

## **Comments on the Proposed Investment by Tata Group in Bangladesh\***

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### **Executive Summary**

The issue of gas pricing is the key to the determination of Bangladesh's net economic benefit from the investments proposed by Tata. On the face of it, the proposed steel-power complex appears promising, since it combines the advantage of the availability of iron ore and energy resources in India and Bangladesh respectively; however, many strategic issues need to be resolved, particularly regarding infrastructure provision, land acquisition and the feasibility of coal mining.

The economic viability of the fertiliser project may depend largely on subsidised gas supply, particularly when the investment returns need to cover the country-risk factor as perceived by a foreign investor.

Tata's investment proposal is a complex one with several components. The proposed urea plant is an entirely separate project with no link with the rest of the investment proposal; as such, its merit is better judged separately. The other part of the investment project is an integrated one involving steel production, power generation and coal mining. Even for this integrated project, the possibility of generating power by gas and thus leaving out the coal mining component may be kept open as an alternative, given the many unresolved issues regarding coal mining.

Tata's projected profits from the investments seem to be large enough, particularly for the steel-power complex, so as to provide ample scope for bargaining in order to arrive at a fair win-win deal. There does not seem to be any strong case for allowing tax-breaks or other incentives beyond what are allowed under the existing structure of incentives for such investments. Special incentives beyond the existing rules also create precedence for giving such incentives to other prospective investors.

Further negotiations with Tata would be facilitated if more detailed information is made available regarding the project profile for each component of the project. As far as one can see from Tata's documentation, there seems to be discrepancies in the estimated value-added, the annual tax payments and the implied profits to be retained by Tata.

Natural gas will be the critical input to Tata's operations. The benefit from the direct investment impact will be thus highly sensitive to the pricing of gas. A subsidy of US\$ 1 per unit (i.e. per mcf) of gas sold to Tata will imply a subsidy of US\$ 68 million annually - or US\$ 83 million if captive power for the steel plant were to be generated

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\* A report prepared at the request of the Board of Investment, Government of Bangladesh.

from gas instead of coal. Against this, the direct benefit from Tata's operations will consist of an estimated US\$ 20 to US\$ 30 million annually in terms of salaries and another US\$ 38 million in tax revenue estimated as the annual equivalent of the tax payments to be made by Tata with a ten-year tax holiday (or US\$ 63.5 million in case of a six-year tax holiday).

Bangladesh has a history of subsidised gas supply. Whatever may be the rationale for such subsidy, the use of gas should be guided by its true economic price based on the principle of the opportunity cost. There is a need for devising economic pricing mechanisms for gas, based on the predictions regarding how long the gas reserves will last and what will be the cost of importing alternative fuel when the country will run out of gas. While the current gas price of US\$ 2.35 per unit (mcf) for industrial use may not be highly misaligned, it will need to be flexibly adjusted in future.

For ensuring proper use of gas, the government should commit to a flexible gas price policy reflecting at least in part the true economic pricing of gas. There should be an explicit rationale for providing any gas subsidy. Tata may be offered gas at the prevailing price for industrial use without any favour or discrimination. An arrangement is also suggested for ensuring gas supply to Tata that involves a fair sharing of risk.

The negotiations with Tata regarding gas supply arrangements demonstrate a fundamental weakness in our energy policy. The lack of knowledge regarding gas reserves poses a severe constraint in formulating a gas utilisation policy and making commitment for any long-run use of gas.

There is a problem in depending on the international oil companies (IOCs) entirely for gas exploration. The high and low projections of domestic gas demand vary widely. The IOCs will tend to plan their exploration and gas-field development activities keeping in view the low demand projection, since they would like to be sure about getting quick returns from their investments through full-capacity production from the discovered fields. For this reason, it is important to strengthen the domestic capacity for gas exploration.

The indirect benefits from Tata's projects will come from the balance of payments support and from the positive spill-over effects on other sectors created through outsourcing and the purchase of inputs. While these benefits are important, the report produced by the Economic Intelligence Unit (EIU) of the Economist makes highly exaggerated claims in these respects. In estimating the indirect impact on other sectors, it ignores the fact that the expansion of production activities in an economy like Bangladesh is generally constrained by lack of inadequate production capacity rather than by demand deficiency.

