

Technological Upgrading in Bangladeshi Manufacturing: Governance Constraints and Policy Responses in the Ready-Made Garments Industry

Mushtaq H. Khan¹

Summary: This study looks at the challenges facing Bangladesh in sustaining high growth in its labour-intensive manufacturing. Sustaining this output growth and achieving wage growth and improvements in working conditions requires technological upgrading and moving up the value chain. This study examines the challenges this poses by looking at the premier manufacturing sector in Bangladesh, the ready-made garments industry.

The problems faced by developing country firms in upgrading their technology and moving up the value chain are well-known in broad terms. These include in particular problems of i) financing the acquisition of new (and therefore more risky) technologies, ii) upskilling workers and employees, and iii) acquiring land for contiguous expansion, particularly in locational clusters. A second set of problems to do with infrastructural constraints, utility supplies and predictability of policies are already well known. Many of the established policy responses to the problems of technology upgrading focus on the second set of issues through good governance and improvements in the investment climate. We argue that the international evidence suggests that these approaches are unlikely to make an impact in the short to medium term. In contrast we suggest that a clear understanding of specific problems and targeted policy and governance responses is the way forward. It draws on an intensive survey in Bangladesh of a number of firms in the sector. It suggests that by beginning with existing Bangladeshi financial and other instruments and development experiences, incremental improvements in policies and governance capabilities can make a significant positive impact. Concrete policy suggestions are put forward for further development and policy advocacy in each of the three broad categories of problems faced by the garment sector.

1 Professor of Economics, Department of Economics, School of Oriental and African Studies (SOAS), University of London, e-mail: mk17@soas.ac.uk. The author is indebted to Shahamin Zaman for her vital input as the research assistant in this project, to UNDP Bangladesh for providing the infrastructure and financial support for the research and in particular to Jessica Murray for her oversight of the project. We are particularly grateful to the owners of garment factories, commercial banks, the Bangladesh Bank, donor agencies, officials of the Government of Bangladesh and other stakeholders who generously gave their time to participate in the survey and stakeholder conference. The author alone is responsible for the analysis in this paper.

CONTENTS

TECHNOLOGICAL UPGRADING AND MARKET FAILURES.....	6
MARKET FAILURES IN TECHNOLOGY UPGRADING	11
i) Market failures in Financing and Sharing Risk in Technology Upgrading Investments.....	11
ii) Market failures in training and upskilling.....	15
iii) Market failures in Land Markets	16
THE SURVEY AND STAKEHOLDER CONSULTATION	19
FINANCING INVESTMENT AND TECHNOLOGY UPGRADING	22
Traditional Bank Lending is the dominant form of external financing	22
Bank Finance is readily available in the sector	23
Relatively high interest rates and significant exposure of owner’s collateral.....	23
Virtually no institutional mechanisms for sharing risks involved in upgrading	23
Investors prefer to rely on own financing, reinvested profits, and occasionally foreign partnerships for financing risky investments	25
New entrants face much harder constraints in accessing bank finance	26
POSSIBLE POLICY RESPONSES TO ADDRESS FINANCING MARKET FAILURES	27
Developing stock markets is not a realistic immediate solution.....	27
Developing risk sharing financial instruments: Building on the Equity and Entrepreneurship Fund Model	28
Islamic banking instruments can be modified to achieve effective risk and profit sharing	32
Direct government subsidies to reduce risk in technology upgrading.....	33
Government/Donor subsidies to reduce setup costs in technology acquisition: The Danish B2B Model	34
LABOUR SKILLS AND TRAINING	36
Significant shortages of both skilled and ‘unskilled’ workers.....	36
The helper system of ‘on-the-job’ training under threat from rising labour costs	37
Many training institutions but most suffer from low uptake	37
POSSIBLE POLICY RESPONSES TO ADDRESS MARKET FAILURES IN TRAINING AND SKILL ACQUISITION	38
Supplant ‘helper’ system with alternative training schemes for ‘unskilled’ workers.....	38
Encourage uptake of training in accredited private training institutes with targeted training subsidies	39
LAND ALLOCATION AND THE ACHIEVEMENT OF SCALE ECONOMIES	41
Land scarcity prevents contiguous expansion	41
Scale economies and clustering economies lost	41
Development in unauthorized zones is common	42
POSSIBLE POLICY RESPONSES TO ADDRESS LAND MARKET FAILURES	42
Administrative and political preparations for effective land acquisition take time and work has to start urgently.....	43
Enforcement of zoning laws should be phased in gradually	44
Interim Steps: infrastructure provision to existing clusters and assistance with land acquisition	44
APPENDIX: LIST OF PARTICIPANTS IN SURVEY AND IN STAKEHOLDERS CONFERENCE	46
References	49

FIGURES

Figure 1 Market Failures, Technology Upgrading and Policy Responses.....	7
Figure 2 Market failures in risk-sharing and financing of technology acquisition.....	12
Figure 3 Market failures in labour training and upskilling.....	16
Figure 4 Market failures in the land market	17
Figure 5 Survey Findings and Policy Proposals for Financing Upgrading	22
Figure 6 Risk sharing characteristics of alternative financing instruments	30
Figure 7 Survey Findings and Policy Proposals for Skills and Training.....	36
Figure 8 Survey Findings and Policy Proposals for Land Market Failures	41

TABLES

Table 1 Bangladesh Ready-Made Garments Industry Annual Rates of Growth of Dollar Value of Exports 1985-2006	3
--	---

Developing countries like Bangladesh have transformed their manufacturing sectors in the last two decades by expanding their exports of labour-intensive manufacturing products. Bangladesh has achieved double digit growth rates in exports of garments for over two decades, summarized in Table 1.

Table 1 Bangladesh Ready-Made Garments Industry Annual Rates of Growth of Dollar Value of Exports 1985-2006

Year	Woven	Knitwear	Total RMG Export
1985-1990			45.9
1990-1995			24.1
1995-2000			14.3
2000-01			11.7
2001-02	-7.1	-2.5	-5.7
2002-03	4.3	13.3	7.2
2003-04	8.6	29.9	15.8
2004-05	1.7	31.3	12.9
2005-06	13.5	35.4	23.1

Sources: (based on Mlachila and Yang 2004: Table 1; World Bank 2005: Table 1).

While much of this growth has been at the lower ends of the value chain, there is also evidence of growing backward linkages and diversification. By 2005, roughly 45% of export value was value added in the domestic economy due to growing backward linkages in spinning, weaving, dyeing and accessories (Bhattacharya, et al. 2002; World Bank 2005; Ahmed and Hossain 2006). However, it is also widely recognized that the Bangladesh garment industry operates at the lower end of the value chain.

For instance, the *average* per kilogram price of its knitwear exports to the European Union market is around half that of India or China, and around one third that of Turkey (Rahman 2004). Within this product basket, when we compare unit prices of Bangladeshi exports with that from other countries, Bangladeshi prices are comparable to its competitors, suggesting that its lower wages do not give it any significant advantage over competitors. Bangladesh's wage rates in the garment industry are also known to be one of the lowest internationally and the lowest amongst its regional South Asian competitors (Ahmed and Hossain 2006: Figure 4).

Taking these facts together, it follows that Bangladesh has the lowest value-added per employee amongst the major garment exporting countries, and this is sustained by having one of the lowest wages and salaries per employee (Mlachila and Yang 2004: Table 9). Mlachila and Yang's figures show that around 1997-2001, Bangladeshi value-added per employee was less than one-fifth that of China, and about a third of that of India. Bangladeshi wages and salaries were a quarter of China and just over half the Indian average. Recent trends in wages across countries suggest that these ratios are unlikely to have changed very much. It is also true that wages and conditions in the garments industry have become a growing source of friction between

management and workers. In 2007 and 2008, garment industry workers continued to protest despite the state of emergency declared by the interim caretaker government.

These observations suggest that Bangladesh concentrates on a low-value product mix in its export basket, and *even within that low-value product mix*, its competitiveness is based on low wages that compensate for its lower productivity. This allows Bangladesh to sell low-value products at the same price as its competitors, most of whom can afford to pay somewhat higher wages. This situation is precarious not only because there are other low wage countries trying to enter this market, but also because the low wages of Bangladeshi garment workers cannot be taken as a given, particularly given the mobilization of garment workers over the last several years demanding higher wages and better conditions. Both moving up the value chain into higher value-added products *and* raising productivity are critically important for Bangladesh.

Sometimes, looking at value chain analyses for poor countries like Bangladesh can give the misleading impression that because labour cost is a small part of the price of the final product, improvements in labour productivity will have a small effect on price competitiveness. For instance, Khondker and Razzaque (2003: 20) using World Bank data on integrated value chain analysis for the Bangladesh garment industry argue that a *doubling* of labour productivity would only have an effect of 3 cents on the price of a typical T-shirt and would therefore not significantly affect Bangladesh's competitiveness.

This type of conclusion is misleading because a doubling of productivity would allow a *doubling* of all wages in the firm, which would not be insignificant. Alternatively, it would allow an increase in profits for the firm in the tens if not hundreds of thousands of dollars every year, depending on the size of the firm. This is obviously because a few cents on a T-shirt translates into large sums of money over a production cycle. This is also why orders can move from country to country in response to these few cents given the absolute sums that are involved. Obviously, it is also important to move up into higher value-added products, and this too is a goal of technology upgrading.

Clearly, to sustain Bangladesh's growth and to provide higher wages and better conditions to workers, it will have to make sustained progress in technology upgrading and in moving up the value-chain (Gereffi and Memedovic 2003; ILO 2005; World Bank 2005). The challenge is particularly serious because staying in the same place is not an option. Bangladesh faces persistent competition from above as more advanced countries like China and India begin to enjoy access to protected markets as a result of the MFA phase-out. The effects are not yet fully obvious because these countries are making significant investments to upgrade their technologies to compete in previously restricted markets. The full effects of this will become apparent once these investments come on-stream in the next few years.

India, in particular, has undertaken a significant investment strategy to upgrade textile sector technologies using government subsidies and well over one billion dollars of subsidy have been disbursed so far (Ananthakrishnan and Jain-Chandra 2005: 23). But Bangladesh also faces competition from below as other low wage countries like Vietnam, Cambodia and very soon African countries are likely to exploit the

privileged access they have been granted to European markets, and they too will be trying to muscle into Bangladesh's traditional markets at the low end of the value chain.

The experience of more advanced developing countries shows technology upgrading and moving up the value chain involves considerable risk and uncertainty. In a context of pervasive market failures in developing countries, technology upgrading requires appropriate financial and policy support from government. The key to technology upgrading is to address these market failures while also ensuring that institutional and governance structures exist to ensure that adverse incentives are not created and resources are not wasted.

TECHNOLOGICAL UPGRADING AND MARKET FAILURES

Technological upgrading in developing countries is potentially subject to serious market failures. In the 1960s and 1970s, states tried to address these difficulties by introducing protection for infant industries and many types of subsidies to accelerate technology acquisition in modern industries. Unfortunately, these attempts to address market failures sometimes led to even more serious government failures and the loss of public resources through wasted subsidies and inappropriate regulations. That experience made both business and government in developing countries reluctant to develop programmes that directly addressed market failures.

Instead, the focus in recent years has been to promote ‘good governance’ and a favourable ‘investment climate’ as a way of improving market efficiency in developing countries. The idea behind these strategies is to make the market sufficiently efficient so that market failures become less serious. If this could be achieved, the necessary technological upgrading could happen through the market without the necessity of further policy or financial assistance from government. But this approach too has been disappointing because it is clear that achievable improvements in market efficiency through good governance reforms in developing countries are *very* slowly achieved, too slowly to make an impact on immediate growth challenges.

There is therefore an urgent need to develop specific instruments and governance capabilities to address critical market failures (Khan 2007). This task is urgent but by no means easy. It will require a shared understanding of these problems by business associations and concerned sections of government to begin to address them.

The methodology for this study was at the interface of several parallel approaches to the problem. First, we looked at the insights that economic theory and cross-country evidence give us on the types of market failures that developing countries face in achieving technological upgrading. Second, we conducted an in-depth survey of a selection of firms, banks and other stakeholders involved in the sector to get a better understanding of the processes of upgrading and constraints facing technology upgrading. Thirdly, we looked at instruments, particularly financial instruments that already exist in Bangladesh that may be starting points in a discussion about the instruments and governance capabilities that can be developed to address specific problems facing this sector.

By testing theoretical issues against the experiences of entrepreneurs and financiers in the field, and then looking at shortcomings in existing instruments that have actually attempted to address these problems in Bangladesh and other countries, we identify a number of promising areas that policy could address. While we focus on the ready-made garments industry as an illustration, our approach could be of relevance for the wider manufacturing sector in Bangladesh. Figure 1 summarizes the main types of market failures that investment in technology upgrading in poor countries faces and locates our policy focus against others.

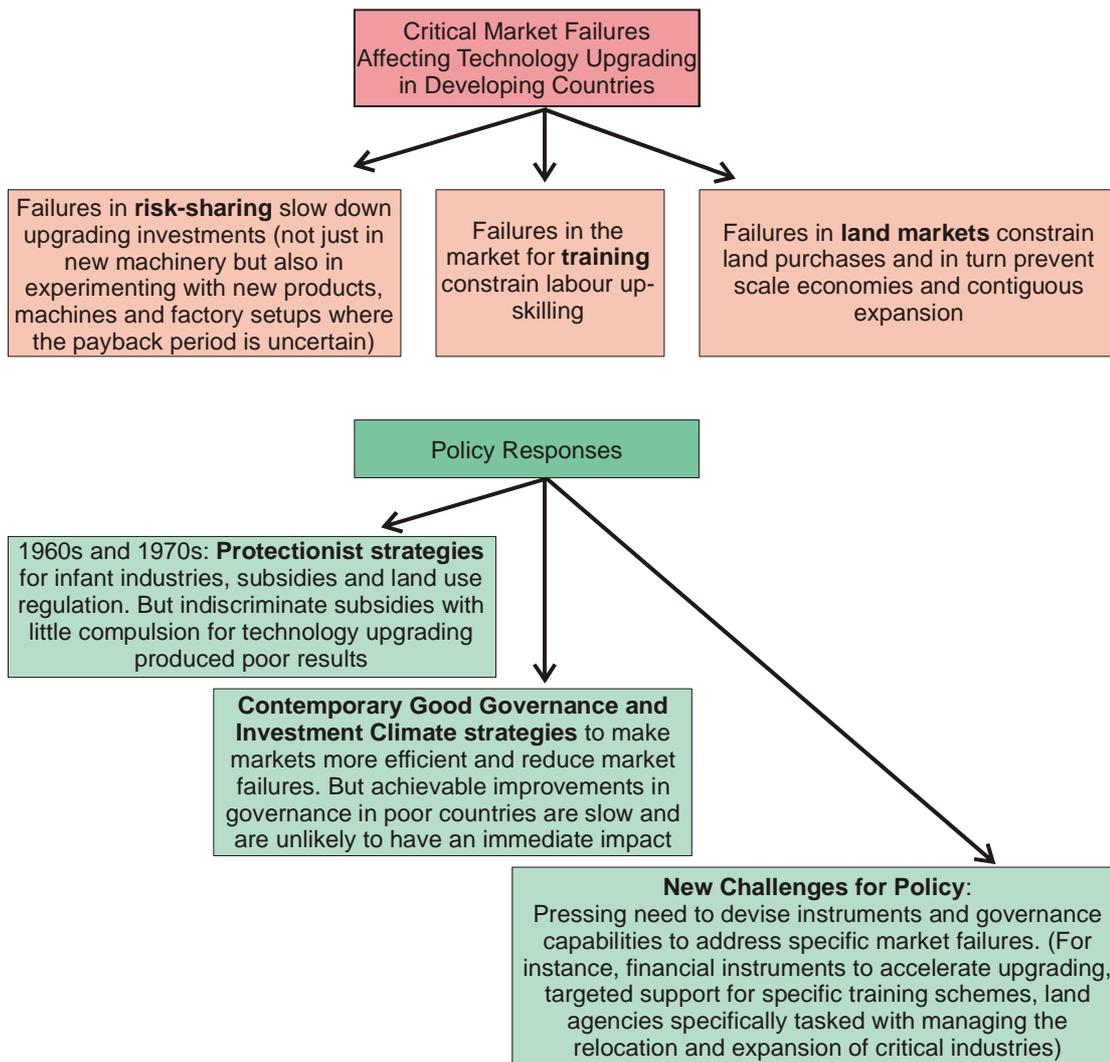


Figure 1 Market Failures, Technology Upgrading and Policy Responses

Technology upgrading is likely to involve one or more of the following: i) the purchase and financing of new machinery, ii) the training of workers and employees to effectively use new machinery, new processes or serve new markets with new products and iii) investments in ancillary factors and in particular land to enable the efficient expansion of production.

