk. 2,00,000, working capital upto Tk. 50,000 and a credit demand limit of Tk. 1,00,000). Secondly, restructuring of the loan packages by attaching importance to disbursement of small loans with relatively smaller repayment period (may be one year).^{77/} This would have not only improved the economic viability of the smaller units but also enhance their bargaining capacity in ICM, to which they will have to resort to meet their excess credit demand.

When we consider the forms of developing ICM for the small engineering sector, it should be remembered that bulk of the informal credit funds was provided by the small engineering enterprise owners themselves. Given the rate of return from the investment in the sector, one of the viable methods of resource mobilisation for the sector would have been organisation of Savings and Loan Associations of the entrepreneurs, whose economic function would have been obtaining savings (deposits) from the members and invest the funds in financing small engineering workshops (giving preference to the members).^{78/} Emergence of such savings and credit unions would have possibly effectively squeezed the role of such 'exploitative' lending practices as 'free servicing and repairing' and 'profit sharing arrangements'.

On the other hand, we also found that savings and accumulations generated in other spheres of economy have been used to finance small engineering units. In order to tap these resources and augment their inflow, setting up of indigenous finance company(ies) may be considered. This type finance companies will be an intermediary (usually a partnership form or in rare case private or public limited company) set up for making profit from the business of lending money raised by ways of subscribed capital or borrowing. The finance companies may perform many of the bank functions such as bill discounting, collection of remittances, maintain deposits, offer security, etc. It is reckoned that establishment of such companies would not only rationalise the interest rate structure in the ICM of the small engineering sector but also broaden the opportunity of efficient allocation of funds and dissolve the segmental barriers.

In our opinion promotion of these types of institutional initiatives in informal credit market as against other forms of primitive lending agencies viz. indigenous style bankers, individual commercial financiers, finance brokers, commercial paper discounters, pawn brokers, would be able to develop and integrate the capital market with the economic and financial demands of the small engineering sector at its present stage of development. These financial innovations would be able to rationalise transaction costs of loan opera-

tions, reduce default risk, minimise monopoly profit and narrow interest rate differentials. However, systematic development of these forms of financial intermediaries presupposes that these agencies should come under the functional purview of the Bangladesh Bank (e.g. registration, provision of technical services, etc.) and should be subjected to taxation, even if nominally. Propagation of evolution of the ICM in this fashion would also necessitate rethinking by the policy makers about the role the ICM is envisaged to play and promulgation and revision of legal instrumentalities.

CHAPTER 8

CONCLUDING REMARKS

The present study prepared as a part of a broader study on urban informal financial market has remained confined to an examination of the organisational, functional and operational aspects of informal credit market operation and its nature and scope of financing the Bangladesh small engineering and metalfabrication sector.

Due to the role played by the small engineering sector in the Bangladesh economy and, moreso, for its future growth potentials, the sector remains an obvious candidate in the list of priorities of investment financing. In view of this, the present study involved itself in an indepth analysis of the sector in terms of capital structure and technology, employment and labour, capacity utilisation, inputs, value added and productivity, entrepreneurship, marketing and finance. Possibly here lies on of the strength of the present study. The analysis of the whole chain of procurement, production and marketing aspects of the units contributed towards ascertaining the factors inhibiting the further development of the sector.

The study, revealed that finance happens to be one of the main constraints, it not be most, impeding fuller realisation of the potential of the sector. Detailed analysis of the present status of financing initial capital expansion capital, working capital and output disposal brought to the forth that though the engineering workshops are better endowed financially in long term sense, they have a very vulnerable liquidity position. Limited access to institutional sources of finance has forced the entrepreneurs to fall back on non-institutional lenders as second line of defence.

Aspects of ICM operation had always been the focus of the study. Detailed examination of each of the loan cases recorded in the sample units allowed us to assess the structure, intensity and direction of flow of informal funds through the sector, identify the lenders and their terms and conditions of lending including levels and structures of interest rates; form a judgement regarding nature and potential of the ICM and assess the consequences of borrowing from the informal sources.