There will be of course some demand-driven expansion of activities in sectors where employment can be created with very little investment in fixed capital. Such employment will be mainly in service sectors – such as the employment created in and around the township that will grow around the proposed steel mill.

It is estimated that Tata's operations will provide balance of payments support of US \$ 628 million annually through net exports and US\$ 323 million through import substitution. The actual balance of payments support will be of course much lower because of the repatriation of profits – a fact that has been curiously overlooked in the EIU report.

Tata's project will produce about US\$ 1 billion worth of steel annually, 75 percent of which will be initially exported after meeting the country's entire domestic demand. The domestic price of steel will perhaps be lower than if steel were to be imported. There are a whole range of industries and construction activities that will get a boost directly or indirectly from the cheaper supply of steel, and the benefit will increase with the growth of steel-based industries in the country. Although some existing facilities for steel production, mostly from scraps, may be adversely affected, this will be much more than compensated by the benefit.

Tata's operations will lead to increased demand on railway transportation for the import of iron ore and the export of steel and coal. This will need substantial investment in railway infrastructure, along with improvement in management efficiency to ensure that the government does not incur losses from such investment. The viability of the investments will also depend on the tariffs charged, given the fact that the public transport systems, including railways, are heavily subsidised in Bangladesh.

The implementation of Tata's proposed projects will need land acquisition and resettlement of residents and the construction of road links to the plants. Agreement will be needed about how Tata proposes to pay for the costs involved. While Tata has proposed to buy the land at market prices, an alternative would be for the government to incur the entire costs and to recover it through renting or leasing the infrastructure to Tata. Land being the scarcest resource in Bangladesh and as it becomes even scarcer with the growth of economic activities, land prices tend to increase quite rapidly in real terms. Thus, buying land and even keeping it idle may prove a profitable investment. The sale of land to foreign investors could thus lead to windfall gains to them at the time of winding up the investment project.

## **Full Report**

### **Comments on the Proposed Investment by Tata Group in Bangladesh\***

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#### *Evaluating FDI: Some General Comments*

Foreign direct investment (FDI) brings in the much-needed foreign funds for current investment, but it also creates long-term debt obligation in the form of future repatriation of profits earned by the foreign investors. The non-repatriated part of the future stream of value-added from the investment directly contributes to the growth of the country's gross national income (GNI); and this mainly consists of the wage income of the domestic workers employed by the project and the tax revenues of the government.<sup>1</sup>

The desirability of FDI, however, depends on its "net social benefit" accruing to the host country, the estimation of which is much more complicated.<sup>2</sup> As in the case of social cost-benefit analysis of domestic investment projects, all inputs and outputs need to be estimated at their "economic" prices, which represent their "real" value to society (the so-called opportunity costs). This is important because domestic prices are often largely distorted. For example, any subsidies on input prices that make actual prices lower than their "economic" prices have to be deducted in estimating the benefit of FDIs. Likewise, when FDI produces for a domestic market that is highly protected by import tariffs, the value-added that it creates in terms of domestic currency is much higher than its true worth in terms of foreign exchange (that is, at international prices).<sup>3</sup>

This is not to argue that FDI should not be given the benefit of any subsidized inputs or other incentives like tax breaks, but that these should be taken into account in assessing the benefit of FDI. There is a need to provide reasonable incentives to attract FDI. But, unless the benefit for the country is assessed in relation to "economic" prices, one cannot

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\* A report prepared at the request of the Board of Investment, Government of Bangladesh.

<sup>1</sup> GNI in any year excludes from GDP the repatriated incomes of foreign companies while GNP excludes the retained parts of those incomes as well.

<sup>2</sup> As in the case of social cost-benefit analysis of domestic investment projects, the net social benefit is the discounted present value of the future annual stream of net benefit to society, where "economic" or shadow prices are applied to all inputs and outputs and the discount rate reflects society's preference for current income to future income.

<sup>3</sup> Even the wage incomes generated through employment do not entirely constitute net social benefit; the loss of production elsewhere in the economy due to such employment (represented by the opportunity cost or shadow price of labour in the standard social-cost benefit analysis of projects) needs to be deducted. In a labour surplus economy like Bangladesh, the shadow wage is taken to be much lower than the market wage.

be sure that the proposed investment is genuinely profitable enough to result in a win-win situation.