The financing of technology upgrading involves some specific problems that are often not well recognized. Unlike investment that expands existing production or replicates technologies that are well known to the investors, new technologies have an unknown payback period. In other words, these investments involve a higher degree of risk and uncertainty, and high levels of investment in these areas require the presence of risk-sharing institutions so that a single investor is not required to assume an excessive exposure to a particular investment. The absence of risk-sharing institutions is one of the most important constraints to technology upgrading in developing countries.

The first and often the most pressing market failure relates to the problems of financing upgrading in a context of risk. Upgrading investments are uncertain because it takes time to learn how to use new machines, set them up in the most effective way

and most importantly, achieve the optimal alignment and ratios of different machines, inventories and processing speeds to achieve the optimal throughput and therefore overall productivity for the factory.

The resolution of these problems depends on the nature of financing because experimentation with machine setups and ratios of machines in a production line is a costly exercise. Firms operating on small margins and without access to risk-sharing finance are unlikely to achieve the optimal production scale and machinery mix or experiment with different factory setups and therefore achieve optimal productivity on their overall operations.

In theory, these financing problems could theoretically be solved if there was an efficient market and private financing. An efficient market is defined as a market with low transaction costs. This means a market where contract enforcement is cheap and effective. In such a market finance could be easily raised for risky investments from many small investors, each of whom would be exposed to a relatively small risk. They would be willing to invest because their investment and potential returns would be assured through *watertight contracts*. But clearly, in a developing country, this process does not happen as fast as it should. This is because markets in developing countries are not as efficient as they need to be: contracts are difficult to enforce and transaction costs are high. This is shown in Figure 1 as the market failures preventing risk-sharing in the financing of technology acquisition.

Risk-sharing is different from the cost of financing. Efficient financial markets should evolve instruments for sharing risk between investors with different appetites for risk and return. However, if contracting failures and transaction costs prevent these institutional arrangements from evolving, the risk burden of upgrading may fall excessively on a particular class of investors. Unless these investors happen to have a high risk appetite, the result is a market failure which prevents high rates of investment. More importantly, this market failure slows down investment in *new* technologies where risks are higher but so are the potential returns.

A second area in which market failures emerge is in the training of workers and employees so that more sophisticated machines can be optimally used. It is very obvious in Bangladesh that the availability of training in many relatively good training institutes does not solve the problem because market failures prevent the available training being purchased. Here market failures are related to the fact that the social return to training is higher than the private return to the entrepreneur who is asked to pay for it, and the result is a low take-up of the available training. This is a problem in all countries, and specific policies are required to overcome this market failure. The important point is that ensuring the *take-up* of training is a separate problem (related to market failure) from the one of identifying skills shortages and making the appropriate training available.

A third market failure that is increasingly constraining manufacturing growth in developing countries is the failure in land markets which make it difficult to acquire land for new startups or for contiguous expansion. In theory, if land markets overall could be made more efficient through good governance reforms, this problem would disappear. In reality, developing countries cannot feasibly improve the efficiency of land markets fast enough and specific steps are required to address market failures

affecting land acquisition in high growth sectors. While there is widespread recognition of this problem in Bangladesh, with discussions of industrial parks and garment villages, little progress is made because the institutional and governance capabilities to implement these strategies are absent.

These areas of concern identified by economic theory were tested in our survey where we engaged in detailed discussions with a number of players in the garment industry, both producers of different products, firms of different sizes and technologies as well as a number of banks engaged in financing investments in the industry. Our methodology relied on structured discussions to explore the processes through which financing, training and land acquisition took place in a variety of firms. The survey revealed that while there were clearly many problems facing the industry, the market failures we identify are indeed serious and pervasive. Focusing on a number of very specific and targeted instruments and governance capabilities that could address at least some of these market failures would very likely yield significant benefits.

These market failures are of course well recognized in Bangladesh and elsewhere. However, the dominant policy response to these market failures in contemporary discussions revolves around attempts to make markets in general more efficient through ‘good governance’ reforms. Closely related to this is the strategy of improving the investment climate (for instance Bangladesh Enterprise Institute and World Bank 2003). The theory is that market efficiency can be increased by improving the protection of property rights and improving the enforcement of contracts through the rule of law. The protection of property rights and the rule of law in turn require the absence of corruption, since corruption subverts property rights and the rule of law. Anti-corruption strategies are in turn embedded by improving the accountability of government and deepening democracy.

Many of these good governance reforms are desirable for their own sake and the achievement of these should be long-term goals for developing countries. But if these reforms also succeed in reducing transaction costs in markets, for instance by making contract enforcement much easier and information much more symmetric, the effect would indeed be to accelerate technology upgrading in the ways economic theory predicts.

Unfortunately, all the cross-country evidence suggests that it takes a very long time to achieve improvements in the areas that good governance reforms focus on (property right stability, contract enforcement across the board, rule of law, corruption, accountability of governments). This also applies to the areas where investment climate reforms focus (good governance plus infrastructure improvements and liberalization of regulatory structures) (Khan 2004, 2005, 2006; Meisel and Aoudia 2008).

If growth and productivity improvement have to be achieved *now* we cannot wait till after the good governance and investment climate reforms finally succeed in making a significant impact on market efficiency. Indeed, since improving governance and the quality of infrastructure requires public finances, we could argue that these are not going to improve in a sustainable way unless immediate steps to accelerate output and productivity are successful. *A realistic approach for achieving medium-term improvements in technology and investment should focus on governance capacities*

and infrastructure required for solving immediate constraints that are preventing improvements in productivity or stopping moves up the value-chain.

In designing these instruments we have to also learn from the failures of the ambitious strategies of intervention through which market failures in developing countries were addressed in the 1960s and 1970s. Large-scale and often indiscriminate subsidies to infant industries, protection and licensing did not produce the desired results and should not be repeated. Feasible strategies of dealing with market failures and assisting technological upgrading in Bangladesh and other developing countries which have had a poor experience with ambitious strategies should focus on a relatively small number of high quality and enforceable instruments and agencies. Business associations in the sector and government should be able to jointly monitor these limited instruments to ensure that the desired results are achieved.

The most appropriate instruments and governance capabilities that could be developed will depend not only on the relevant market failures, but also on the initial conditions in terms of existing instruments and governance capabilities. Initial conditions are important because it is always easier to build on what exists rather than building instruments and capabilities from scratch. Equally, if some policy responses require a quality of monitoring and enforcement that is unlikely to be achieved in a specific sector, then that is a reason for proceeding with caution or not at all in that particular direction.

To initiate a discussion on the directions in which policy instruments may be developed, we discuss the types of market failures that technological upgrading faces in the Bangladeshi garment sector, the instruments that may be appropriate to address some of these failures and the directions in which governance capabilities need to be developed if these instruments are to be effective.

In the next section we explore the market failures that were outlined earlier. We then describe our survey and the results derived from that exercise. Finally we bring these insights together to look at how instruments and governance capabilities could be developed in Bangladesh to address these market failures. Whenever relevant we identify existing instruments and capacities that could be built on, and which we hope the subsequent policy discussion in Bangladesh will indeed build on.

MARKET FAILURES IN TECHNOLOGY UPGRADING

If an economic activity is potentially beneficial or profitable but is not undertaken, there is usually some 'market failure' which explains the failure by society to capture the potential additional wages and profits. Market failures refer to all types of institutional and contracting problems that prevent transactions of production or exchange. Transactions will only take place when all parties are confident that they will be able to capture the benefit that exists in theory. If any party feels that they may be unable to capture these potential benefits, there is a potential market failure that may prevent the transaction from happening at all.

i) Market failures in Financing and Sharing Risk in Technology Upgrading Investments

Financing investment is subject to market failure because the providers of finance are typically not in direct control of the firm. Nevertheless, their return depends on the effort of those in direct control of the firm. If external financiers are not sure that they can capture a fair return, they may either not lend, or lend at a high price, or on conditions that shift all the risk to the owners of the firm who may then in turn be unwilling to invest.

When investments are being undertaken in new areas where new competences have to be developed, the payback period is subject to higher levels of uncertainty, and there is a greater chance that some or all of the money may occasionally be lost despite the efforts of the entrepreneur. If there are no risk-sharing institutions, a single investor, typically the owner-entrepreneur controlling the firm, has to absorb all the risk, for instance by the owner pledging personal collateral to get a loan that finances the investment.

In these circumstances, the owner-entrepreneur will hesitate to invest in these risky upgrading projects because even if they put in their full effort, there is a chance of failure that an individual would not like to confront. The loss may amount to a significant part of the owner's portfolio, and the risk of loss would typically be too big for most individuals. Thus, risky investments are much more likely to be undertaken if a number of investors agree to share the risk of the investment, with the promise of a higher return for external investors if the investment is successful.

In theory, if both risk and return could be shared with outside investors (either in the form of shareholdings or partnership), this would allow more investments to take place in new and more risky areas. The risk would be shared, reducing the exposure of any individual investor. The precise formula for sharing risk and return can be expected to vary from case to case depending on the appetites for risk of different classes of investors and the riskiness of the investment.

The problem is that outside shareholders will only agree to a risk and reward sharing agreement if they are confident that they will actually get an agreed-upon share of future profits. In particular, they have to be assured of disclosure so that insiders cannot hide profits while declaring losses.

Accurate disclosure is very hard to ensure even in advanced countries, and even reasonable disclosure is often not credible in most developing countries. Not

surprisingly, venture capitalist type financing of risky ventures is much less in evidence in developing countries. Where stock markets exist in developing countries, traded firms are likely to be very large companies with an already strong reputation for profitability rather than newcomers raising money for investment in new technologies (Shleifer and Vishny 1997).

The difficulties of disclosure and enforcement also explain why most firms in developing countries are relatively small and family owned, and the ones with the least internal conflicts are the ones where one individual controls and owns most of the firm. Thus, adequate disclosure appears often to be difficult to enforce even within the family or a small group of partners in developing countries.

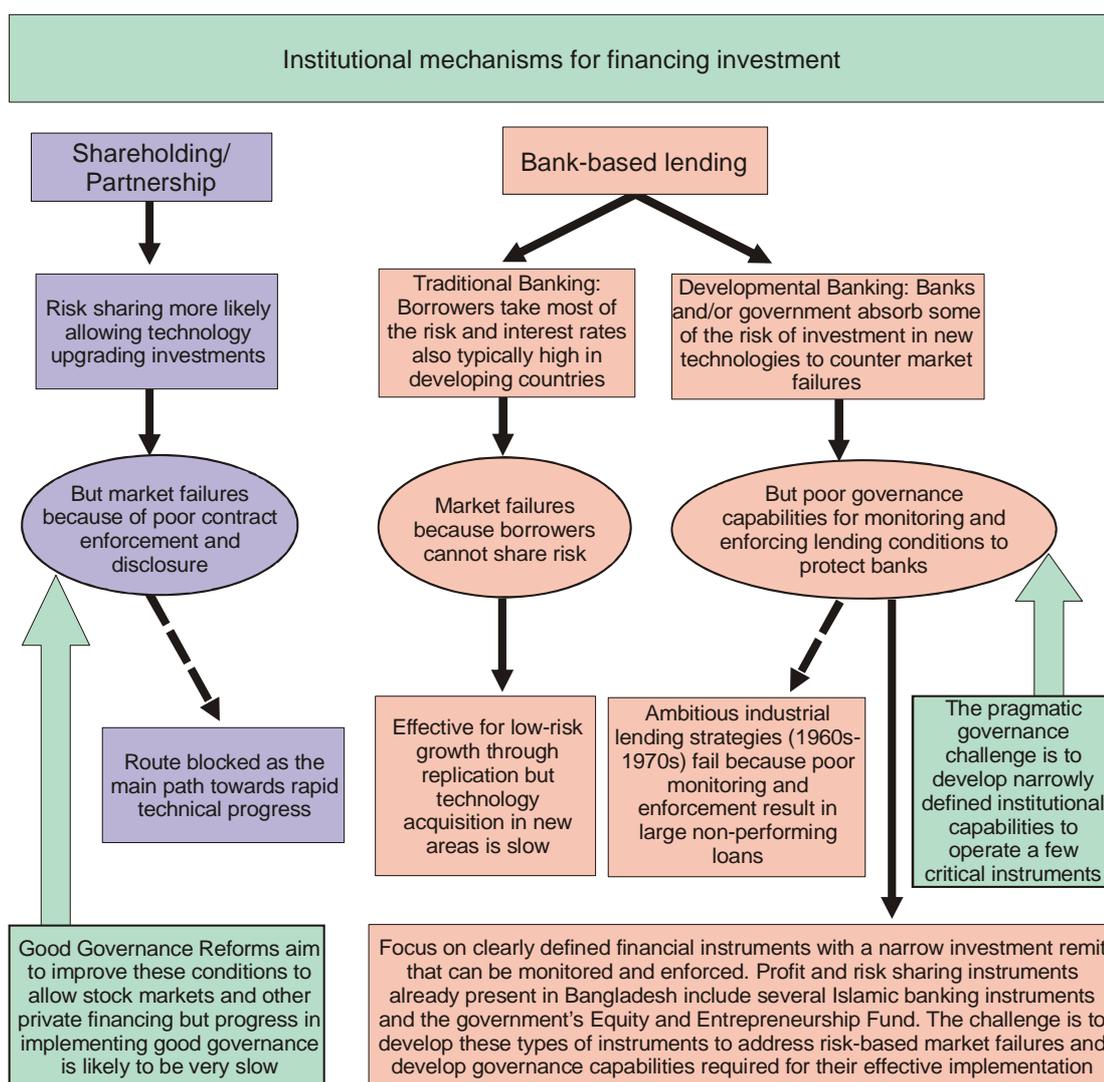


Figure 2 Market failures in risk-sharing and financing of technology acquisition

These realities are unlikely to change very rapidly, though we can expect a gradual development of corporate structures over a period of decades. However, effective corporate governance requires an effective public enforcement of regulatory rules such as rules of disclosure and the enforcement of the rights of outside investors (such as shareholders or financial partners). But these enforcement capacities and regulatory structures are expensive to attain and enforce and difficult to fine tune.

Advanced countries have reached their current situation through a very gradual process of development of regulatory capacities and the fine tuning of their corporate governance structures continues all the time. The realistic assessment must be that developing countries like Bangladesh have a long way to go before their regulatory structures and the general rule of law will be sufficiently strong to allow significant financing of technological upgrading by venture capitalists, shareholders or outside financial partners.

We should also remember that even in advanced countries bank finance and internal financing from reinvested profits remain important sources of financing for firms. In developing countries the relatively small size of firms and the low productivity of emerging manufacturing means that profits cannot be a significant source of finance for technology upgrading in most firms. The immediate problem is therefore to take these structural features as given realities for the moment and see if feasible and pragmatic financial instruments can be devised that will allow more rapid technological upgrading.