Whilst pursuing the study, it was deemed that causal nexus of ICM operation can not be satisfactorily comprehended without an understanding about the problems associated with institutional financing. Thus, a significant portion of the report is devoted to the analysis of the network of institutional finance, incidence, size and purposes of institutional loans, terms and costs of borrowing from institutional sources and to the identification of factors responsible for limited availability or uses of institutional loans.

A comprehensive analysis of the technological, supply, marketing, production, finance, entrepreneurship and other socio-economic characteristics of the small engineering units along with a detailed comparative discussion of nature and modalities of ICM and institutional financing contributed towards estimating the demand for credit in the sector, the size and potential of the ICM and their macro-economic implications. Thus, on the basis of the findings of the study, the present report, with a view to promote the small engineering and metalworking enterprises of the urban informal sector, puts forward a set of proposals aiming at expanding the role and improving the efficiency of ICM in a planned manner in the context of further development of institutional finance and enhancement of the efficacy of monetary and credit policy.

10. G. Carillo-Lucas and G.T O'More. The Urban Informal Credit Market in a Developing Country under Financial Depression: The Peruvian Case, Institute of Latin American Studies, University of Texas, 174.
11. Reference has been made of the regional study on ICM initiated by the Asian Development Bank. The countries chosen for the study are Korea, the Phillipines, Indonesia, Thailand, India and Bangladesh. For an understanding of the design of the study and other relevant issues see: Some Issues for Regional Study on Informal Credit Markets. Preliminary discussion paper. ADB, 19 April, 1985.
12. For an idea about the existing state of knowledge about ICMs in Bangladesh see: Informal Credit Markets in Bangladesh, Review of the Literature and a Study Outline. BIDS, March 1986.
13. For a brief account of the sector underlining its importance, present size and future potential see chapter 2.
14. The broad objectives of the UIFM study are to examine:
 - i) the role played by the UIFM in providing financial support to urban small scale enterprises;
 - ii) whether it is desirable to develop IFM for promoting urban informal sector, particularly the small scale enterprises who have little access to formal sector institutions; and
 - iii) if found desirable the modalities for promoting UIM.

See for details: Terms of Reference of Urban Informal Financial Market in Bangladesh. BIDS, 1986.
15. According to one estimate of BSCIC, on 1985 there were a total number of 519 units in Dholaikhal area of which 100 were manufacturing, 42 repairing and servicing, 118 scrap reconditioning and trading and 158 scrap trading units. The number of units in Tipu Sultan Road area happened to be during that period 68.
16. For a detail profile of the sample units see chapter 3.
17. See for details: World Bank. Bangladesh Issues and Prospects of Industrial Development. Vol. II. 1978. p.99.
18. The establishments covered under the CMI were those 'factories' registered under sector 2(j) and 5(ii) of the Factories Act, 1934 or under section 2(f) of the Factories Act, 1965 which means that the factory employs (i)20 or more 10 or more workers using power or not, or (iii) 10 or more workers using power or not but the manufacturing process do not include a mine subject. See for details Bangladesh Census of Manufacturing Industries. Summary Report 1980-81. BBS 1984.