Fortunately, not all FDIs require such detailed evaluation to see that the country is getting a fair deal. This would include FDIs that work within the market discipline, such as those in labour-intensive manufacturing industries catering to the export market or a highly competitive domestic market. The very fact that foreign investors are attracted to make such investments under market determined competitive prices is itself an indication of a win-win situation.

On the other hand, the economic benefit from FDIs that operate in a non-competitive domestic market is not self evident. These include the FDIs involving “administered” prices, such as under purchase or sale contracts with the government. Some of these FDIs, such as in electricity generation, may be potentially highly desirable because of their being in strategically important sectors; but their benefit depends on the terms of agreement regarding prices and other incentives. International competitive bidding can be a mechanism to ensure that an “exploitative” arrangement is not imposed on the country; but this is easier said than done.

Even a competitive bidding process does not do away with the need to determine whether the investment is at all genuinely profitable so as to be able to yield a win-win result. The problem is compounded by the fact that, for a country like Bangladesh having a poor international country-risk rating, the perceived risks of investment will be factored in while prospective foreign investors offer their bid. Also, in a perceived risky environment, foreign investors may have a too strong preference for getting their profits sooner than later, which may result in an overexploitation of exhaustible resources like minerals.

Another problem may arise from the fact that FDIs in the “non-tradable” sectors, such as in electricity generation, telecommunications or other infrastructure provision, do not directly contribute to earning or saving foreign exchange. True that these investments provide funds for making strategically important investments that may greatly contribute to overall economic growth. But the fact that there is no immediate involvement of the country’s resources may lead to the neglect of the problem created by too large future obligations for profit repatriation. In going for such FDIs, the implications for the long-term viability of the balance of payments should be taken into account.

In promoting the case for FDIs, some indirect benefits are often cited. While these benefits may be quite important, their nature needs to be properly understood in evaluating FDIs, particularly since these benefits are largely of an intangible nature. The following are three most commonly cited benefits in the context of Bangladesh:

First, beyond the direct economic impact, the investments may yield indirect benefits by creating jobs and promoting economic activities in other related sectors through the so-called forward and backward linkages – that is, by purchasing inputs (or outsourcing) and/or producing goods that are inputs for other activities. Whether creating demand for

other sectors is an additional benefit from FDI depends on the nature of production constraints in those sectors. In a capital-scarce and labour-surplus economy like Bangladesh, the expansion of most production activities is not constrained by demand deficiency, but by a lack of investment to create additional production capacity. However, there are many low-productivity labour-intensive activities, mostly services, which can easily respond to increased demand without much investment. The employment and incomes generated in this later way can be considered as a genuine spill-over benefit from the inflow of FDIs. As regards forward linkages, the benefit will depend on whether the FDI is for producing essential inputs for other activities that would not be otherwise produced because of lack of technical know-how or would be available only at a higher price, say, from imports.

Second, FDIs may save foreign exchange by producing tradable items – exports or import-substitutes. This will be an *additional* benefit depending on whether there is an effective balance of payments problem that constrains economic growth. In such a case, a taka worth of output that can be internationally traded will carry a premium over a taka worth of non-traded output – hence the likely benefit arising from FDI’s contribution to the balance of payments. Recent development experience in Bangladesh suggests that the balance of payments can indeed be a problem at times of accelerating economic growth.<sup>4</sup>

Third, the claim that an initial FDI may promote investor confidence and reduce the perceived country risks by future prospective foreign investors - hence the case for providing it some extra incentives. While this may be correct, an “unfair” deal may create future resentments and other problems that will do damage rather than promote the investment environment. The best way to improve the country-risk factor is to address the underlying causes rather than offer too generous concessions to foreign investors.

### *How to Evaluate Tata’s Proposal?*

Tata’s investment proposal is a complex one with several components. Of these components, the proposed urea plant is an entirely separate project with no link with the rest of the investment proposal; as such, its merit is better judged separately. This aspect is mostly blurred in the way the overall impact of the project on the Bangladesh economy is discussed in the report of the Economic Intelligence Unit (EIU) as well as in much of the documentation produced by Tata. The other part of the investment project is an integrated one involving steel production, power generation and coal mining. Even for this integrated project, the possibility of generating power by gas and thus leaving out the coal mining component may be kept open as an alternative, given the many unresolved issues regarding coal mining.