Because of the problems of organizing profit sharing arrangements in developing countries (whether through partners or shareholders), banks have historically played a much more important role in financing development in these contexts. However, bank lending is itself likely to face market failures. First, banks too face problems of poor disclosure and recovery, and this often leads to excessively high rates of interest as banks try to compensate for a higher percentage of bad loans by raising the average interest rate. However, this can be a potentially self-defeating exercise because high interest rates can begin to attract only those borrowers who are least likely to repay because they have excessively ambitious business plans (Stiglitz and Weiss 1981).

A second problem is that banks also try to protect themselves as much as possible by requiring high quality collateral from borrowers. This effectively passes most if not all of the risk of the investment to the owner-entrepreneur borrowing from the bank. This can clearly discourage investments in new sectors and technologies because the typical borrowers in a developing country are relatively small investors who would risk the loss of too large a part of their individual portfolio if a particular upgrading investment failed to pay off. Thus collateral backed loans can have a dampening effect on investments in new technologies unless policies exist to ensure that investments in new technologies are not discouraged (Hellman, et al. 1997).

It follows that traditional lending based on borrowers putting up collateral and paying a predetermined return will generally be most effective for financing short-term financial requirements of firms and the replication of known technologies that have relatively low risk. Firms will be more reluctant to take up loans for investing in newer and riskier technologies since entrepreneurs are unable to assess in advance how long it may take them to generate a positive return on the new investment. *With a fixed interest loan, a small miscalculation of the period it will take to achieve international competitiveness can make a project unviable through the accumulation of interest, leading to a potential default and the threat of a possible loss of collateral.*

It is not that risky investments do not happen with bank loans. They do, but they are less common and depend on risk-taking entrepreneurs coming forward. Clearly,

entrepreneurs who are sole proprietors will only take loans for technology upgrading if *they* are sure that the technology can pay off in a relatively short period. This explains the widespread observation that traditional bank lending can support a rapid horizontal expansion based on the replication of known technologies but is relatively slow to support vertical moves into unknown technologies which can take an unknown length of time to master and where progress is likely to be slow.

These problems with bank-based industrialization in developing countries are well known and historically states have tried to overcome these market failures with policy interventions to reduce the risk for investors whose only source of financing was a bank. For instance, developing country states often have specific policies that create incentives for banks to lend long-term for technical upgrading while reducing the interest rate and therefore the risk for investors engaged in technology upgrading (Hellman, et al. 1997). But if effective subsidies are being offered, developmental banking of this type also requires backing from the state to enforce the repayment of loans after all efforts to improve the viability of a project have failed.

As Figure 2 summarizes, when states without effective governance capabilities attempted to engage in long-term developmental banking, the results were often poor. Indeed, Bangladesh still has a problem with non-performing loans in its public sector banks which are mainly the result of badly managed long-term lending to industry in the past. The challenge is clearly to address the market failures that constrain effective long-term lending and risk sharing without repeating these mistakes of providing indiscriminate subsidies without any monitoring capacity or the capacity to withdraw capital from non-performers.

Financial instruments targeted to technology upgrading in these contexts have to be designed by taking into account the governance capabilities of the institutions monitoring and enforcing the conditions attached to these instruments. To overcome the market failure here, the instrument has to address two problems. On the one hand lenders have to be protected in a context of poor contract enforcement. On the other hand, financing has to be available for borrowers that does not cost too much, and does not put all the risk on the borrower (for instance through excessive collateral coverage of the loan). The optimal institutional arrangement in these contexts would be a lending regime where banks as lenders have policy incentives to engage in a small amount of long-term lending for technology upgrading.

Government policy is important here because lending for technology upgrading is very sensitive to interest rates and the implicit sharing of risks between the owners of the firm and others. Interest rates have to be low enough to induce borrowers to borrow for projects whose payback period is uncertain and there have to be institutional mechanisms of sharing the risk of delays so that the borrower is not wiped out if there are unforeseen delays in an otherwise sound project.

This does not mean that the external financier has to take on all the risk. Indeed, some exposure of the owner-entrepreneur borrowing the money, through collateral or otherwise is desirable because it can help to induce a high level of effort on the part of the entrepreneur. But the entrepreneur's exposure should not be so high that if the project fails despite the best efforts of the entrepreneur the consequences are unacceptably severe. This is because the entrepreneur is very likely to refuse to accept

such a high level of risk and this is a cost for society because potentially important investments will not be undertaken. Another way of putting it is that for critical upgrading investments, it is in society's interest to share some of the risk with the investor.

Clearly for these categories of loans, there is a potential market failure if we rely solely on traditional banking. However, if special risk-sharing instruments are devised that allow potential investors to access finance at a lower price and risk for specific types of new investments, banks and/or the government have to engage in effective monitoring of these projects. In particular, support from the state has to be forthcoming to assist with capital withdrawal in cases of failure.

The poor design of financing instruments and weak governance capabilities have made industrial development loans perform poorly in the past in many developing countries. But for developing countries like Bangladesh that have achieved a threshold level of manufacturing capability through traditional bank lending, a clear policy priority is to develop strong capabilities for managing a narrow range of financial instruments that would allow a faster rate of upgrading investments to take place in the future.

ii) Market failures in training and upskilling

One of the paradoxes observed in the labour market in many developing countries is that in a context of overall labour surplus there are often serious labour shortages in growth sectors. These are ultimately due to skill shortages at all levels of the skills profile. The second paradox is that in some of these developing countries (and Bangladesh is rapidly joining this group) the problem of skill shortages persists even if training institutes emerge. These observations are of course not really paradoxes because the market in training is subject to severe market failures, and this prevents the take-up of available training in the absence of specific policies to address these market failures.

Two types of market failures are particularly relevant here. First, entrepreneurs who train labour in new technologies and products face a market failure because if they succeed in creating new profitable opportunities, other entrepreneurs will emulate them, and they will bid away the skilled labour in the initial firms with offers of slightly higher wages which are feasible for them because they have not invested in their training. This can lead to a dampening of investment in training, particularly in new skills and in the learning of new technologies. This market failure leads to entrepreneurs preferring to wait for other entrepreneurs to identify new profitable technologies and then copying them, rather than incurring the costs and risks of being the first mover.

A second market failure affecting training and skill acquisition is the market failure in financing risk that we have already seen. This too affects the financing of training because entrepreneurs are often justifiably reluctant to borrow at high interest rates and with collateral commitments to engage in risky training exercises where the period of repayment cannot be predicted in advance for new technologies. The result of these market failures in the market for labour training means that the take-up of training can be limited even when relatively high quality training is available at competitive prices. Firms will prefer to undertake in-house on-the-job training, and

finance this with lower wages for the workers undertaking the training. This strategy may be appropriate for very basic training programmes, but it has its limitations when the training required is for new processes, machines or products, which by definition are not yet in operation in the firm.

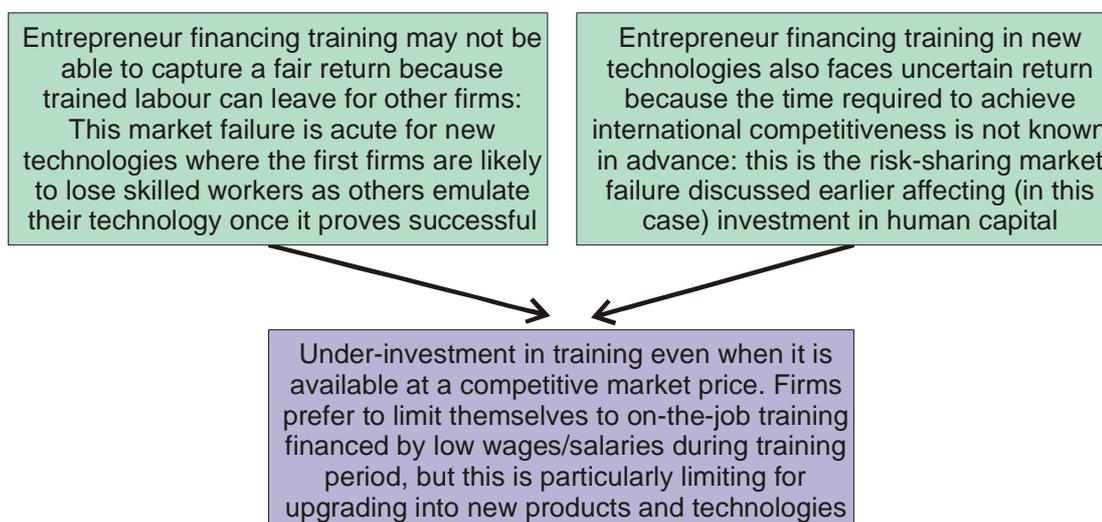


Figure 3 Market failures in labour training and upskilling

The appropriate policy responses here are very similar to the ones appropriate for dealing with absent risk-sharing institutions. Carefully targeted subsidies (for privately provided training programmes) or subsidized training schemes (for government programmes) could assist the take-up of training. But as with the responses for sharing risk, strong governance capabilities are required in these clearly defined areas to ensure that the quality of training is monitored and accredited, that poor training providers or unscrupulous employers do not capture the subsidies without providing the training.

Indiscriminate subsidies can do more harm than good by creating distorted incentives for training in inappropriate skills. It is also important to conserve limited public resources by only targeting training in sectors that are subject to market failures. Training in established technologies where the market failures we have been discussing do not apply typically does not need any training subsidies.

iii) Market failures in Land Markets

Land markets in developing countries are characterized by a number of significant market failures. Landholdings in many developing countries are typically very small, they typically do not have clearly defined title and in many cases, title is disputed between multiple claimants, each of whom may have some documentation supporting their claims.

As a result, land purchases are a prolonged and costly exercise, and in some cases, it may prove impossible for entrepreneurs who want to expand their scale of operation to purchase contiguous plots of land near infrastructural amenities. This is sometimes because no free land is available, but is more often because the transaction costs of purchasing the available land are too high. As a result of these types of problems, many manufacturing operations in countries like Bangladesh are in unauthorized

locations where their future is uncertain, and where they face serious constraints on further expansion.

As Figure 4 summarize, these market failures are widely recognized and as a result developing countries have historically attempted to make land available for industry through government policy interventions. However, industrial zones are often designated far away from infrastructural amenities, and governance capacities for providing land to emerging industries are often poor regardless of legal provisions. In contrast to the actual performance of government policies, addressing these market failures requires the provision of land for designated economic purposes, which is relatively well-connected to critical infrastructural amenities and transport networks.

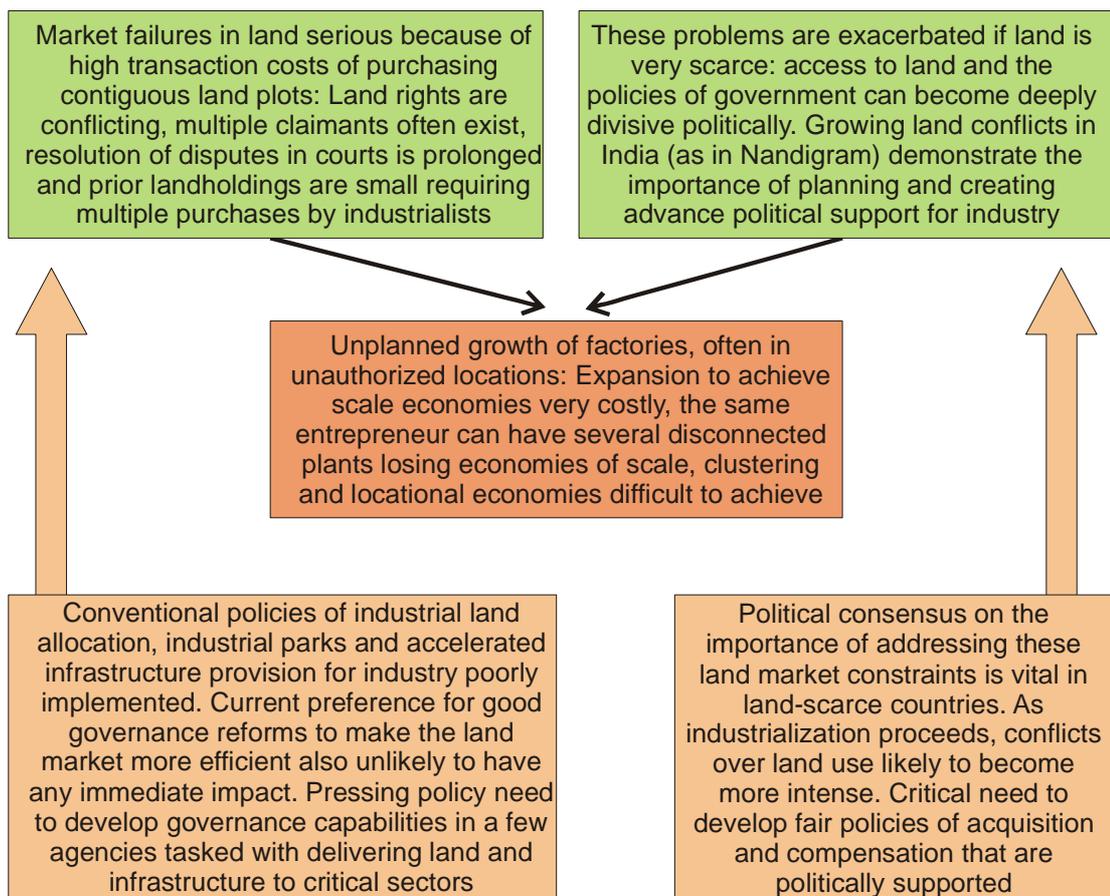


Figure 4 Market failures in the land market

The failure of land policies for industrialization can in turn prevent the development of scale economies and clustering advantages. At the same time, the non-availability of land for industrial development close to good infrastructural amenities often leads to unplanned and illegal developments within urban centres. The problem is that effective land policies are very difficult to implement. In practice, strategies of constructing industrial zones often result in inaction, with policy announcements that are not followed up, or in the construction of industrial zones that are so far away from industrial hubs and infrastructure that the take-up of the available land is very slow. The worst outcome is the mismanagement of the land acquisition and allocation process leading to violence, deaths and a general setback to land management for industrialization.

An example of the costs of mismanagement comes from neighbouring India whose recent experience shows that land scarcity is likely to become an important constraint on industrial expansion. Bangladesh is in many respects of land use similar to West Bengal which has recently faced serious conflicts as a result of the mishandling of land acquisition and allocation. This is particularly instructive because the party responsible for the mishandling was the politically rooted and adroit CPM. The Nandigram and Singur crises in West Bengal over 2006 and 2007 were the result of poor strategies and governance capabilities for handling conflicts over land acquisition. Attempts by the state government to acquire land through compulsory purchase orders resulted in organized political opposition leading to violence in which a number of people were killed. The land acquisition questions that have been raised (but not yet answered) in West Bengal and a number of other Indian states are likely to soon surface in Bangladesh.

In the conventional governance approach the solution to these problems is to improve the land market as a whole by improving land records, the court system and fighting corruption, so that land market transactions can take place smoothly. Our general concern with the good governance approach is repeated here. By itself these strategies will not solve the problem faced by industry any time soon. In contrast, we require incremental growth-promoting governance capabilities on the part of the state to identify specific land bottlenecks and develop moderately efficient agencies to address land use problems on a case-by-case basis.

The urgent policy priority must therefore be to address the governance weaknesses that have prevented the implementation of land management policies. A feasible way to proceed would be to focus on a much more limited set of land management issues, in particular by focusing on national priorities for manufacturing growth. For instance, one approach would be to focus on the administrative and political capacities required to set up industrial parks for priority industries, and to prioritize infrastructure to these critical industrial zones.

THE SURVEY AND STAKEHOLDER CONSULTATION

The market failures identified above were based on a reading of the international experience with technology upgrading in developing countries. To examine the extent to which these problems affected different segments of the Bangladeshi garment industry and the mechanisms through which these market failures operated we carried out in-depth interviews with a sample of firms, banks, training institutes and donor agencies associated with technology acquisition.