19. See: Statistical Yearbook 1986. DBS. p. 454-455.
20. Rural Industries Study Project (RISP) of BIDS classified 2.4 per cent of the total enterprises surveyed under the metalworking and engineering sector where 1.7 per cent of the workforce was employed. See for details RISP Final Report. BIDS. 1981 p-70-72.
21. Small and Medium Scale Metalworking Industries Phase - Two JICA/TECHNONET ASIA. 1979-80. p. 15.
22. The study used the information from the cottage industries survey of BSCIC as they were and estimated the relevant values of small industries from the other BSCIC survey, adjusting them by using the growth rate achieved by each of the sub-sector over the period. See for details: Habibur Rahman, et.al. A Study on the Small and Cottage Industries of Bangladesh. 1986.
23. It should be noted that as per the ISIC or BSIC 371 and 372 basic metal industries (ferrous and non-ferrous) denote the iron and steel mills/foundries/rolling mills, and production of basic aluminium, copper, their alloys, etc. Whilst describing the sector in the foregoing paragraphs these sectors have not been considered.
24. According to a recent estimate of BSCIC (1986), there are at present more than 2000 such units in Dhaka district alone, showing a spectacular increase over BSCIC survey (1978) which put the corresponding number at 662.
25. Whilst the construction sector bears the bulk of the burden of high cost of locally produced steel, it is the engineering sector which is crippled by the high costs of imported steel. For a detail understanding of the policies affecting the sector see relevant TIP Studies.
26. By 'entrepreneur' in this study we mean the owner of the unit even when he does not run the day to day affairs of the unit. In those cases, where there were joint ownership, the principal shareholder has been interviewed, although whilst taking stock of asset and liabilities of the unit, the enterprise in totality has been considered.
27. The RISP found that amongst the urban proprietors 15 per cent had no formal education and only 22 per cent read upto secondary and above. See RISP Final Report. p. 208.
28. Here by 'establishing' we have meant procurement of machineries and equipment (old or new) and organisation of production (may be at premise which was previously used for this purpose).

29. This figure excludes the proprietors. The proprietors are sometimes engaged in the production (partly or wholly) sometimes they are involved in management only. It has also been observed, although in very few cases, that the proprietor is not at all associated with the running of the business where it is looked after by an employee. So as to evade this confusion we have presented the figure excluding the proprietors.
30. However, there were workers who belonged to the same family.
31. This information was provided by the respondents themselves in responses to the query what value will the asset currently fetch if sold in the market in its present condition.
32. Note that this estimate of external contribution to the working capital do not include other informal borrowings (institutional sources do not usually provide credit for working capital) for working capital purpose. Thus, the share of external sources in financing working capital is probably more than 24.8 per cent.
33. Paradoxically, in contrast to the low rates of duty on most machinery imports, materials used in the manufacture of those machinery and equipments are taxed at a higher rate in Bangladesh, thus providing a low effective rate of protection to the engineering and metal fabrication section. See for details Overview of Assistance Policies for the Steel and Engineering Sector. TIP Doc. MU-A. Sept. 1985.
34. Whenever detailed information was not available average input-output co-efficients of the small engineering and metalworking activities were used to treat the data.
35. For details on role of credit or deferred payment in raw material procurement see chapter 4.
36. Some of the valid criticisms worth mentioning are (i) practicability of accurate measurement of inputs especially of capital, (ii) validity of such assumptions of the production functions as a maximisation of profits by each entrepreneur and (b) smooth and continuous isoquants i.e. smooth factor substitutability.
37. As explained earlier, our estimates of working capital based on observation may not be accurate enough measurement of normal working capital requirement. However, exclusion of working capital from the estimates of capital would have distorted the results as timely availability of various working capital components in adequate quantity may be an important determinant of value added and profits.
38. Details on institutional credit operations for small engineering and metalworking sector have been provided in chapter 6.

39. For details see chapter 5.
40. Accurate measurement of depreciation of machinery and equipment is difficult. For simplicity we have divided the resale value of each of the fixed asset items by their respective prospective life span, as indicated by the respondents. It was assumed that all assets depreciate at constant rates over their life time. Whilst this has taken care of material depreciation of the fixed assets, aspects relating to moral obsolescence could not be accounted for, which is considered to be important for a dynamic sector thriving on modern technology. However, it may also be argued that this aspect has not yet acquired critical relevance in the small engineering and metalworking sector under the prevailing circumstances.
41. See for example: Inderjit Singh, N.S. Gupta. Financing of Small Industry New Delhi 1977; H.S. Pareek, Financing of Small Scale Industries in a Developing Economy, New Delhi, 1978; Development Finance for Modern Small Factories, McGraw Hill, 1967.
42. However, this position has been termed by a number of scholars as "the capital scarcity illusion". They maintain that the entrepreneurs often have substantial resources uneconomically employed and are not likely to make optimum use of additional capital if they can obtain it. The other argument in the same vein is that there is no shortage of capital, the problem is of limited availability of viable projects. See for example: Malcolm Harper. Small Business in the Third World. John Wiley & Sons 1984. p. 45-46.
43. It was felt during the discussions with entrepreneurs that they could hardly distinguish the relative contribution of various sources of their own resources, moreover, when the mobilisation of these internal resources took place quite a long time back. As a result, due to the absence of reliable figures, information on breakdown of own capital could not be provided.
44. By the term 'expansion capital' in the present context we mean capital invested for acquiring new fixed assets and as well as for supplementing working capital. Appreciating that the respondents may not be able to recall precisely the amount of investment made under specific heads we deemed it will be more appropriate to ask about investment for expansion of the enterprise in general. However, what was more relevant for our purpose is to study each of the loan incidences (formal and informal) with respect to its source and use. This analysis, presented in the following chapter, shed light on contribution of borrowed capital in financing fixed asset acquisition and additional working capital.