About the IEU report, it is mainly concerned with the likely economy-wide or macroeconomic impact of Tata’s investments; it has very little to say about the likely net social benefit of the project in terms of a cost-benefit analysis as discussed above. It does

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<sup>4</sup> See W. Mahmud, “Macroeconomic management: from stabilization to growth?”, *Economic and Political Weekly* (Mumbai), Sept. 4-10, 2004.

not deal with the key issues nor make any attempt to quantify the key variables that will directly determine the part of the project benefit accruing to Bangladesh - such as the pricing of gas and the future streams of wage incomes and tax yields generated from the project. Instead, the EIU report mainly dwells upon what may be called indirect project benefits, such as those arising from the impact on the balance of payments and from any backward and forward linkages. As noted above, these indirect benefits may be *additional* considerations in deciding on the desirability of the project, but these are not the basic ingredients for estimating the net benefit of the project. Even in estimating these indirect benefits, the EIU report does not often take into account some of the common caveats of such estimates, some of which have been mentioned earlier. We come back to these issues towards the end of this report, but for the time being, let us concentrate on the basics.

Steel production is highly energy-intensive, while urea production is a non-energy use of gas. According to the data available from Tata, the urea plant will produce US\$ 127 worth of value-added annually by using 0.04 tcf of gas (total of 0.8 tcf in 20 years). The value added from steel production will be US\$ 495 million annually against the annual use of 0.028 tcf of gas (0.7 tcf in 25 years.). If captive power generation for the steel mill is to use gas instead of coal, the total annual use of gas for steel production will be 0.033 tcf (0.825 tcf in 25 years).<sup>5</sup> Including power generation and coal production, Tata's total project, when in full operation, is estimated to generate US\$ 972 million value-added annually.

The critical importance of the pricing of gas in determining Bangladesh's benefit from Tata's investment can be readily seen from some aggregate figures. If the price of gas were to be reduced by US\$ 1 (which will be a subsidy if the real "economic" price of gas is taken as the benchmark), this will reduce Petrobangla's sale proceeds from this project by US\$ 68 million annually (by US\$ 83 billion if captive power were to be generated from gas). Against this, the direct benefit will include the part of value-added accruing to Bangladesh in terms of wages and salaries of local employees and the tax revenue of the government. The salaries are estimated to be US\$ 20 – US\$ 30 annually (the true social benefit may be half of this if we assume that the "shadow" wage rates representing the opportunity cost of labour in Bangladesh is half the market wage rate). This is a very low proportion of the estimated total value-added – about 2 to 3 percent. This is an implication of the fact that although the production processes in the various components of the project are highly resource-intensive, their labour-intensity is extremely low.

Tata estimates that the annual taxes payable after the tax holiday period will be approximately US\$ 120 million per annum. This would include mainly corporate tax on profit at the prevailing rate of 40 percent, and also royalties for coal mining and other indirect taxes (presumably net of various tax exemptions sought by Tata as part of the incentive package). Applying a time discount rate of, say, 8 percent annually, the above tax revenue can be estimated as equivalent annual revenue for a 20-year project life. This

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<sup>5</sup> This takes into account that half of the 1000 MW electricity produced by the power plant will be used as captive power for steel production. The 1,000 MW power plant will actually need 0.030 tcf of gas annually if it were to use gas instead of coal.

works out to be US\$ 38 million annually if we assume that the tax holiday is for the initial 10 years, but the amount rises to US\$ 63.5 million annually for a six-year tax holiday period.<sup>6</sup>

The above aggregate figures suggest some broad features of the benefit to be derived from Tata's investments:

- (a) If we consider the net benefit from the *direct* investment impact, this will be quite sensitive to the pricing of gas. While some amount of subsidy in gas sales (compared to the "economic" price of gas, see later discussion) may be accommodated, a large subsidy may easily make the net direct benefit negative.
- (b) The period of tax holiday can make a large difference to the net benefit, since tax revenues seem to be the main direct benefit from the investments.
- (c) Tata's projected profits from the investments seem to be large enough, particularly for the steel-power complex, so as to provide ample scope for bargaining in order to arrive at a fair win-win deal. There also thus does not seem to be any strong case for allowing tax-breaks or other incentives beyond what are allowed under the existing structure of incentives for such investments. Special incentives beyond the existing rules also create precedence for giving such incentives to other prospective investors.