The aim of these interviews was not to collect numerical data but rather to understand processes, and so it was important for us to include different types of firm by size, technology, employee and capital base, and to include firms in different segments of the garment business such as those engaged in wovens, in knitwear, in the production of accessories and other linkages including dyeing, weaving and other significant backward and forward linkages. It was also important for us to understand the constraints faced by financiers, in particular banks in financing technology upgrading. We also wanted to incorporate the experiences of agencies involved in trying to promote technology upgrading, including in particular government agencies, donor agencies, and private training agencies.

We included representatives of each of these types of stakeholders in our sample. We did not need to achieve a representative sample proportion of each type of firm and technology as this was not important for understanding processes. This was perhaps fortunate because accurate figures on the distribution of different firm sizes, technologies and products in the rapidly evolving industry were not available. Nevertheless, to ensure that we had looked at all important sub-sectors and technologies, we consulted available surveys on the emerging structure of the garment industry in Bangladesh (Kee 2005; World Bank 2005; PPMA 2006; CPD 2007).

We selected our interviewees to cover different sizes and technologies of domestic firms, including those that had foreign partnerships, but we excluded firms that were primarily set up through foreign direct investment (FDI). The last group of firms constitute a very small part of the total and were outside our remit because they are subject to different financing arrangements and have access to a different set of managerial and entrepreneurial skills.

According to Kee's (2005) survey, less than 15% of Bangladeshi garment firms have foreign equity, and the number where foreign equity is dominant are even fewer. Not surprisingly, Kee finds that productivity in foreign firms in the Bangladeshi garment sector is on average 20% higher than in domestic firms. Kee suggests that a possible explanation for the productivity difference is the access of foreign firms to superior management and technical know-how. FDI financed firms by definition have access to a specific type of financing and typically operate on a larger scale that is likely to be closer to the minimum efficient scale of operation. While these firms are also likely to face market failures, they are likely to be different from the ones affecting domestic firms that are reliant on domestic financing and skill acquisition strategies and have to rely entirely on the local land market for acquiring land for expansion.

FDI firms have alternative sources of financing that allow them to overcome the first two constraints to a greater extent than domestic firms, and they also suffer from land

acquisition problems to a lesser extent because they are located in export processing zones (EPZs) where land acquisition and infrastructure problems are much less severe than elsewhere. For these reasons, we excluded the small group of FDI based firms from our survey. However, Kee's observations regarding the statistically superior productivity of FDI firms are consistent with our hypothesis that domestic firms suffer from (more) serious market failures in financing the purchase of machines, financing and organizing labour upskilling and in land acquisition that could together explain their lower productivity and competitiveness.

The lost opportunities for the domestic sector are probably much greater than the 20% productivity differential with FDI-based firms observed by Kee. This is because market failures may not only be preventing domestic firms from achieving the full potential of their existing technologies as implemented by foreign firms, they may also be slowing down moves into higher valued products and processes that are higher up the value chain.

Our survey was based on in-depth interviews with industry participants around a set of questions exploring how the three market failures described above affected their businesses, the ways in which they had responded to these constraints, and their assessment of alternative policy solutions that may address these market failures in the future. As these market failures affected different firms and types of firms in different ways, we engaged in open-ended discussions with each interviewee and eventually focused on the market failures that were perceived by each to be most relevant for their business.

This approach allowed us to develop at length the issues that most affected a particular respondent but it also precluded the use of a standard predetermined questionnaire for all firms. We believe the qualitative approach followed in this research yielded more useful information than might have been generated by a standardized questionnaire sent to a larger number of firms.

The survey consisted of in-depth interviews with the owners of 36 plants operating in different segments of the industry, and with key personnel in two commercial banks with significant exposure to the industry, the Bangladesh Bank, two donor organizations involved in technology upgrading in Bangladeshi manufacturing, and a private sector training organization involved in providing fee-based training to the garment industry. When required, the initial interviews were followed by further discussions and visits to the plants involved. The interviewees are listed in an Appendix to this document.

We found significant common elements in the experiences of different firms and sub-sectors, but with obvious differences in the types of problems that affected different firms depending on their size and the types of technologies they used. These initial interviews were processed and a number of broad conclusions emerged that were then further discussed in a stakeholder conference where interviewees and other stakeholders made further comments on the initial report.

One of the unexpected findings of our survey that was interesting in itself was the initial responses of entrepreneurs, bankers and others to questions about constraints facing them. These initial responses were most likely to replicate the conventional

good governance wisdom to which most of our respondents had been extensively exposed. In other words, many respondents immediately identified the importance of good governance reforms and general issues of infrastructure, power constraints, delays at ports and cumbersome regulations as the most critical constraints for technology upgrading. This is because of the dominance of the good governance programme in Bangladesh and the diverse constituencies which support it, together with widespread publicity for the investment climate approach (Bangladesh Enterprise Institute and World Bank 2003).

The infrastructural constraints are indeed serious and urgent steps need to be taken to address these. These infrastructural constraints are well known and do not require another study to identify or highlight them. When the industry was small, infrastructural constraints did not stop the garment sector in Bangladesh growing at a rapid rate in the past. The volume that it has now reached has begun to seriously strain the infrastructure and it desperately requires improvements in power supply, transport networks and ports to enable the momentum to keep going.

However, from the perspective of this study, it is not at all clear how or why overcoming the infrastructural constraints, important as they are, will not simply allow the volume of low value-added exports to expand further, as opposed to helping technology upgrading into higher value products or help firms to achieve international standards of productivity using their existing technologies.

In contrast, the good governance agenda as applied to the technology upgrading discussion is seriously misleading for the reasons discussed earlier and summarized in Figure 1. The mechanisms through which good governance is being attempted are not likely to deliver quick results in developing countries. Moreover, the impact of the limited improvements that are likely on market efficiency is in turn unlikely to make any significant impact on the market failures we are discussing.

When our survey participants were confronted with likely mechanisms through which good governance reforms were likely to solve their problems (for instance through making stock markets more efficient and allowing them to raise funds from the stock market) they universally agreed that these conventional mechanisms were implausible even in the medium term. This makes the search for feasible governance reforms that can make an impact on economic performance and technology upgrading very urgent.

In the subsequent sections we describe the main results of our survey and possible policy responses to the problems identified in the three categories of constraints that constitute the focus of this study: financing investment and technology upgrading, skills and training, and land market failures. In summarizing our findings we have for obvious reasons not attributed particular positions or opinions to individual respondents.

FINANCING INVESTMENT AND TECHNOLOGY UPGRADING

The main survey findings and policy proposals are summarized in Figure 5. Many of the findings strongly support the importance of the theoretical concerns summarized in Figure 2.

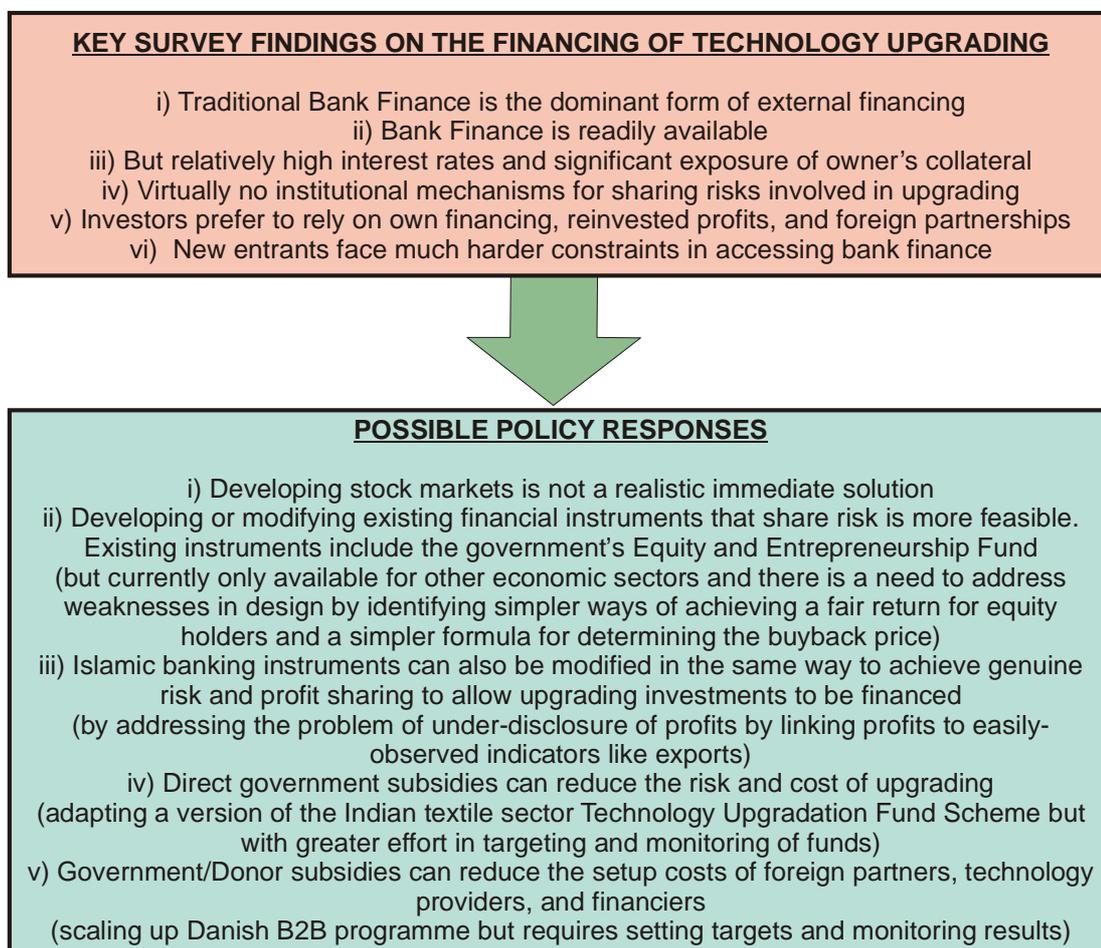


Figure 5 Survey Findings and Policy Proposals for Financing Upgrading

Traditional Bank Lending is the dominant form of external financing

The only significant form of external financing reported by our respondents was bank financing. This was not at all surprising because disclosure is difficult to enforce and the rights of outside investors are difficult to protect in a developing economy. As a result we expect stock markets to be underdeveloped and partnerships difficult to operate. None of our firms had raised funds in the stock market and a number reported serious difficulties with partnership arrangements.

The bulk of external financing came from the commercial banks, though there were a small number of cases of external financing from foreign partners, which we will discuss later. One of our surveyed entrepreneurs reminded us that a number of banks had played a pioneering role in the early history of the industry, sometimes lending with little or no collateral cover. Two of the banks frequently named in these discussions as critical players in the development of the industry were included in our survey. Despite the important role banks played as pioneers in the industry and their continued dominance as outside investors, other aspects of the responses of our

respondents suggest that the lending instruments currently available to banks are not sufficient for addressing the major financing challenges faced by the industry.

Bank Finance is readily available in the sector

The problem is not the absolute availability of finance. Our survey revealed that bank finance is readily available for established technologies and entrepreneurs (when both sides are confident that the loan can be repaid over a short period). This observation was consistent with the observation of rapid growth in the ready-made garments sector which has been heavily reliant on bank lending.

This suggests that in an absolute sense, there is no scarcity of investment funds in Bangladesh, particularly for investors in growth sectors like the ready-made garments industry. This was confirmed both by the banks and firms that we surveyed. If anything, at the time of our survey, banks wanted to lend more and lending appeared to be constrained by the risk aversion of borrowers. Borrowers corroborated this.

Relatively high interest rates and significant exposure of owner's collateral

While there was no absolute shortage of funds, a common concern amongst borrowers was the generally high levels of interest rates even for loans backed by good collateral. Most firms reported interest rates in a range between 16-18% for relatively safe loans backed by good collateral, and for entrepreneurs with a strong track record. A common formula would be a loan covered to the extent of 30-40% by owner's collateral and the rest by machinery and order books. Even if such a project failed, the exposure of the bank was effectively negligible.

High interest rates were attributed by banks to the implicitly high risk premium on these loans. As the risk premium cannot be objectively measured and is dependent on market conditions, we can take this as given for the time being. The only way to test if the risk premium is excessive would be through competition and the entry of new banks into the sector.

Virtually no institutional mechanisms for sharing risks involved in upgrading

This was our *most critical survey finding*, which corroborates theoretical expectations and the cross-country evidence from LDCs. Even more important than the relatively high level of the interest rate is the absence of financing instruments that enable any significant sharing of risk for firms engaged in risky technology upgrading projects. Bank loans are the main form of external financing in the sector.

A bank loan imposes a fixed periodic interest liability on the borrower that has to be covered regardless of the profitability achieved by the firm. This effectively shifts the risk of delays and problems in implementation of new technologies on to the borrower. Clearly, as some firms pointed out, banks do sometimes act on an ad hoc basis to mitigate the risks faced by firms. For instance, banks can show flexibility in negotiating collateral requirements and in rescheduling debts. But understandably, they are only likely to be flexible with a few firms and entrepreneurs they know and trust. There was clearly an absence of institutionalized instruments that allow a sharing of risk in ways that could accelerate technology acquisition.

The problem is that this financing instrument therefore implicitly limits the types of technologies that firms are likely to be willing to adopt. To seek external finance in the form of a bank loan, the borrowing firm has to have a fairly confident forecast of *how long it will take for the investment to become profitable*. This will depend on how long it takes the firm to learn to use new technologies, develop new markets or adapt its factory setup to achieve the greatest efficiency and price competitiveness.

The more unfamiliar the new technology is, the more difficult it is for the firm to predict its learning period accurately. In contrast, it is easier to predict the learning time if the technology being acquired is known to the borrower, or is similar to technologies already being used. The firm can then relatively confidently calculate its prospective net profitability over the life of the loan and decide to accept or reject a loan offer.

The critical problem for technology upgrading is that this technology is by definition likely to be new to the firm. It can then only make a rough calculation of the implementation and learning period required to make the investment generate a net cash flow that is positive. A relatively small misjudgement of the period of learning by the firm could turn a potentially profitable investment into a potential disaster. Hitches in the process of learning and adaptation could easily delay the adoption of a technology and delay the generation of profits. The rolling over of interest payments during this period could then easily make the debt burden unmanageable.

It is not often appreciated that learning to use new technologies and adapting them to local conditions is just as risky and uncertain an exercise as innovation in advanced countries. Just as few innovators in advanced countries would take an interest-bearing bank loan to finance a process of innovation whose period of payback cannot be foretold, we should expect few investors in new technologies in developing countries will be willing to take a fixed interest loan to finance an equivalent process of innovation through learning and adaptation.

The responses of our interviewees confirm the theoretical expectation about traditional bank lending summarized in Figure 2. Traditional bank lending in Bangladesh did allow (and will allow in the future) the rapid expansion of productive capacity as long as the risks are low enough for the borrower to accept this risk. But where the risk (in the sense of uncertainty about the period of learning) is significant, firms will be unwilling to borrow if they are expected to absorb this risk in its entirety.

The risk sharing problem is exacerbated because most firms in the garment industry in Bangladesh are relatively small family firms with a dominant owner-manager. This means that risk usually cannot be shared within the firm by multiple stakeholders in the form of shareholders or partners. Effectively a single individual is typically accepting the risk single-handedly. Despite differences in their ownership forms, virtually all the firms in our sample had a clearly identifiable dominant owner who was typically also engaged in a dominant position in management. Given what we have said earlier about the enforcement of the rights of minority shareholders and partners, this was not a surprising finding.

Investors prefer to rely on own financing, reinvested profits, and occasionally foreign partnerships for financing risky investments

While bank loans remain important for many firms, our discussions with entrepreneurs also brought out a parallel reality. Investments in more risky expansion projects, in scaling up, and particularly in new technologies, products and processes was slowed down because of the absence of risk sharing instruments. Under these circumstances, we found several different patterns of financing for technology upgrading in our surveyed firms.