45. Refinancing through profit in this case means reinvestment of savings, generated in the small engineering and metalworking firms. Reinvestment of savings from other sources of income are included in 'other own sources.'
46. It seems that the figure indicated as reinvestment of profit in the Tk. 1,00,000-2,00,000 investment range has been understated. There is a suspicion that a significant portion of the reinvested profit has been reported by the respondents, for reasons mentioned earlier, under 'sale of property'.
47. It is suspected that the respondent entrepreneurs usually understated the liquid amount at their disposal for meeting current expenses.
48. Subcontractor means a firm which contrast to do work for another company. The works include production of unique components and services which are incorporated in products manufactured by the subcontractor and furnishing standard components such as nuts and bolts, bearings, standard auxiliaries and supplies. See for details Subcontracting Activities in the Engineering Industries in Bangladesh. TIP Position Paper Doc. TIP-IIPU-A 14. 1985.
49. See for example Capital Market Imperfections and Economic Development. World Bank Staff Paper No. 338, 1979.
50. Methods of interest calculation have been elaborated later.
51. For an estimate about the aggregate amount of real outstanding informal loans of all of the sample enterprises see chapter 6 where we discuss the level of indebtedness of the sector to the ICM.
52. See for details the following sections on sources of informal credit.
53. Of course this observation does not refute the possibility of existence of pure professional moneylenders. Had it been known to us that the dominant source of income of a creditor is derived from usury capital, then we could have confidently categorised him under moneylending profession. Alternatively, but the fact that the borrower primarily identifies the creditor as a professional moneylender may be accepted as an indication of the magnitude of the moneylending operation of the particular creditor. However, the point is a modern money lender in the UIFM in an attempt to maximise his income may involve himself into various types of activities, beyond just financing others' business.

54. Here again, this observation does not imply that the earlier assumption that the ICMs are segmented (horizontally and vertically) does not hold true in the case of small engineering and metalworking sector. This issue has been discussed later.
55. It so happened that one of our creditors, involved in engineering sector associated activities has direct production link (along with credit relation) with units other than our sample debtor units. These cases have been included under 'No linkage' whilst drawing up Table 5.8.
56. Besides other literature, the lively debate which went on the pages of the Journal Economic and Political Weekly (EPW) a couple of years back may be referred to in this context. See: S. Acharya, S. Medhur. Informal Credit Markets and Black Money. Do they Frustrate Monetary Policy. EPW, Vol. 18, No. 1, 1983; K. Sundaram, V. Pandit. Informal Credit Markets, Black Money and Monetary Policy - Some Analytical and Empirical Issues, EPW, Vol. 19, No. 16, 1984.
57. For example, one of the lenders who is a clerk in the PDB with a monthly salary of less than Tk. 3,000 has lent out a sum of Tk. 2,00,000 to one of the debtors.
58. It may be possible that a portion of these 'savings' are unearned incomes, which the respondents could not distinguish or did not want to distinguish.
59. Even a 'cost free loan' involves transaction cost, usually beared by the borrower. At this point we are abstracting from transaction cost as we use the term 'cost'.
60. There are cases where there was no stipulated interest and no provision for providing financial benefits to the creditor, but the debtor feels that he has to make costly presents to the creditor on various social occasions (e.g. marriage ceremony of the son of the creditor) only because of his obligated status. We considered it will be appropriate to include such 'costs' into transaction costs.
61. However, it is our field experience that our respondents are still very sensitive to the issue of usurious money lending. All of them refused to accept the possibility that such form of lending (in overt or covert fashion) exists as one of the modes of financing of the sector.
62. These types of profit sharing should be distinguished from that of the cosharers, who are usually associated with enterprises from the moment of establishment and even if they come into the picture later they do not make their involvement contingent to the time frame.