The last point is a bit problematic because the information that is available from Tata's documentation and the EIU report is rather insufficient and, in some respects, also appear inconsistent. To make decisions regarding the separate components of the project (the urea project in particular), component-wise detailed information is necessary. There seems to be also very large discrepancies between the estimates of Tata's annual profits as implied by the annual tax revenue to be paid after the tax holiday period and as can be directly estimated from the annual value-added net of taxes and salaries (the later seems to be much larger). To help evaluate the investment proposal component by component and, thereby, negotiate the terms of contract, Tata should be encouraged to share more detailed information for each component.

### *Economic Price of Gas*

Gas is an exhaustible resource and it does not also have a global market like any other commodities that can be easily traded internationally. The determination of an "economic" price of gas therefore involves difficult conceptual problems (since market does not provide much guidance for it) and depends on country-specific circumstances.

One plausible way of conceptualizing the economic pricing of gas is by considering that the cost of using an extra unit of it now is the cost that will be incurred for importing an

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<sup>6</sup> These annual equivalent amounts are derived in several steps by using growth tables. These are quite different from the simple annual average, since revenue earned in a later year is worth less than that earned in an earlier year, depending on the time rate of discount. See the later discussion on the social rate of discount.

*equivalent* amount of fuel (e.g. fuel oil, coal or gas) when domestic gas will be exhausted. However, because of society's time preference of income (or money), the future cost needs to be discounted to convert it to its present cost equivalent. Three factors are thus crucially important for the determination of the present economic price of gas: (i) the predicted year of gas exhaustion, (ii) the projected import price of alternative fuels at that time, and (iii) the social rate of discount. For this report, we use a social discount rate of 8 percent per annum, which is admittedly arbitrary, but seems reasonable by the standard of social cost-benefit analysis.<sup>7</sup>

It should be noted that the idea of estimating an *equivalent* amount of fuel to replace, say, 1 mcf of gas is not a straightforward one. In the energy discourse in Bangladesh, the equivalence of energy from different sources is measured in terms of their heat generating capacity. This is not an ideal basis to determine the "economic price equivalents", which are those prices that would make the production costs equal for producing, say, one unit of electricity by using alternative fuels. Such price equivalence usually differs from the one derived from the purely physical concept of energy equivalence, depending on the relative efficiency and costs of alternative technologies associated with the use of different fuels. The concept of "economic price equivalents" (sometimes called "replacement equivalents") is a useful tool for energy planning, but not yet familiar in the energy discourse in Bangladesh.

To make some rough calculations, we estimate the equivalent price of imported fuels for replacing gas in the medium to long run to be US\$ 6 per mcf of gas.<sup>8</sup> For this we have taken into consideration several factors. The above price of gas roughly corresponds to the medium to long run oil price projections of around US \$35 - 40 per barrel of crude oil (notwithstanding the current price hike) converted by the conventional energy equivalent between gas and fuel oil. Another relevant factor is the existing prices of natural gas and fuel oil in countries such as Canada where both the energy sources are abundantly used for electricity generation; the assumption being that market forces would bring the relative prices close to "replacement equivalents". For example, the 2004 plant-gate price of fuel oil in Canada was US\$ 41 per barrel and that of natural gas US\$ 5.42 per mcf.<sup>9</sup> A third consideration is the current negotiations regarding the possible price of gas imported through pipeline in this region (such as by China or India from Myanmar); this price is likely to be nearly US \$5 per mcf.

According to some estimates, the country will run out of gas in ten year's time (by 2016) given the domestic gas demand projections along with the estimated "proven and probable" discovered gas reserves. Applying the annual discount rate, the implied present

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<sup>7</sup> The social discount rate depends on how far current consumption is preferable to future consumption and what will be the future returns from the part of current income that is invested. Since we are considering nominal dollar prices, this discount rate should also allow for any decline in the purchasing power of US dollar in the global markets.