For firms that relied primarily on bank loans for their continued expansion, the expansion and technology upgrading was most likely to happen in an incremental way. Firms were likely to adopt technologies closely related to ones they were familiar with. Here, although firms were exposed to risk, their exposure was reduced by focusing on incremental technology acquisition and sticking with technologies they were already familiar with. This is what we would expect because this strategy would at least reduce the chances of miscalculating the period of adoption that could result in an unserviceable debt burden.

However, even when the risk of failure was low, there was always some uncertainty about how long the adoption and adaptation of the new technology would take, even with incremental technology upgrading. With high interest rates and significant owner collateral tied up, for many borrowers, bank borrowing appeared to them to leverage their risk upwards. An unexpected delay could happen even with known and safe technologies, and a relatively small delay could make projects unsustainable because of rolled up interest. Thus, even for safe technologies, most of our respondent firms preferred to use internal financing such as owner's capital or retained profits. Some firms expressed a strong antipathy to any form of bank-based financing for expansion *even using known technologies* on the grounds that the high interest rates and collateral made the risk-return ratio for the firm unacceptable.

Three of the most ambitious technology upgrading firms in our sample were investing with non-bank finance that they had access to. In two cases it was a combination of owner capital and reinvested profits. These (and other) entrepreneurs pointed out that they would *not* take the risk of moving into significant new technologies using fixed interest loans.

Another method of financing significant investments in new technologies was through *foreign* partnerships. This was particularly interesting because a number of respondents reported serious difficulties with *local* partnerships. Partnerships with local financiers typically did not survive. Surviving partnerships in our surveyed firms were those where partners were members of an extended family with a dominant partner effectively operating as the owner-manager. However, we found examples of partnerships with foreign partners both for major investment and upgrading programmes, in one case assisted by the Danish B2B programme (discussed later below) as well as for a relatively small firm, where the tie-up with a foreign financial partner was based on a more accidental relationship. In both cases, the foreign partnership appeared to be working well for reasons very specific to the particular relationships and not related to the general disclosure and enforcement conditions in the economy.

The point is that all these forms of non-bank financing were based on special circumstances of the entrepreneurs concerned. These special circumstances could be their access to significant own resources, or access to a special relationship with a foreign partner. For the industry as a whole, the absence of a range of institutionalized risk-sharing financing instruments must surely be contributing to the slow pace of technology upgrading and the slow movement into new products and processes higher up the value chain.

In general, therefore, our survey confirmed the hypothesis that bank-based finance in the form in which it is available, while allowing rapid expansion in already existent technologies, did have important limitations for technology upgrading and risk sharing. This is consistent with the limitations of the traditional banking route identified in Figure 2. Borrowers with a strong track record were engaging in bank borrowing but would only borrow if they were confident the technology would enable profitable production within a relatively short period, usually 6 to 18 months. Most borrowers we surveyed would only consider loans that could be repaid within two to three years.

New entrants face much harder constraints in accessing bank finance

While established firms and entrepreneurs felt that bank financing was too expensive and transferred most of the risk to them, new entrants found it difficult to access bank loans under any conditions. In many cases, even a long exposure to business in the sector as managers or in other capacities did not necessarily make potential entrants bankable. Apart from the usual collateral requirements, banks also wanted an entrepreneurial track record, which by definition new entrants did not have.

This problem is closely related to banks wanting to reduce their exposure to risk. When the industry was in its infancy and banks were dealing with and promoting a handful of entrepreneurs, they were more likely to take risks with new entrants because the potential new entrants were personally known to the banks. This strategy is no longer adequate with a sector of its current size. While the risk aversion of banks is perfectly understandable from the perspective of banks, the implications for industrial expansion are also clear. Once again, the absence of risk sharing institutions is an important part of the problem.

An interesting result of our survey was that some of the biggest entrepreneurs in our sample had developed their entrepreneurial expertise in an earlier period when they had access to longer term and subsidized loans available from the industrial development banks. The industrial development banks had served as vital instruments for accelerating new entry and for developing entrepreneurial skills in a group of early industrialists who were later at the forefront of bigger investments. But their exposure to business had developed on the experience they had acquired through their initial enterprises. For these early entrepreneurs, the access to industrial development loans had provided opportunities for learning new technologies and business skills at relatively low risk.

These technical and entrepreneurial skills provided an essential base for their future expansion. For all the shortcomings of the developmental banking approach (discussed earlier) the development banks provided opportunities for risk sharing that had accelerated new entry and the development of entrepreneurial skills at a time

when these were in short supply. The absence of industrial development banks in the contemporary financing landscape is a critical difference from the earlier period. Risk sharing institutions can clearly assist both the acceleration of technology acquisition by already existing entrepreneurs as well as assisting the creation of new entrepreneurs who can grow to become the big entrepreneurs of tomorrow.

POSSIBLE POLICY RESPONSES TO ADDRESS FINANCING MARKET FAILURES

Developing stock markets is not a realistic immediate solution

As Figure 2 summarizes, there are several distinct theoretical responses to the financing problem. The dominant contemporary strategy in developing countries is to try to make financial markets more efficient by enforcing good governance. In theory it is true that if the rule of law can be enforced, corruption reduced, and greater transparency in government ensured, the result will be that contract-enforcement will also improve. Thus, good governance can *in theory* assist the development of risk sharing institutions like stock markets which require credible and cheap contract enforcement to be effective.

The practical question is whether good governance reforms can be enforced quickly enough to have any effect on the pressing market failures facing developing countries. How much further would rule of law, anti-corruption, transparency and other good governance reforms have to proceed to make a significant impact on contract enforcement and disclosure sufficient to allow garment industry firms to raise money from efficient capital markets? When put in this way, all our respondents agreed that reliance on market-promoting good governance reforms would take far too long for them to raise the money they needed to ensure that Bangladesh's emerging garment and textile industry has a secure future.

This is not an argument against stock markets in general or the moves that are being taken to develop these markets in Bangladesh. The stock market in Bangladesh has been growing rapidly in terms of market capitalization. However, even in India where giant corporations do successfully raise money in the stock market, this is based largely on their established reputation as corporate giants rather than the transparency and regulatory strength of the Indian stock markets. The problem is that small and medium firms do not have the same reputational capital as some large firms may be able to develop. It will be a long time before small and medium sized Indian firms are able to raise funds for their expansion in Indian stock markets. That possibility is dependent on a much longer term process whereby contract enforcement and disclosure have improved to the extent that it becomes viable for investors to put their money into unknown startup firms. India is not close to that yet. The problem for Bangladesh is that many of its most entrepreneurial firms at the forefront of generating growth are medium-sized firms that would not benefit from marginal improvements in the stock market.

A pragmatic approach in this context would be to work with existing financial institutions, the government and the private sector to see if *existing* financial instruments and strategies (or institutions and strategies adapted from similar countries) can be implemented in a way that would allow technology upgrading to happen faster. This may require government, business associations and other bodies to

develop some very specific governance capabilities to enable the monitoring and enforcement of specific instruments or strategies.

Developing financing solutions for technology upgrading is likely to be challenging and pose difficulties. But these difficulties are likely to be a lot less serious if we focus on a few instruments and strategies. Moreover, it is more likely that we will be able to achieve some very specific governance capabilities required to make specific financing arrangements work in contrast to the very broad goals of good governance reforms that are actually much more difficult to implement to any significant effect. A few examples of the types of possible policy responses we are referring to are discussed below. These are indicative suggestions. *Any particular policy proposal can only be taken forward if industry associations, banks and government agree that these financing challenges are important for the industry and for the country and therefore that solutions have to be worked out.*

Developing risk sharing financial instruments: Building on the Equity and Entrepreneurship Fund Model

Many of the challenges involved in financing technology upgrading are widely recognized. Indeed, the government of Bangladesh has implicitly recognized many of these problems by setting up financial instruments to address the problem of risk sharing. An example of the latter is the Equity and Entrepreneurship Fund (EEF) set up in 2001.

Although not directed towards the garment and textile sector, the EEF was set up to address the types of market failures constraining the financing of investments in new technologies identified in Figure 2. The EEF was limited to a number of sectors identified as thrust sectors by the government (IT and agro-industries). However, apart from its limited remit, we found that that the instrument suffers from a number of simple design problems. If these issues could be addressed, this fund or a similar one could be developed to assist the financing of critical upgrading in the garment and textile sector in Bangladesh.

The objectives of the EEF are exactly the right ones. The government clearly recognized the difficulties of using bank lending to finance investment in *new* technologies. In the EEF instrument, the government buys up to a 49% equity stake in companies engaging in investments in *new* areas, relieving the entrepreneur of immediate and onerous interest payments. The entrepreneur can buy back the equity in 3 years at face value (implying a 3 year interest-free loan), or after 8 years at either face value or a vaguely defined break-up value to be determined from the balance sheet by accountants. Otherwise, the government has the option of eventually converting the equity into a loan, implying a significant long-term interest free loan till that point.

However, as an internal evaluation of the Equity and Entrepreneurship Fund by the Bangladesh Bank (2006) shows, there are a number of problems in the design of the financing instrument. The projects financed were poorly chosen, and there is no obvious reason why the IT and agro-industries should have been prioritized. As a vital sector in Bangladesh, with significant entrepreneurial expertise, there is a case for also allocating upgrading funds to the garments and textile sector, particularly to develop high value-adding backward and forward linkages.

A second problem with the existing Equity and Entrepreneurship Fund is that its proper operation depends on truthful revelation of profits and asset values by recipient firms. For this, the instrument requires that recipient firms should be monitored, but this monitoring is delegated to commercial banks providing conventional loans to the same firms. The Bangladesh Bank simply administers the fund for the Government of Bangladesh and has no independent monitoring arrangement for these investments. Commercial bank representatives sit in on the recipient firm's board meetings and monitor the investments for the Bangladesh Bank. But we know from the Bangladesh Bank's (2006) evaluation that the monitoring has not been intensively carried out. This was confirmed by one of the banks involved in our survey which was involved in monitoring Equity and Entrepreneurship Fund investments. A possible reason is that the banks charged with monitoring had not actually contributed to the equity holding and therefore had little authority to exercise effective monitoring as real equity owners could. Finally, the design of the instrument did not provide any credible exit strategies for the external financier (in this case the government).

Given the attractive financial package, it is not surprising (as the Bangladesh Bank evaluation shows) that many beneficiaries did indeed set up what appear to be viable new enterprises. At the same time, given the insufficient incentives and compulsions on firms, it is also not surprising that progress in implementing and learning new technologies was often slow. The types of technologies that were being adopted were often fairly straightforward and many could in principle have been financed in the traditional way by bank loans and would probably still have been viable. Nevertheless, the EEF is a significant instrument because it recognizes the importance of market failures in financial markets. It is important to ask how we could improve this instrument by changing its design and improving the governance capabilities of the agencies managing it.

In the first place, the current design of the fund precludes vital sectors like the garment and textile industry. Instead of a predetermined sectoral allocation, a better design of the instrument would be to enable financing in any sector that satisfies the criteria of investing in potentially high value-adding technologies that have not yet been widely adopted. The requirement of *potentially* high profitability would be implicit in the rate of return requirements discussed later.

A properly designed financing instrument for technology upgrading should achieve a combination of i) a pooling of risk so that an individual firm owner would not face ruin if a project to upgrade technology took longer than planned, ii) the creation of sufficient compulsion on the owner/manager to put in high levels of effort into the project, ideally also iii) a satisfactory market return for outside investors, though this may be assisted with complementary government subsidies in some cases. Finally, iv) given the problems of disclosure and enforcement that we have repeatedly referred to, a viable risk-sharing financial instrument in a developing country should rely as much as possible on easy-to-observe proxy indicators to assess profit and asset value indirectly.

DIVIDEND / PROFIT SHARE	BUYBACK VALUE OF EQUITY STAKE	RISK-SHARING PROFILE
Equity and Entrepreneurship Fund Dividend in theory but not clearly defined: zero dividend likely	Growth in asset value expected but not clearly defined: buyback likely to be at face value of investment	Lowest risk for borrower, highest risk for equity provider. Equivalent to an interest free or low interest 'loan'.
True profit and risk sharing Dividends based on profit sharing: linked to incremental export earnings for ease of observation	Moderate rate of asset value growth agreed in advance (agreed growth of value should be lower than the market rate of interest)	True risk sharing model: Upside return for financier can be higher than market rate of interest, downside loss for the firm is lower than the market rate of interest
Traditional Bank Loan No share of profits required	Implicit buyback value is equivalent to a growth in the value of the investment equal to the market rate of interest	Traditional banking model: Highest risk for the borrower and lowest risk for the lender. Lender's return is predetermined

Figure 6 Risk sharing characteristics of alternative financing instruments

Figure 6 shows that the EEF is actually located at one end of the spectrum of possible risk sharing profiles. Here most of the risk falls on the financier, in this case the government, who can in addition expect almost no return from the investment. The 'buyback' value of the equity is the price at which the firm can pay off the equity investor to buy back their claim on the assets of the company. The poorly defined buyback value in this instrument based on the book value of assets means that in effect the firm will be able to buy back the equity simply by repaying the original investment. In terms of the conditions for a viable instrument, the EEF clearly achieves a significant lowering of risk for firms investing in technology. However, there are virtually no pressures on the firm to adopt the technology rapidly or successfully. It is certainly not replicable because private investors, and in particular banks will be unlikely to contribute to such an instrument. And its success depends precisely on difficult-to-observe profits and asset values. The difficulty of observing these accurately in effect converts the instrument into a long-term interest free loan. The problem is that as fiscal resources of the Bangladesh government are limited, there is limited scope for extending such a non-replicable instrument to other sectors.

At the other extreme of the risk sharing profile is the traditional banking model, where the return to the financier is predetermined and the borrower absorbs almost the entire risk implicit in the investment. The lender does not expect a share of profits but the effective buyback value requires a repayment of the original investment plus interest compounded to the date of repayment. We have discussed the theoretical limitations of this instrument for financing risky investments. This instrument does put strong compulsions on the borrower to adopt the technology quickly and successfully but because small delays can put enormous strain on the borrower, the borrower is likely to reject the offer of a loan for technology upgrading purposes. However, the instrument does satisfy the two other conditions that we identified above. By definition it provides an adequate market return to banks, and its operation does not require monitoring of difficult-to-observe profits or asset values. Its main problem is that this instrument is unlikely to be used for significant technology upgrading.

A true profit and risk sharing instrument would be located somewhere in between these two models. Some simple adaptations suggest how we could construct a profit sharing instrument by addressing the problems of disclosure. One solution would be to use an easy-to-observe proxy for profits. Export earnings are an obvious answer as they are relatively easy to observe and banks in Bangladesh already have arrangements that deduct interest due from export earnings. The difference is that in a risk sharing instrument the deduction from export earnings would not be based on a predetermined interest claim but would instead be a predetermined *share* or percentage of the incremental exports that are achieved as a result of the additional loan taken by a firm. As the garment industry is largely export-oriented, such a rule would achieve effective profit sharing, but based on an easy to monitor income stream rather than the disclosure of profits by the firm.

This would achieve the aim of risk sharing because if there were delays in the achievement of profitability in the new investment, the owner would not be building up unserviceable interest liabilities. Thus, *linking the dividend return to incremental export earnings* could overcome the problem of accurate profit disclosure. Admittedly, this formula would only work in a predominantly export-oriented firm, but most garment and textile industry firms in Bangladesh would satisfy this criterion.

The second requirement is that the design of the instrument should impose compulsions on the borrower to achieve the technology acquisition as rapidly as possible. Therefore there has to be an effective increase in the buyback value to reflect the growth in value of underlying assets as a result of successful technology adoption and adaptation. If there is no assumed growth in the value of the investment, the firm has reduced incentives to adopt the technology quickly. On the other hand the assumption of an excessive rate of growth of asset value passes the risk excessively on to the borrower. A compromise would be to agree in advance a moderate rate of increase in the underlying asset value. This would create adequate pressure on the firm to buy back the equity quickly, without making the investment excessively risky.