63. Strictly speaking 'bad debt' is a subjective perception of the creditors. Although creditors were not available to express their opinion on this issue, it is believed that the creditors would have liked to see their funds remain invested in the sector as it would be bringing higher recurring incomes to them.
64. We discuss later the transaction cost as a part of costs of borrowing.
65. Of course there are sectors where the rates of return to investment may be more than 29%. But due to basic characteristics of the capital market, particularly due its segmented nature, the creditors usually can not take advantage of these higher rates of return.
66. Comparable evidences in this regard is absent in Bangladesh economic literature. However U. Tun Wai in one of his articles, based on a study of informal credit markets in 15 developing countries estimates that one-sixth of 29 percentage point difference between institutional rates (averaging 11%) and non-institutional rates (averaging 40%) is due to defaults and risk factors. In other words in the high level of interest rates of informal loans about 4.8% is explained by riskiness of informal lending and possibility of defaults. See: U. Tun Wai, The Role of Unorganised Financial Markets in Economic Development and in the Formulation of Monetary Policy, Savings and Development No. 4, Vol. 4, 1960.
67. See for example H. Rahman et. al. Entrepreneurship and Small Enterprise Development in Bangladesh. Bureau of Business Research, Dhaka University, 1979.
68. For a short synopsis on the background and activities of BSCIC see Bangladesh Small and Cottage Industries Corporation. An Industrial Extension and Service Organisation. Dhaka, October, 1986.
69. The other credit programmes of BSCIC are Special Credit Programme under the lead bank system, USAID Fund in collaboration with Bangladesh Krishi Bank (BKB), UNCEF Fund in collaboration with UNDP/ILO, Fund for rural women in collaboration with BKB, USAID Fund for innovative industries.
70. Obviously there are much more units in these areas than the BSCIC estimates.
71. For a systematic analysis of policies used by COB to influence credit allocation see A. Virmani Evaluation of Financial Policy: Credit Allocation in Bangladesh, World Bank Staff Paper No. 672, 1984.

72. Two more units have also indicated that they have received Bank loans, but as one of them only received it in early 1987 and the other had only applied but did not get any fund as yet, we have not reported them here.
73. The usual practice is that the borrower has to come to an arrangement with functionaries of the Banks and BSCIC to get a loan. The arrangement usually imply paying of cash money for lubricating the approval process and sacrificing a cut on each of the installments during disbursement. Anybody not agreeable to abide by these unwritten rules may not have his application approved, and even if he gets it approved after much delay, the money may not get disbursed.
74. A.M. Syed Hamed, Future of Light Engineering Industries, BSCIC, Oct. 1987.
75. See for example: Some Issues for the Regional Study on Informal Credit Market, ADB Discussion Paper, April 1985, p.15.
76. A.G. Chandravarkar, The Non-Institutional Financial Sector in Developing Countries: Macroeconomic Implications For Savings Policies, Savings and Developments No. 2, 1985 (IX), p. 139.
77. We are yet to see the modes of financing by the envisaged Small-scale Industries bank. However, if cognisance would have been taken of the opinions expressed by the entrepreneurs (in Section 6.9.3), it would have helped the Bank of achieve many of its declared objectives.
78. This form of organisation should be differentiated from Chit Fund system (rotating credit arrangement), which is not always profitable for the depositors and where it is often run by the traders who use the funds to meet their own working capital need and where the funds are frequently used to for non-productive purposes.