<sup>8</sup> This price is at the domestic end-user level and should, therefore, include transmission cost of gas on the one hand, and the shipping costs and trade margins of imported fuels.

<sup>9</sup> Cf. Prices quoted in the publications of Canadian Association of Petroleum Products (CAPP).

economic price of gas works out to be US\$ 2.78, which would rise by 8 percent annually during the ten year period (after which imported fuels will replace domestic gas). It should be noted that the estimated present economic price of gas is highly sensitive to the assumed gas exhaustion year. Thus, extending the exhaustion year by 5 years and 10 years (that is, year 2021 and 2026) would reduce the current economic price to US \$ 1.86 and US\$ 1.28 respectively. If, on the other hand, it is assumed that the country will need to start importing fuel to partially replace gas even before the exhaustion year (because, say, the oil fields are not developed in time to meet domestic supply), then that will be the year when the economic price of gas becomes equal to the equivalent price of imported fuel. The projected economic price will also need to be revised whenever new information will be available regarding the domestic gas supply-demand scenario.<sup>10</sup>

While the economic price is projected to escalate annually under any given scenario, it is interesting to see what would be the equivalent price in a sale contract in which the price in dollar terms were to remain unchanged from year to year. This is not the simple annual average of the projected price, since paying a higher amount in the initial years is not the same as doing so in the later years (again because of the social discount rate). The annual price of gas in the above three scenarios of gas exhaustion in 10, 15 and 20 years works out as US\$ 4.14, \$ 3.31 and \$ 2.60 respectively. If we assume the replacement price of imported energy to be \$ 5, instead of \$ 6 as assumed above, these prices will proportionately change to US\$ 3.45, \$ 2.76 and \$ 2.13 respectively.

The above analysis shows the crucial importance of strengthening gas exploration efforts to determine the country's gas reserves, since such knowledge is essential for making long run plans for gas utilization. In all probability, Bangladesh has gas reserves to last a much longer time than is indicated by the currently available estimates of proven reserves. As the estimate of proven gas reserves increases, and provided enough investments are made in developing the gas fields to meet domestic demand, the estimate of economic price of gas will have to be revised downward. But prudent economic planning should not rely too much on risky assumptions. This is a fundamental problem in making commitments regarding the ensured supply of gas at a pre-determined price as is sought in Tata's proposal.

A conceptually less appealing but practical way of finding an economic price of gas would be to estimate the average cost of producing an extra unit of gas and then add a premium on it, the premium being the rent earned for the ownership of gas. Additional gas production in Bangladesh will come largely from the fields operated by the IOCs. The average cost of this gas would depend on the share that Petrobangla gets and the price charged by the IOCs for the remaining share. This will vary depending on the stage of the project life cycle (involving the cost-recovery phase) and between different PSCs as well as between off-shore and inland gas. The transmission cost will have to be then added to get the end-user gas cost. Rough estimates suggest that the average wellhead cost may be US\$ 2.00 to \$2.20/mcf in the cost recovery phase and \$ 1.24/mcf in the later phase. Averaging this and adding a transmission cost of \$ 0.20/mcf and a minimum premium of \$ 1.00 will work out to be around \$ 2.90.

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<sup>10</sup> The present use of imported fuel oil as liquid fuel is not considered as a substitute of gas use.

The estimation of economic price of gas is important not only for negotiating the terms of contracts for prospective FDIs, it has much wider implications for determining the most economically beneficial use of gas. It is “wasteful” to use an extra unit of gas for uses from which society gets benefit less than the economic price of gas. When it is argued that exporting gas can jeopardize the country’s energy security, it must be recognized that using gas wastefully for domestic use can equally do so. In particular, when long-run commitment is being made for supplying gas, such as in setting up a fertilizer factory, the social benefit from the investment involved needs to be assessed on the basis of appropriate pricing of gas (along with the option of importing fertilizer instead of producing domestically). Whether gas and fertiliser prices should be subsidized for the benefit of farmers, and by how much, is an altogether different issue.