By negotiating an appropriate mix of the buyback value and the incremental export earnings share, the instrument may also satisfy the requirement that it should provide an adequate return to outside investors. The risk-return profile for the outside investor is different here: there is a potential upside that may be greater than with a conventional loan if the investment goes well and incremental export earnings are large. The downside risk is that the return may be less than a conventional bank loan. But there is a floor to the downside risk that is set by the buyback value of the equity, so the outside investor is assured of making a positive return.

The protection for the outside investor would be further increased if some or all of these profit and risk sharing financing instruments were backed by collateral, in the same way as traditional bank loans. This would make it more likely that the source of funding would not be limited to the funds available from the government of Bangladesh through the Bangladesh Bank. However, for some technologies, the core funding may have to come from government, in a redesigned Equity and Entrepreneurship Fund, or in the form of a subsidy stream to commercial risk sharing instruments.

The numerical details of the buyback and profit share will have to be negotiated by the equity investor and the investing firm, on a case by case basis. It is likely in some cases that the instrument may require an additional but relatively small government subsidy to make the return acceptable to the outside investor. In some cases it may be an entirely public fund that will have to be invested. However, a risk sharing investment that offers considerable upside returns to equity investors is more likely to be replicable, perhaps requiring some limited government subsidies that are likely to be significantly less than if the entire equity was based on budgetary resources.

Finally, the proposed instrument would satisfy the final condition that its implementation should not be based on difficult-to-observe data. Incremental export earnings are easy to observe and buyback asset values can be agreed in advance. Nevertheless, the difficulty of disclosure and enforcement would still prevent the private individual investor from participating in such an instrument either directly or through private contracting in capital markets. This is why banks with their superior enforcement and monitoring capabilities have to continue to play an important role in monitoring and managing investment financing to small and medium sized companies in developing countries. They are likely to be the main investors if any future risk sharing financial instrument can be devised, either independently or with appropriate government assistance.

Clearly these improvements in the design of the EEF would require an appropriate regulatory structure on the part of government in case of disputes and to ensure that exit by financiers was assured in occasional cases where investments failed to produce results. Financial judgement would also be required to determine the effective rates of return that determined the buy back values for the 'equity' in different categories of technology investments. Thus, it would be important to develop clearly defined governance capabilities on the part of the regulatory agencies, banks and business associations to make such a scheme work. The potential social benefits of developing new financial instruments appropriate for the institutional context of Bangladesh and which can address pressing needs of technology upgrading are likely to make this a worthwhile investment in governance.

Islamic banking instruments can be modified to achieve effective risk and profit sharing

The equity-type profit and risk-sharing instruments discussed in the last section have strong and obvious parallels with the profit and risk-sharing principles of Islamic banking. The profit and risk-sharing model suggested in the middle row of Figure 6 would clearly be a good candidate for Islamic banking institutions to try and develop further. It is very likely that the underlying principles of such an instrument are compatible with Islamic banking principles, or they are likely to become so with minor modifications. No interest is involved in these instruments. Moreover, the instruments offer the opportunity of genuine risk and profit sharing that Islamic banking principles encourage.

One of the banks in our survey is involved in Islamic banking and was also one of the pioneering banks in the garments industry. It was clear from our discussions that Islamic financial institutions are very keen to develop genuine risk and profit sharing instruments. However, effective profit and risk sharing instruments of the type discussed in the last section have not yet emerged in the long-term industrial lending

of banks committed to Islamic banking. The reason may be closely related to the inadequate provisions for disclosure of profits that we have discussed earlier. If an Islamic bank were actually to lend according to Islamic principles of profit and risk sharing, it may be deprived of a reasonable return as a result of the borrower systematically under-stating profits. To protect themselves from this obvious risk, Islamic banks in Bangladesh and in other developing countries have evolved non-interest forms of financing that nevertheless have the effect of requiring the borrower to make fixed repayments on loans backed by collateral to protect the bank from default. From the borrower's perspective, this loads the risks of adoption and adaptation largely on the borrower, in much the same way as in conventional banking arrangements.

In principle, the Islamic profit and risk sharing approach can provide a variety of financial instruments tailored to address the problems of risk sharing to accelerate technology upgrading without exposing the bank to excessive risk. The development of these instruments should therefore be an exciting challenge for Islamic banking in developing countries. Indeed, the refinements suggested for the Equity and Entrepreneurship Fund could potentially make it a financing instrument appropriate for Islamic banks (perhaps with further minor refinements). For instance, as profits are difficult to measure, it may be appropriate to deduce a profit share from export earnings. This vastly simplifies the profit sharing formula and the associated disclosure requirements.

The equity repayment could also be based on a formula similar to the one discussed above where the bank and the borrower can predetermine through negotiation the buyback value of the equity at future dates based on the risk appetites of financier and firm. Such a formula may be entirely consistent with Islamic banking principles with some fine tuning. At the same time, as already suggested, these financing instruments would allow the firm to significantly reduce the risk of building up unsustainable debt and possibly losing owner collateral due to unplanned delays in technology adoption. This in turn may significantly assist technology upgrading investments. As discussed in the previous section, the success of these instruments depends on developing appropriate governance capabilities in the banks offering these instruments as well as in the regulatory agencies of the state.

Direct government subsidies to reduce risk in technology upgrading

An alternative approach to sharing the risk involved in technology upgrading is to provide a direct subsidy on the capital cost of acquiring pre-specified technologies. This was the preferred choice amongst our surveyed firms for obvious reasons. The appeal of this approach also comes from the strategy of Bangladesh's neighbour India, which also happens to be a major competitor with Bangladesh in the textile and garment sector. Upgrading in the textile sector in India has been given a big boost with a multi-billion dollar injection of funds under the textile sector *Technology Upgradation Fund Scheme*, TUFs, adopted by the Indian government in 1999 (Ananthkrishnan and Jain-Chandra 2005: 23).

Under the scheme, investments in pre-specified machinery were given a five per cent subsidy on the interest charged on purchase loans. Writing in 2005, Ananthkrishnan and Jain-Chandra (2005) calculate that more than a billion dollars had already been disbursed under the Indian scheme. Clearly, with such large amounts of subsidy being

disbursed, there would be a significant impact on the purchase of new machinery and on up-scaling production to achieve significant scale economies. Effectively such a subsidy reduces the risks faced by the individual entrepreneur in buying a technology that may take more time to turn profitable than was initially planned.

It is too early to evaluate the results of the Indian scheme. There do not seem to have been any specialized governance structures set up to ensure that leakages of subsidy into machinery purchases in unplanned sectors did not happen. There is some indication that the main beneficiaries of the subsidy have been a small number of very large firms (Ananthkrishnan and Jain-Chandra 2005: 23). It is likely that in the absence of significant monitoring capabilities there will have been some amount of waste in the implementation of the subsidy. But there is no doubt that a significant amount of additional investment in new machinery has taken place in India.

Given the scarcity of budgetary resources, it is unlikely that Bangladesh could immediately match the Indian rates of subsidy, and in the short run a more targeted interest rate subsidy may be more feasible. This too would need to be matched with governance capabilities in the government agencies monitoring the use of disbursed funds. The monitoring would have to make sure that the subsidy was only claimed for investments that were authorized for clearly defined technologies and that over time these investments were paying off in terms of value addition in the sector. India with its greater budgetary resources could tolerate a higher level of wastage than Bangladesh. This implies that Bangladesh will have to aspire to higher monitoring standards precisely because resources are limited.

These observations point to the types of areas where governance capacity building should be concentrated. LDCs like Bangladesh cannot ignore the challenges they face from next tier developing countries like India and China. The latter have many explicit and implicit subsidy strategies for developing manufacturing and high value adding services. It is therefore imperative that Bangladesh begins the task of improving its capacities to deliver and manage narrowly defined subsidies to deal with critical market failures, in this case in technology upgrading.

A starting point may be to set up a limited fund for providing specific technology upgrading subsidies managed by a dedicated agency within government with high quality personnel charged with monitoring the narrowly defined subsidy scheme. In Bangladesh, it would make sense to start with a much less ambitious scheme than India, test if minimal governance capabilities could be developed in the agency charged with its monitoring, and scale up if the results were promising.

Government/Donor subsidies to reduce setup costs in technology acquisition:

The Danish B2B Model

A significant component of the risk involved in technology upgrading is the up-front investment that the entrepreneur has to make in establishing contacts with potential suppliers of technology, exploring alternative financing arrangements and establishing relationships with suppliers, financiers and others. If the project does not take off, these up-front investments are an irrecoverable loss for firm. This is a significant risk that can prevent entrepreneurs from examining all options and directions of expansion and technology expansion. In the successful newly industrializing countries of East Asia in the 1960s and 1970s, governments played a critical role in absorbing some of

these setup costs of coordinating suppliers, investors and financiers through coordination.

In many contemporary developing countries, government capabilities in this area are weak. This suggests a possible role for external catalysts to overcome these market failures because the payoffs to coordination activities are often very evident. An interesting case where donor development partners have been playing an important role in Bangladesh is provided by the B2B (Business to Business) support facility of Danida, the Danish aid agency (Ministry of Foreign Affairs Denmark 2006). This programme identifies viable and reputable Danish companies and introduces them to developing countries and potential local partners with whom joint ventures or partnerships could potentially be set up.

The Danish programme vets high quality Danish technology providers, finances their visit to the developing country and sets up meetings with domestic entrepreneurs. Its main purpose is to cover the costs of potential Danish companies to come to a developing country that they do not know and where they might otherwise not have come. In other words, the programme covers only the coordination costs and does not currently contribute to the investment cost or the subsequent risks faced by domestic investors.

But consistent with our argument of risk, this limited support has resulted in many new investments with relatively sophisticated technologies being brought into poor developing countries. One of our surveyed firms was at an advanced stage of implementing a project with Danish involvement in this way. It is quite possible that many of these potentially profitable investments may otherwise not have taken place.

The Danish programme is obviously restricted to Danish companies, and this significantly limits the range of technologies and sources of financing that the Bangladeshi firm can examine and assess through this programme. Nevertheless, this is a good example of how relatively small investments in coordination and information provision can help bring about investment in new technologies in developing countries. It is a model that other donors should seriously consider, and indeed there is no reason why the government of Bangladesh should not consider coordinating development partners to provide this service in a coordinated way.

A successful scaling up of the Danish B2B experience would need to take into account possible factors that account for the relative success of the programme. It does not seem to waste a lot of resources in pointless foreign visits and coordination activities that do not go anywhere. Waste is apparently minimized because the remit of the programme is very narrowly defined: it is restricted to Danish companies, and the programme is answerable to Danish taxpayers who would presumably be worried if very few deals were completed with Danish companies.

In scaling up the programme, it would be important to ensure that a broader agency had clear targets so as to ensure that resources that were spent in facilitating coordination met targets. If the agency failed to meet minimal targets, the programme could be reconsidered after a predetermined period.

LABOUR SKILLS AND TRAINING

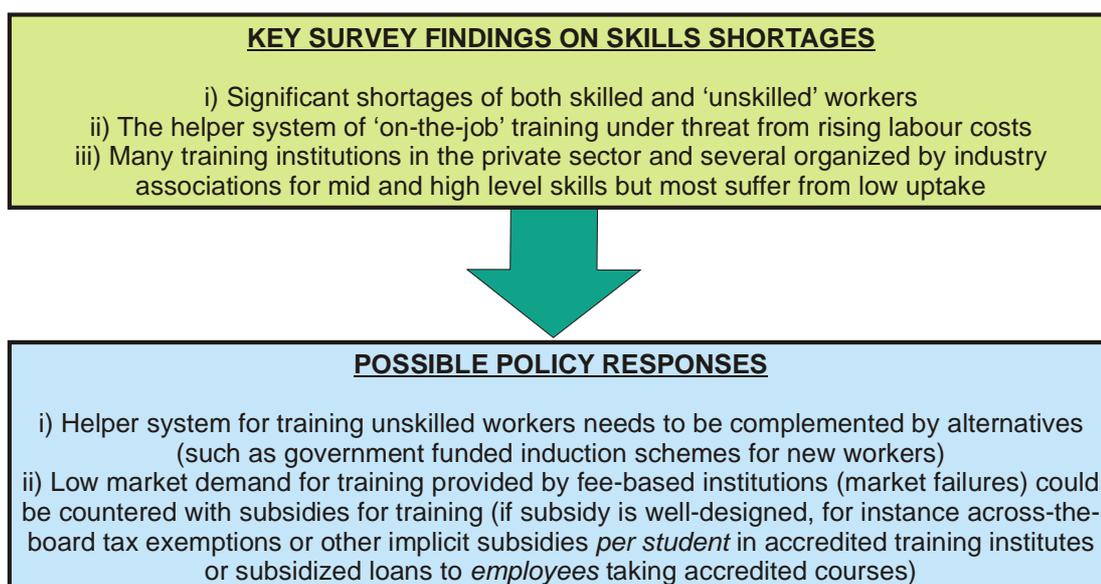


Figure 7 Survey Findings and Policy Proposals for Skills and Training

Significant shortages of both skilled and 'unskilled' workers

Despite being a labour surplus economy, the garment sector in Bangladesh suffers from perennial labour shortages. Some of the shortages are due to shortages of specific skills, but paradoxically there is also a shortage of 'unskilled' labour. The reason is that while labour is abundant, workers exposed to factory discipline and conditions of work in a high pressure export sector are difficult to find. The skills provided by formal school education are socially important but do not necessarily fill this gap.

The process of creating an industrial workforce from a pre-industrial or household economy (in the case of female workers) is a costly one and subject to market failures. The firms carrying out the training are not likely to capture the full benefits of their investment because labour is mobile. In a very similar way, training at mid and higher levels of the skills spectrum is also subject to market failure, for the same reasons. In both cases, underinvestment in training is likely to take place.

Our survey confirmed this expectation. However, the skills shortage was differently perceived by firms of different types. Small and even medium sized firms in sectors where Bangladesh had a significant export position (and therefore a pre-existing large pool of labour) were the least likely to report a significant skills shortage. These firms relied on the labour turnover across firms to replenish losses in their skilled workforce and to deal with cyclical fluctuations in their order books. Larger firms and those in more specialized niches of the market reported more significant skills shortages. For firms attempting technology upgrading in new areas, the training period is difficult to predict as discussed earlier. This makes investment in training also suffer from the problems of financing for the reasons that we have already discussed.

The helper system of ‘on-the-job’ training under threat from rising labour costs

One solution to the market failure in training unskilled labour was informally institutionalized in Bangladesh in the ‘helper’ apprentice system. Here, the solution to the potential market failure was to pass on a significant part of the training cost to trainees. Apprentices were taken on at lower wages as helpers, where their main task was to learn the jobs of production line workers who they would eventually join. If apprentices left for other firms, the firm providing the training did not take a big hit because the cost of the training was to a large extent covered by the worker herself during the training period.

Despite the obvious criticisms one could make of this system in terms of fairness, in the absence of alternative institutions to address the market failure, our respondents argued that this was a very effective system for achieving rapid growth in the manufacturing workforce. In particular it worked effectively in inducting a previously untapped source of labour, namely female household workers who had no previous experience in factory production. The rapid growth of the female manufacturing workforce in Bangladesh is consistent with this argument.

This particular institutional solution to the market failure in training is currently under threat (according to almost all our firm respondents) as a result of a growing pressure from workers and the government to raise the minimum wage level. Their concern was that this would affect in particular the viability of the helper system as an implicit apprenticeship system with potential workers partially subsidizing their own training.