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Study on Urban Informal Financial Market

INDICATIVE TERMS OF REFERENCE

STUDY ON INFORMAL FINANCIAL MARKET AND THE METAL PRODUCTS SECTOR IN BANGLADESH

The small scale and cottage industry sector accounts for about half the GDP contributed by the industrial sector in Bangladesh. In the small scale industries sector, textile sector (Handloom and small scale units) perhaps is the largest contributor, but no less important is the small metal products and engineering workshop sector, particularly when considered not only from their absolute contribution to GDP, but also from their growth linkages and future potentials perspectives. From a virtually nonexistent sector even about a decade ago, this sector has taken up a place of importance in the urban and semi-urban areas. It is estimated that at present there are well over 2000 such small engineering workshops in Dhaka district alone (BSCIC 1986) showing an increase of about 100 per cent over 1978 when a BSCIC survey put the number at 897 in basic metal industry and 310 in metal fabrication. The average employment is roughly 20 and 12 employees respectively with an average capitalisation of over taka 100,000. There were about 1140 light engineering workshops in the cottage industries category with average employment of 4 family members and capitalisation of about 50,000 taka. The 1979/80 Technonet Study (JICA, BSCIC) metal working firms reports that 38% of the shops produced parts for industrial machinery and 8% agricultural machinery. Many (about 40%) worked as sub-contractors of larger enterprises.

The high turnover of these units and rather high capitalisation value of the units naturally raise the question about the financial requirements of this sector -- both in the current context of inadequate development of the formal financial sector to cater to the needs of the small enterprises and also in the context of growth

and linkage potential of this sector with other sectors. It is believed that the small firms do not have access to formal financial institutions which usually lend to borrowers with acceptable collaterals. The small firms with their needs for short-term credit, credit at short notice without collaterals, etc have to turn to informal sectors for their financial requirements. In many cases, the informal sector consists of friends and relatives, but with a greater degree of specialisation of this activity, moneylenders, middlemen and activity specific traders also put out loans and credit under various financial terms and conditions. The objective of this specific case study is to find out in-depth and in as much detail as possible the nature of financial transactions, the role of informal and formal financial sectors, the nature and structure of interest rates etc. It is hoped that the study will also be able to come up with recommendations for development and growth of an optimal financial arrangement for this sector.

The case study methodology

This case study will primarily examine the financial aspects of small metal products sector (including small engineering workshops) in Dhaka, concentrating primarily on the units situated in the old Dhaka city areas (Tipu Sultan Road, Dholai Khal, etc). Some metal forging, ship breaking units in the outskirts of Dhaka should also be covered for this study on complete the chain of trading in the metal working sector.

An anthropological case study approach would be taken to know more about the sector, its composition, working capital requirements. The Technonet Study of JICA could be good reference point for the study. The researcher could also seek the assistance of the Small Scale Engineering Workshop Owners Association in providing further reference.

Once the trading links and structure of the industry is known, the researcher could seek in-depth information about their financial transactions, working capital requirements, etc. The researcher

should also seek to quantify some aspects through a small sample survey covering about 50-100 small units, but keeping the length of the questionnaire within a reasonable limit.

Specific Terms of Reference of the Study

- a) A brief account of this sector underlining its importance, present size, future potential and growth.
- b) An assessment of the structure and composition, detailing the trading links and flow of funds and inputs.
- c) An assessment of working capital requirements and financial needs.
- d) An assessment of government policy, if any, towards financial support to this sector.
- e) An assessment of the dependence of this sector on informal financial markets, establishment of links among transactions and trading aspects and assessment of their implications.
- f) Assessment of formal/informal financial sector interaction, if any.
- g) Resource generation, mobilisation and flow through this sector.
- h) The equity and income distribution aspects of financial transactions.
- i) Recommendations about the development of an optimal financial regime to serve the specific needs of this sector, with emphasis on the possible modes of development of the informal financial sector.