Bangladesh has a history of subsidised gas supply. Almost 70 percent of the gas produced annually is sold to the state-owned fertiliser factories and power plants at a highly subsidised price of \$ 1 per mcf. The private power producers also buy gas at a subsidised price of \$ 2 per mcf. The joint-venture fertiliser factory, KAFCO, has been supplied gas at an average price of \$ 1.22 for ten years; only recently the price has been raised to \$ 2.34 which is also about the price now charge for industrial use of gas.

#### Gas Contract with Tata

What can we say about a gas supply contract with Tata on the basis of the above analysis? Overall, the present price of gas for industrial use (\$2.35 per mcf) does not seem to be highly misaligned from its true economic price; but it will need to be continuously adjusted upward if the estimates of gas reserves and the projected demand-supply scenario for gas remain unchanged. If the government commits to a gas price policy in which the price of gas will be revised from time to time keeping in view the gas reserve position and the projected cost of importing alternative energy, Tata may be offered gas at the prevailing price for industrial use. Or, such a price policy may be formulated for FDIs only (since the benefit of subsidy to local producers stays home) or for industries in which the use of gas as a proportion of value-added is higher than a certain level. There will then be no need for making special price deals with Tata for gas sale.

Tata wants some kind of guarantee for assured gas supply during the life of the project. This is problematic in many respects. What happens if the country runs out of gas? For understandable reasons, Tata would like to ensure that it is not discriminated against at times of temporary gas shortages or supply disruptions. The rationale behind Tata’s proposal lies in the belief that new gas reserves will be discovered (or coal will be available as an alternative energy source) so that no genuine gas shortage will appear during the lifetime of its proposed projects.<sup>11</sup> To the extent that there is a risk of that belief not proving correct, that risk should be fairly shared by both Tata and Bangladesh. One possible formula for that may be to estimate the proportion of the country’s total gas

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<sup>11</sup> Otherwise, investing in such gas-intensive production processes would not make much economic sense.

supply to be used by Tata at the beginning of its going into full production and ensure that Tata will continue to have a claim of that share at the minimum. In that way, as long as gas production does not decline, Tata will have nothing to worry. But there may be other workable formulas as well.

To create investor confidence under gas pricing and sale arrangements as discussed above, the gas exploration efforts must be strengthened. There is a problem in depending on the IOCs entirely for gas exploration. There is a large gap between high and low projections of domestic gas demand. The IOCs will tend to plan their exploration and gas-field development activities keeping in view the low demand projection, since they would like to be sure about getting quick returns from their investments through full-capacity production from the discovered fields. For this reason, it is important to strengthen the domestic capacity for gas exploration.

### *The Implication of Coal Mining*

There now seems to be a possibility that domestically mined coal may provide an alternative to gas as a source of energy. The availability of coal can lower the economic price of gas by deferring the projected date of gas exhaustion and also by providing an alternative to gas even before that date. Much will depend on coal production projections, the pattern of use of coal and the estimates of recoverable reserves. There will be a need for a comprehensive energy policy for making decisions regarding the use of gas and coal as competing sources of energy. A discussion on this would be premature for the time-being, given the many uncertainties regarding the economic feasibility of coal mining and the likely volume of production.

### *Indirect Benefits (and Costs)*

As indicated earlier, the investments may generate indirect or economy-wide benefits by providing balance of payments support and by boosting production in other sectors through the mechanism of forward and backward linkages. Some likely caveats in estimating these benefits were also mentioned earlier. Unfortunately, by ignoring these caveats and lacking any credible analytical framework, the EIU report ends up making exaggerated and unsubstantial claims about these benefits. This diminishes the value of the report, since it is these indirect macroeconomic benefits that are mainly dealt with by the report. This is not to ignore some substantial indirect benefits (as well as some costs) that may genuinely arise as a result of these investments.

The EIU report estimates that the additional electricity generating capacity of 500MW (in addition to captive power for the steel mill) will translate into 0.1-0.2 percentage point higher GDP growth. In addition, the direct contribution to GDP would be equivalent of 1.9 percent of nominal GDP annually, which in turn would lead to even higher GDP through an estimated “multiplier” of around 1.5. The multiplier of 1.5 is meant to imply that the expected annual gross sales of about US\$ 1.8 billion from Tata’s operations will

lead to additional production worth about US\$ 800 million per year through the purchase of inputs.