If this becomes difficult, the absorption of large numbers of trainee workers into the sector may be affected, not because firms do not have the resources to provide the training, but because of a prisoner’s dilemma problem where each firm will be attempting to entice already trained workers from other firms. And firms engaging in training workers will be thinking twice about the incentives of other firms to poach their workers. This is the heart of the market failure affecting training in developing countries.

Many training institutions but most suffer from low uptake

One of the paradoxes about the skills shortage is that there seems to be not just an unmet demand for skills but also a growing supply of private training institutes and yet the uptake of training at these institutes is relatively low. Some of the training infrastructure has been set up by private sector training institutes targeting specific skills gaps in the garment sector. But the private training sector faces serious problems because of low uptake and the unwillingness of the garment employers to pay very much for training their workforce. Here is a clear example of a market failure.

Training is available and required, but is not taken up to its full extent despite employers facing serious shortages of skills. The problem once again is that the employer financing the training faces a market failure (externality) problem because the worker or manager being trained could leave the firm after the training and bargain for a higher wage elsewhere. Nor does the strategy of underpaying staff work at this level because the underpayment would have to be significant to cover the cost of training at these levels of skill. Such underpayment would not be acceptable to many of the staff concerned and this would rule out such a strategy. So the firm would

have to bear a much larger share of the total cost of training at this level. The low uptake reflects the firms' unwillingness to accept this exposure.

Thus, there are two separate problems here. The first is the identification of skills shortages and ensuring the supply of potential training. Our survey confirmed that significant progress is being made in this direction. Apart from a rapidly growing number of private training institutes, a number of industry associations including BGMEA were running their own institutes such as the Bangladesh Institute of Fashion Technology. UNIDO was also engaged in a major needs assessment exercise attempting to identify skills shortages in the garment and related sectors in Bangladesh (PPMA 2006). This information will further assist in developing appropriate fee-paying training programmes in Bangladesh.

However, we are more concerned with the second problem, namely that market failures were attenuating the incentives of entrepreneurs to purchase the training that was available for their workforce. One of our survey respondents was a training institute, who confirmed that their institute faced significant challenges in persuading firms to purchase their training despite pressing skills shortages in the sector.

POSSIBLE POLICY RESPONSES TO ADDRESS MARKET FAILURES IN TRAINING AND SKILL ACQUISITION

There are a number of solutions that could address the market failures affecting labour skills and training. However, each solution needs to be carefully designed and requires specific governance capabilities on the part of the government and/or other stakeholders to ensure that the solution addressing the market failure will actually work.

Supplant 'helper' system with alternative training schemes for 'unskilled' workers

The helper system is being strained in a number of ways. The employers' argument that demands for wage increases are undermining this system may be true, but it is also true that in some cases the system may be open to abuse from the perspective of workers. In any case, it is clear that this type of apprenticeship is not producing enough new recruits to the manufacturing workforce as there is a persistent shortage even of 'unskilled' workers. It is often not appreciated that 'unskilled' is a relative term. New entrants into the manufacturing workforce require a host of specific skills to be able to operate in a modern factory environment and the acquisition of these skills costs time and resources.

An interesting suggestion coming from some respondents was the possibility of a role for government in financing or partially subsidizing induction courses for new recruits into the manufacturing workforce. In a society where the vast majority of the population have still not been exposed to manufacturing production, this is a potentially important suggestion, and not just for the garment industry.

A short but intensive induction programme over several months which exposed aspiring entrants to basic skills, health and safety conditions, exposure to factory discipline and so on could help to turn out potential workers who could be absorbed into production at much lower cost for the employing firm. The programme would

have to offer accreditation for successful candidates. For such a programme to be successful the accreditation would have to be useful for potential employers, enabling them to directly employ workers who did not need a long period of induction.

Quality assurance requirements imply that it would be better if the training is not directly provided by government bodies but by private institutes receiving government funding. This would mean that if the accreditation offered by a particular institute was inadequate, for instance if its accredited trainees were rejected by employers, its training contract and the subsidies it received could be terminated. Such training programmes could also be set up in *mofussil* towns and even further afield to offer training and potential employment opportunities in regions that are typically excluded from these opportunities.

As Bangladesh strives to find new manufacturing niches in the global market, the supply of workers who can rapidly adapt to factory working will become increasingly critical in maintaining competitive advantage over other developing countries. But the chances of an induction strategy being successful will require careful identification of general factory induction training needs by industry associations, policy advocacy by associations for this to be recognized as a government priority and a receptive government that understands the significant long-term benefits of providing some financing for providing the basic training appropriate for converting agricultural and informal sector workers into potential manufacturing workers.

Encourage uptake of training in accredited private training institutes with targeted training subsidies

Market failures are clearly slowing down the absorption of training already available in private training institutes. The obvious textbook answer to this problem would be to make available a subsidy to the training provider, the employer or the employee so that the cost of the training comes down and there is an incentive for the employer, the employee or both to pay for the training.

However, there is a very real danger with all subsidy schemes that resources will be wasted or that the subsidy will distort the allocation of training towards programmes that have a subsidy attached regardless of the worth of the training in terms of its contribution to employee productivity. The design of the subsidy scheme is therefore very important to minimize these dangers.

A subsidy to employers for employees they train may not be efficient because some employers may claim subsidies for employees who have not received any significant training. The alternative of providing the subsidy to the training institute makes more sense but this also has problems. A subsidy to the training institute would have to be across the board so as not to discriminate against any types of training. It could be delivered through some forms of tax exemption or other implicit subsidies.

If the subsidy to the training institute was linked to numbers of student completing their courses, this would reveal how attractive that training was in the market and the potential waste of subsidy would be minimized. In order not to discriminate against expensive training schemes that provided high value-adding training, the subsidy may have to be a proportion of the training cost rather than a flat subsidy per student.

However, there are significant limitations in this strategy. The main problem is that this subsidy may not make a significant difference to the price of training and therefore may have a minimal effect on the up-take of skills training. The training institute receiving the subsidy may have little incentive to reduce prices enough and/or the subsidy may not allow a significant reduction in price. In that case, the take-up of training may not increase sufficiently.

This is most likely for more expensive training or when the gap between the market price of training and the price employers are willing to pay (given the market failure) is large. In this case, a more sophisticated subsidy arrangement would have to be devised. For instance, one option may be for government to give interest free or low interest loans to *employees* who wish to improve their skills. This could be a matching subsidy such that the employer also paid a part of the cost of the training, and the employee paid a part financed by an interest-free or low interest loan from the government. The employee would then repay the loan once he or she was back in employment and presumably enjoying an improvement in income.

The advantage of such a system is that a more effective subsidy can be awarded, and the government is more confident that the training selected jointly by the employer and the employee would indeed be value-enhancing since both would be paying a part of the total cost. But if employees have a high probability of changing jobs, employers may not be willing to pay any significant part of the training cost, and in these cases the training is most efficiently financed by employee loans.

Over time, the cost of the subsidy may not be very large as a significant part of these loans would eventually start to be repaid. However to ensure repayments, governance capabilities in administering such a scheme would have to be credibly developed. It is important to only initiate such a scheme if these governance capabilities can be developed. Effective collection of the loans is not just important for fiscal reasons. The effectiveness and credibility of the loan recovery is essential to ensure that both employers and employees have strong incentives to ensure that they are purchasing high quality training. If employees know they have to pay back a loan, they will ensure that they and their employers will strive to only purchase training that will be likely to allow the employee to earn more in the future.

Finally, the employer's contribution to training, and indeed their ability and willingness to engage in effective on-the-job training is closely connected to the problem of financing learning. Expenditure on training is not just subject to the market failures discussed here but also the general problem of uncertainty about the period after which the employer can start making money, in the way discussed in the section on risk sharing. If the employer is unable to share the risk of financing the learning process, it is not very likely that they will countenance any significant expenditure on training. Thus, employers are more likely to make a financial contribution to training their workers and employees if their financing of this expenditure can be organized through risk sharing institutions.

LAND ALLOCATION AND THE ACHIEVEMENT OF SCALE ECONOMIES

The problems of acquiring land can be a serious constraint for new projects and for expanding existing operations in developing countries, particularly in relatively densely populated ones. Our survey found that this was lower down on the list of problems for existing firms, though as we report below, most were operating multiple plants as a direct result of land market problems.

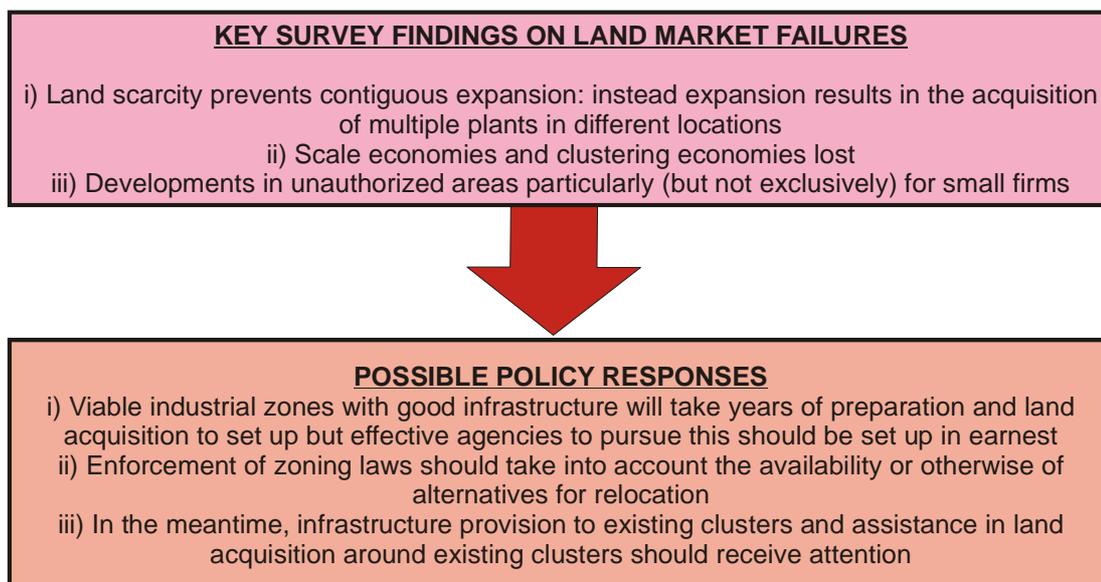


Figure 8 Survey Findings and Policy Proposals for Land Market Failures

Land scarcity prevents contiguous expansion

The expectation of market failures in land markets was strongly supported in our survey. As the list of firms in the Appendix shows, the typical pattern is for the same entrepreneur or holding group to have a relatively large number of small to medium sized plants in different locations. The survey confirmed that the predominant reason for this was the difficulty of acquiring contiguous pieces of land at low transaction cost.

Scale economies and clustering economies lost

A significant implication of this is that many scale economies and clustering economies cannot be captured by the very entrepreneurs who have the experience, the entrepreneurial skills and track record to benefit most from these economies. Many of our surveyed entrepreneurs reported significant time wasted simply travelling from plant to plant. Multiple plants also affected the quality of supervision the owner could exercise over all the plants. Scale economies were lost because some expensive fixed installations have to be wastefully replicated including management and supervisory personnel.

The loss of scale economies is a serious problem not only because scale allows the production of more competitively priced products but also because the tendency is for buyers to prefer sellers who can accept orders on a very significant scale. In the coming years, Bangladesh will be increasingly forced to compete with countries like

China and India that are aggressively acquiring scale economies in their textile and garment sectors precisely for this reason. In the long run therefore, Bangladesh also has to have a strategy to consolidate its textile and garment sector and achieve as many scale economies as possible. The consolidation of plants belonging to the same owner is the obvious starting point.

No less significant is the loss of potential clustering economies because similar firms cannot set up in proximate locations. This deprives them of clustering economies that can be important particularly when firms start to move up the value chain. International evidence suggests that if firms are upgrading using similar technologies, they can gain significantly by being located close to each other. This allows them to share technological knowhow and skilled workers and to coordinate technology acquisition in ways that promise significant collective benefits. The absence of significant clustering in Bangladesh may have significant effects in the future if technology upgrading begins in earnest.

Development in unauthorized zones is common

The absence of clear zoning laws, the difficulty of acquiring land and the shortage of infrastructure in areas far from urban centres has resulted in a significant amount of industrial expansion in unauthorized areas. This includes the setting up of industrial production within urban areas that are in grey areas or directly contravening zoning laws. Clearly, these developments are disliked by urban residents as well as entrepreneurs who have followed zoning laws. Governments have begun to clamp down on violations of zoning, environmental and other laws. However, entrepreneurs in the unenviable situation of having sunk capital in an unauthorized zone are clearly vulnerable to potentially high costs of relocation. They are understandably just as angry with the authorities for not providing attractive legal locations for development in the first place.

These problems are particularly acute for relatively small firms. They are less likely to be able to find contiguous land plots near reasonably good infrastructure and then to negotiate the politically difficult process of transacting multiple plots of land to build up a plot where they can set up operations. Some of our respondents who were early entrants in the business looked back with nostalgia to the days (two decades ago) when reasonably priced contiguous plots could be purchased in places like Mirpur or Tongi. This is now impossible for new entrants.

The implication is clearly that unless dramatic action is taken to make land near reasonable infrastructure available for the next generation of entrepreneurs, Bangladesh's progress into manufacturing may face serious constraints in the near future. We believe we would have got an even more urgent message if we could have surveyed *potential* entrants as opposed to those who had somehow already entered.

POSSIBLE POLICY RESPONSES TO ADDRESS LAND MARKET FAILURES

The achievement of better scale economies in the garment industry is a necessary part of technology upgrading and therefore an immediate target for policy attention in Bangladesh. If so, land for expansion will soon become a critical condition for the success of any technology upgrading strategy. Land constraints are also important to

address simply for the normal expansion of the industry, to enable new small firms to enter without having to violate land use regulations. Good governance reforms are likely to have the slowest of impacts on developing country land markets that face seriously high transaction costs. Enforcing property rights effectively and sorting out multiple and conflicting land claims and contradictory documentation is bound to be a hugely expensive social process that typically takes many decades to make significant progress. In the meantime, practical solutions have to be found to address immediate problems and issues.

To rely on good governance reforms to make land markets efficient and thereby solve these problems by allowing entrepreneurs to buy land in well-working land markets is an appealing but unrealistic strategy. In the short to medium term alternative responses have to be considered and solutions found if manufacturing growth is to continue. This is also the comparative international evidence from all the international development experience that we have access to (Khan 2004).

Administrative and political preparations for effective land acquisition take time and work has to start urgently

The most obvious solution in the absence of well working land markets is the provision of industrial zones and parks by government for designated industrial sectors. However, this also requires significant governance capabilities on the part of government because acquiring and developing large tracts of contiguous land is by no means simple, partly because of the difficulty of dealing with conflicting land rights, absent and conflicting documentation, and therefore the absence of deep land markets where land values are well known. The process of acquisition and compensation is therefore fraught with political risk and very often charges of unfairness because it is difficult to work out who should be compensated and how much.

The experience of Nandigram and Singur in West Bengal tell us that considerable administrative capacity and political finesse is required to address the land crisis facing industry. To address the looming land crisis, steps clearly have to be taken from now in Bangladesh and it will take several years before these capacities can be sufficiently developed for significant industrial zones and parks to be developed. The BGMEA's proposal for setting up garment villages does not just have budgetary implications for land acquisition. The political and administrative requirements for actually carrying out the land acquisition near potential infrastructural installations will require much more than a budgetary approval.

Appropriate governance capabilities have to be developed in administrative agencies that are charged with resolving land acquisition problems to set up the industrial zones. Even more important, the importance of this for Bangladesh's continuing development will have to be *politically* established. The Indian example shows that the administrative and political problems in land acquisition are much more serious than the budgetary ones.

At this stage Bangladesh probably does not have either the strong administrative capacities to deal with the myriad problems involved in creating large industrial zones, nor the political constituency which would support such a programme. Clearly, industry associations not just in the garment and textile industry, but across the Bangladeshi manufacturing sectors have their work cut out to make this case and

strive to create the administrative and governance capabilities to implement these requirements over the next few years.