Attributing the above benefits to Tata's operations is based on rather naïve assumptions. The "multiplier" effect (that is the spill-over effects of the investments working through demand linkage) is estimated in the report by a simple-minded application of the so-called input-output analysis. As mentioned before, much of this multiplier effect cannot be attributed as *additional* contribution of Tata's investments towards GDP growth, since the expansion of production activities in an economy like Bangladesh is generally constrained by lack of inadequate production capacity rather than by demand deficiency. As regards the direct impact on the economy, the report refers to GDP instead of GNP or GNI, and thus ignores the all important issue regarding how much of the value-added generated will be repatriated as profits. Curiously, this is also ignored while assessing the impact on the balance of payments.<sup>12</sup>

There will be of course some demand-driven expansion of activities in sectors where employment can be created with very little investment in fixed capital. Such employment will be mainly in service sectors – such as the employment created in and around the township that will grow around the steel mill. The quantification of employment and incomes generated in this way will require a much more discriminating application of the input-output analysis than is attempted in the EIU report.

Tata's operations will create demand for infrastructure provision than can in fact lead to costs to be incurred by the government instead of being a source of large indirect benefits as claimed by the EIU report. In particular, there will be an increased demand on railway transportation for the import of iron ore and the export of steel and coal. This will need substantial investment in railway infrastructure, along with improvement in management efficiency to ensure that such transportation does not incur losses for the government. The viability of the investments will also depend on the tariffs charged, given the fact that the public transport systems, including railways, are heavily subsidised in Bangladesh.

The benefit from steel production will in fact come more from forward than backward linkages. Tata's project will produce about US\$ 1 billion worth of steel annually, 75 percent of which will be exported after meeting the country's entire domestic demand. Because of the shift from the current import regime to an export regime, the domestic price of steel will be lower; since it will be related to the export price rather than the import price.<sup>13</sup> There are a whole range of industries and construction activities that will get a boost directly or indirectly from the cheaper supply of steel, and the benefit will increase with the growth of steel-based industries in the country. Although some existing

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<sup>12</sup> As for the contribution from electricity generation, the growth of GDP will no doubt require an increase in power generating capacity; but there is no reason to believe that in the absence of Tata's investments, there will be no alternative investments to meet the economy's power demand or that electricity generation alone will lead to higher production growth without investments in the respective sectors.

<sup>13</sup> This is likely to be so even after taking account of the tax on domestic production (VAT).

facilities for steel production, mostly from scraps, may be adversely affected, this will be much more than compensated by the benefit.

A major benefit from Tata's operations will be the balance of payments support provided through net exports (estimated at US\$ 628 million annually) and import substitution of (US\$ 300 million annually). The extent of net contribution to the balance of payments will of course be much lower because of the repatriation of profits; and it will also depend on whether the proposed investment package is fully implemented or some components are left out.

### Land Acquisition

The implementation of Tata's proposed projects will need land acquisition and resettlement of residents and the construction of road links to the plants. Agreement will be needed about how Tata proposes to pay for the costs involved. While Tata has proposed to buy the land at market prices, an alternative would be for the government to incur the entire costs and to recover it through renting or leasing the infrastructure to Tata. Land being the scarcest resource in Bangladesh and as it becomes even scarcer with the growth of economic activities, land prices tend to increase quite rapidly in real terms. Thus, buying land and even keeping it idle may prove a profitable investment. The sale of land to foreign investors could thus lead to windfall gains to them at the time of winding up the investment project.

### Conclusion

Detailed data on the project profile are required for a more rigorous evaluation of the project, component by component. On the face of it, the steel-power complex appears promising, since it combines the advantage of the availability of iron ore and energy resources in India and Bangladesh respectively; however, many strategic issues need to be resolved, particularly regarding infrastructure provision, land acquisition and the feasibility of coal mining. The issue of gas pricing is the key to the determination of Bangladesh's net economic benefit from the investments. In fact, the economic viability of the fertiliser project may depend largely on subsidised gas supply, particularly when the investment returns need to cover the country-risk factor as perceived by the foreign investor. In making a decision, any subsidy in gas pricing must be compared with the estimated benefits from the investments.