Enforcement of zoning laws should be phased in gradually

If the creation of alternative industrial zones is likely to take considerable time, this has immediate and important implications for the enforcement of complementary laws regarding industrial zoning. There is strong political pressure on governments by other constituencies (residents, environmental campaigners and others) to rapidly enforce zoning laws on industry that has often located in prohibited areas. However, there is a need here to do a social cost-benefit analysis. If industry is forced to cease production in certain sites without any alternative sites being available, the social cost is likely in many cases to be significantly higher than the social benefit. The enforcement of these laws should therefore proceed at the same pace as alternative sites that are feasible in terms of price and infrastructural amenities become available.

Interim Steps: infrastructure provision to existing clusters and assistance with land acquisition

As the development of industrial zones, garment villages and so on will take time, and probably more time than many advocates of these strategies believe, interim measures are required to address immediate problems in the industry. A number of interim measures could be considered.

For instance, there are already several clusters of firms in and around the major cities, particularly Dhaka. The government could consider releasing public land near these clusters to allow expansion of industrial clusters. These decisions may also be controversial, and may require for instance some lands designated as ‘forest’ lands being reclassified as appropriate for industrial development. Many forest areas near Savar and Gazipur have long since stopped being forests due to unauthorized factory construction and a policy decision has to be taken as to whether this industrial development can be feasibly rolled back in these areas.

Reclaiming these areas as forests may have a social cost that is infeasible in terms of lost capital, production possibilities and employment losses. If rolling back these developments is not feasible, the economic and political reality has to be confronted. It may be preferable to regularize at least some of these industrial developments and regulate them in a transparent way rather than allowing the current practice of informal payoffs to enforcement officials to continue. Forest land further afield could then be effectively protected by allowing clustering around these existing clusters.

Another advantage of regularizing *some* carefully selected industrial clusters, for instance in the areas north of Dhaka would be that land for expansion can also be made available as the state owns significant areas of khas and forest land in some of these areas. While genuine forests are a considerable national resource, small plots of ‘forest’ lands without any trees which are in the middle of significant industrial developments that are not at all feasible for dismantling can be made available for the expansion of existing industrial clusters. Many of these forest lands are small plots completely cut off by industrial and commercial developments all around them. These suggestions do not represent an ideal solution but in a land-scarce economy these

options should be carefully considered and compared with the options of not doing anything or trying to dismantle very significant industrial developments.

If this is a direction in which regularization should proceed, governance capabilities need to be developed to take this forward. First there would need to be a survey of existing clusters, both approved and informal, the distribution of forest, khas and private lands to determine areas where it would be socially advantageous to regularize developments, and identify other areas where relocation would be a better option in terms of a social cost-benefit analysis.

Secondly, available public land in these areas could be used to develop small to medium scale industrial zones which could be leased out to developers. In this way relatively cheap land could be made available to startup companies and new entrants while also generating an income stream for government through lease rentals. Some land could also be made available to existing firms in the region which are looking for expansion and achieving scale economies to compete with Bangladesh's increasingly aggressive competitors. Clusters could also be encouraged through the provision of infrastructure to existing clusters and the construction of appropriate transport networks.

These interim measures would hardly be sufficient to address the long-term challenges of making significant amounts of land available for industrial development. As we have argued, that requires a much more significant administrative and political preparation, and the areas in which those developments may eventually happen would probably be far away from Dhaka where significant land blocks may eventually be available for acquisition. A further precondition for the development of these future industrial zones away from the capital would be the budgetary capability of the state to provide high quality infrastructure in those areas. This is why a series of interim measures is vital to allow industrial development to continue in a legal and regulated way in the next few years.

APPENDIX: LIST OF PARTICIPANTS IN SURVEY AND IN STAKEHOLDERS CONFERENCE

FACTORIES

1) *Elite Garments Industries Ltd.*

Owner: Mr. Ramzul Seraj (Managing Director)

Location: Gazipur

Type of factory: Shirt / knit

Number of workers: around 1500. Mainly large scale production of shirts.

2) *Fibertex Shirt MFG Ltd.*

3) *Interfab Shirt Mfg. Ltd*

Owner: Md. Shimul Hasan (Managing Director)

Location: Gazipur

Type of factory: Small-scale production of shirt (subcontracting)

Number of workers: 230

Number & Type of machines: 110 sewing machines.

4) *KS. Embroidery & Punching Ltd.*

5) *Feiya (BD) Trading*

Owner: Mohammed Sohel (Managing Director)

Location: Uttara

Type of factory: embroidery

Number of workers: 50

Investment (initial): US \$ 15000

Number & type of machines: Seven. Small-scale operation based on a partnership with a Chinese investor.

6) *Greenland Garments Ltd.*

Owner: Zulfiquar Rahman (Managing Director)

Location: Gazipur

Type of Factory: Dyeing & Knit & garment (shirt): Composite Knit Factory

Number of workers: 140 – Dyeing/ 65 – Knitting/ 700 – Garments

Number & type of machine: 14 – Dyeing/ 13 – Knitting/ 267 – Garments/ Auxiliary machines – 9 / testing laboratory – 9. Medium scale integrated production.

7) *Mark Designers Group*

8) *Mark – 2000 Limited*

9) *Jeans Processing Ltd.*

Owner: Ejaz Ahmed

Location: Mirpur

Type of factory: Denim & Twills bottom

Number of workers: 153

Initial Investment: US\$ 100,000

Number & type of machines: 60 / 4 types

10) *The Immaculate Accessories. Ltd.*

11) *The Immaculate Apparels Ltd.*

Owner: Kazi Iftekhar Ahmed (Managing Director)

Location: Mirpur

Type of factory: woven & printed labels / accessories

Number of workers: 15 (initial)

Initial Investment: machines US \$ 70,000.

Number & type of machine: 4 woven and printed label machines.

12) *Mohammadi Group*

Owner: Anisul Huq (Managing Director)

Location: Uttara

Type of factory: Large-scale cutting and stitching mainly of shirts. Group owns 7+ companies with around 4000 workers but each factory is medium scale.

13) ***International Trade Connection***

14) ***Tiffiny's Wear Limited***

15) ***Four Wings Limited***

16) ***Saville Row Limited***

Owner: Zafar Osman (Managing Director)

Location: Mohakhali

Type of factory: Modern integrated knitting. Currently engaged in significant technology upgrading by setting up new composite textile knitting mill with assistance from DANIDA on technology acquisition and with Danish partnership.

17) ***DefoinBd. Ltd.***

18) ***Defoin Embroidery Ltd.***

19) ***Jaantex Apparel Ltd.***

Owner: Zafar Iqbal Siddique (Managing Director)

Location: Mirpur

Type of factory: Screen printing & Embroidery using labour-intensive technologies. Plans to attempt technology upgrading by setting up machine-based printing plant in Gazipur.

20) ***Surma GarmentsLtd.***

21) ***Savar Textiles Ltd.***

22) ***Supasox Ltd.***

23) ***Smart Sox Ltd.***

Owner: Towhid Samad (Managing Director)

Location: Savar

Type of factory: Hosiery

24) ***Bengal Jeans Ltd.***

Owner: Shawkat uz Zaman (Managing Director)

Location: Uttara

Type of factory: Denim bottoms

25) ***Bengal Indigo***

Owner: Nassir Khan (Managing Director)

Location: Uttara

Type of factory: Sweaters / Dyeing

26) ***Mode Group***

27) ***Proud Textiles Ltd.***

28) ***Century Apparels Ltd.***

29) ***Padma Embroidery Ltd.***

30) ***Rahmat Sweater (Bd.) Ltd.***

31) ***Sabuj Knitting & Dyeing Industry Ltd.***

Owner: Adnan Chowdhury (Managing Director)

Location: Around Dhaka, Headquarters Dhanmondi

Types of factory: shirts & sweaters, embroidery, knitting mainly in leased-in medium scale factories.

32) ***FarEast Knitting and Dyeing Industries.***

Owner: Asif Moyeen (Managing Director)

Location: Savar

Type of Factory: Large-scale integrated modern (2100+ workers) knitting, dyeing and garmenting.

Ongoing plans of technology upgrading based largely on reinvested profits.

33) ***Panache Knitted Creations.***

Owner: Majed Khan (Managing Director)

Location: Gazipur

Type of factory: Medium scale sweater factory, around 500 workers.

- 34) ***Knit Fasions.***
35) ***Square Attires.***
36) ***Plummy Fashions.***

Owner: Fazlul Haque (Managing Director)

Type of factory: Knitwear, T-shirts, with backward linkages into dyeing. Total around 1200 employees.

Owner also head of BKMEA.

LIST OF BANKS

- 37) ***IFIC***
– Wackar Hassan (Executive Vice President)
– Mashiur Rahman (Managing Director)
– Chowdhury Aktar Asif (Manager, Project Loan)
- 38) ***Bangladesh Bank***
– Md. Khurshid-ul-Alam (Executive Director)
- 39) ***Islami Bank Bangladesh Ltd.***
– A.T.M. Harun-ur-Rashid Chowdhury,
– Mohammad Abdul Mannan (Deputy Executive President)
– Kh. Md. Munirul Alam Al- Mamoon,
– Md. Siddiqur Rahman (Assistant Vice President)

OTHERS

- 40) ***GTZ***
– David Ambadar (Project Manager, promotion of SMEs & private sector),
– Dietrich Stolz (Program Coordinator PROGRESS – Promotion of Social Environmental & Production Standards in RMG Sector)
- 41) ***Royal Danish Embassy***
– Ib Albertsen (Programme Coordinator B2B programme)
- 42) ***Garment Industry Management Academy***
Private Training Centre
Hilary Fernando (Principal Consultant).

The interviews were conducted through 2007 and the stakeholder conference was held on the 9th of September in Dhaka. We are grateful to all the participants for sparing their valuable time to participate in this process, and to UNDP Bangladesh for enabling this process.

References

Ahmed, Muhammad Nehal and Muhammad Sakhawat Hossain 2006. *Future Prospects of Bangladesh's Ready-Made Garments Industry and the Supportive Policy Regime*. Policy Note Series No. PN 0702. Policy Analysis Unit (PAU) Bangladesh Bank: Dhaka.

Ananthakrishnan, Prasad and Sonali Jain-Chandra 2005. *The Impact on India of Trade Liberalization in the Textiles and Clothing Sector*. IMF Working Paper No. WP/05/214. IMF: Washington DC.

Bangladesh Bank 2006. *Evaluation Report of the Projects Under the Equity and Entrepreneurship Fund*. Evaluation Sector, Implementation Monitoring and Evaluation Department. Ministry of Planning, Government of the People's Republic of Bangladesh: Dhaka.

Bangladesh Enterprise Institute and World Bank 2003. *Improving the Investment Climate in Bangladesh*. Pilot Investment Climate Assessment. World Bank: Washington. Available HTTP: <http://siteresources.worldbank.org/INTPSD/Resources/336195-1092412588749/00--Bangladesh--1-78.pdf>

Bhattacharya, Debapriya, Mustafizur Rahman and Ananya Raihan 2002. *Contribution of the RMG Sector to the Bangladesh Economy*. Paper No. 50. Centre for Policy Dialogue: Dhaka.

CPD 2007. *Bangladesh's Apparel Sector in Post-MFA Period: A Benchmarking Study on the Ongoing Restructuring Process*. Executive Summary. Centre for Policy Dialogue: Dhaka.

Gereffi, Gary and Olga Memedovic 2003. *The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries*. Sectoral Studies Series, United Nations Industrial Development Organization. UNIDO: Vienna.

Hellman, Thomas, Kevin Murdock and Joseph Stiglitz 1997. Financial Restraints: Toward a New Paradigm, in Aoki, Masahiko, Hyung-Ki Kim and Masahiro Okuno-Fujiwara (eds) *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis*, Oxford: Clarendon Press.

ILO 2005. *Promoting Fair Globalization in Textiles and Clothing in a post-MFA Environment*. Report for Discussion at the Tripartite Meeting on Promoting Fair Globalization in Textiles and Clothing in a Post-MFA Environment. ILO: Vienna.

Kee, Hiau Looi 2005. *Foreign Ownership and Firm Productivity in Bangladesh Garment Sector*. Development Research Group Mimeo. World Bank: Dhaka.

Khan, Mushtaq H. 2004. State Failure in Developing Countries and Strategies of Institutional Reform, in Tungodden, Bertil, Nicholas Stern and Ivar Kolstad (eds) *Annual World Bank Conference on Development Economics Europe (2003): Toward*

Pro-Poor Policies: Aid Institutions and Globalization, Proceedings of Annual World Bank Conference on Development Economics, Oxford: Oxford University Press and World Bank. Available HTTP: <http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000160016_20040518162841>

Khan, Mushtaq H. 2005. What is a "Good Investment Climate"?, in Kochendörfer-Lucius, Gudrun and Boris Pleskovic (eds) *Investment Climate, Growth, and Poverty*, Washington D.C.: World Bank.

Khan, Mushtaq H. 2006. *Governance and Anti-Corruption Reforms in Developing Countries: Policies, Evidence and Ways Forward*. G-24 Discussion Paper Series: Research Papers for the Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development No. 42. United Nations Conference on Trade and Development: New York and Geneva. Available HTTP: <http://www.unctad.org/en/docs/gdsmdpbg2420064_en.pdf>

Khan, Mushtaq H. 2007. *Governance, Economic Growth and Development since the 1960s*. DESA Working Paper No. 54 (ST/ESA/2007/DWP/54). United Nations Department of Economic and Social Affairs: New York. Available HTTP: <http://www.un.org/esa/desa/papers/2007/wp54_2007.pdf>

Khondker, Bazlul Haque and Abdur Razzaque 2003. Exports, Employment and Working Conditions: Emerging Issues in the Post-MFA RMG Industry, in ILO (ed.) *RMG Industry, Post MFA Regime and Decent Work: The Bangladesh Perspective*, Dhaka: International Labour Organization.

Meisel, Nicolas and Jacques Ould Aoudia 2008. *Is "Good Governance" a Good Development Strategy?* Working Paper No. 58. Agence Française de Développement (AFD): Paris.

Ministry of Foreign Affairs Denmark 2006. *Company Guidelines: Support Facilities in the B2B Programme*. Ministry of Foreign Affairs of Denmark: Copenhagen. Available HTTP: <www.danida-publikationer.dk>

Mlachila, Montfort and Yongzheng Yang 2004. *The End of Textile Quotas: A Case Study of the Impact on Bangladesh*. IMF Working Paper No. WP/04/108. International Monetary Fund: Washington. Available HTTP: <<http://www.imf.org/external/pubs/ft/wp/2004/wp04108.pdf>>

PPMA 2006. *Needs Assessment Survey for Strengthening Bangladesh Primary Textile and RMG Industry: Training, Research, Design, Testing and Consultancy Needs*. Draft Final Report submitted to United Nations Industrial Development Organization. Project Promotion and Management Associates: Dhaka.

Rahman, Mustafizur 2004. *Export-Oriented Knitwear Sector of Bangladesh: Challenges in Sustaining Current Momentum in Post-MFA Global Market*. Keynote Presentation in Seminar Organized by Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA), September 23rd 2004. Centre for Policy Dialogue (CPD): Dhaka.

Shleifer, Andrei and Robert W. Vishny 1997. A Survey of Corporate Governance, *Journal of Finance* 52 (2): 737-83.

Stiglitz, Joseph E. and Andrew Weiss 1981. Credit Rationing in Markets with Imperfect Information, *American Economic Review* 71 (3): 393-410.

World Bank 2005. *End of MFA Quotas: Key Issues and Strategic Options for Bangladesh Readymade Garment Industry*. The World Bank Bangladesh Development Series No. 2. The World Bank Poverty Reduction and Economic Management Unit: Dhaka.