

De-risking as an anti-collusion strategy in Bangladesh's power sector

Mushtaq Khan, Mitchell Watkins
SOAS University of London, Anti-Corruption Evidence (SOAS-ACE)



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Key messages

- Private investments in power in developing countries involve high levels of risks for investors. Without a de-risking strategy, the risk-adjusted price of power is likely to be too high for many consumers.
- Some subsidy designs that reduce prices for consumers can make matters worse by further increasing investor risk. If a public distributor buys power from plants and sells at a lower price, plants without political connections may perceive higher risks. They may exit from bids, allowing collusive price setting and much higher prices.
- But other subsidy designs like direct subsidies enable generators to reduce their prices and mitigate risks for unconnected investors. Bidding may then become more competitive with power prices falling, and cleaner technologies delivered.
- In Bangladesh, indirect subsidies to power generators through the distributor resulted in a rapid increase in generation prices due to collusive pricing and dirty technologies. Subsidies to the distributor went up to around US\$1 billion by 2019.
- However, at the same time, plant-level evidence from 58 private plants from 2008 to 2016 shows that relatively small direct subsidies resulted in a 62% reduction in plant-level prices relative to otherwise similar plants.
- The subsidies that had this effect were contestable direct subsidies potentially available to any investor meeting relevant conditions in a bid. Examples include low-cost finance and partial risk guarantees from international financial institutions (IFIs) or low-cost public land for projects. They worked by mitigating risks for potential investors, increasing competition, and resulting in significantly lower prices and improved environmental quality.
- As contestable direct subsidies had a significant effect in an otherwise adverse context, they are a feasible anti-corruption instrument for reducing collusion in power pricing, and reducing the corruption that subsequently emerges to distort the allocation of orders and fuel to high-cost plants.

What is ACE?

The Anti-Corruption Evidence (ACE) research consortium takes an innovative approach to anti-corruption policy and practice. Working with a multi-country coalition of 12 partners over five years, ACE is responding to the serious challenges facing people and economies affected by corruption by generating evidence that makes anti-corruption real and using those findings to help policymakers, business and civil society adopt new, feasible, high-impact strategies to tackle corruption.

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SOAS University of London

www.ace.soas.ac.uk
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Introduction

Collusive contracting with private power plants in Bangladesh has resulted in high power prices that cost the taxpayer around US\$1 billion a year in indirect subsidies to power plants through the power purchaser/distributor, as well as the use of environmentally damaging fuels and technologies. Furthermore, plants with higher prices are often prioritised in dispatch orders and supplies of fuel by the power purchaser, perhaps because their high mark-ups allow them to corruptly influence decisions.

Private investors in power generation in developing countries typically have high risk perceptions in contexts of weak contract enforcement. They have to lay out large sums up front and recover returns over long periods based on contracts underwritten by the government. In high-risk environments bidders without close connections to government stay away, leaving the field to connected companies generating overpriced power using dirtier technologies. Strengthening the rule of law can improve the risk environment, but these improvements take a long time to achieve and intermediate solutions have to be found in the meantime.

This briefing paper summarises our analysis of the effects of different risk mitigation strategies on the price of private generation in Bangladesh (Khan et al., 2020). We put forward a solution using contestable direct subsidies – in particular lower-cost finance and partial risk guarantees – to reduce risks for potential investors regardless of their connections, thereby enhancing competition. This is an effective method of reducing the price of power generation, improving the environmental quality of new investment, and reducing corruption in the sector.

Types of de-risking strategies

Governments need to provide subsidies in high-risk contexts to mitigate risks and achieve much lower prices than would otherwise have been possible. While well-designed subsidies can, in principle, de-risk investments sufficiently to attract competitive investors, badly designed subsidies can significantly raise the price of power by deterring competition.

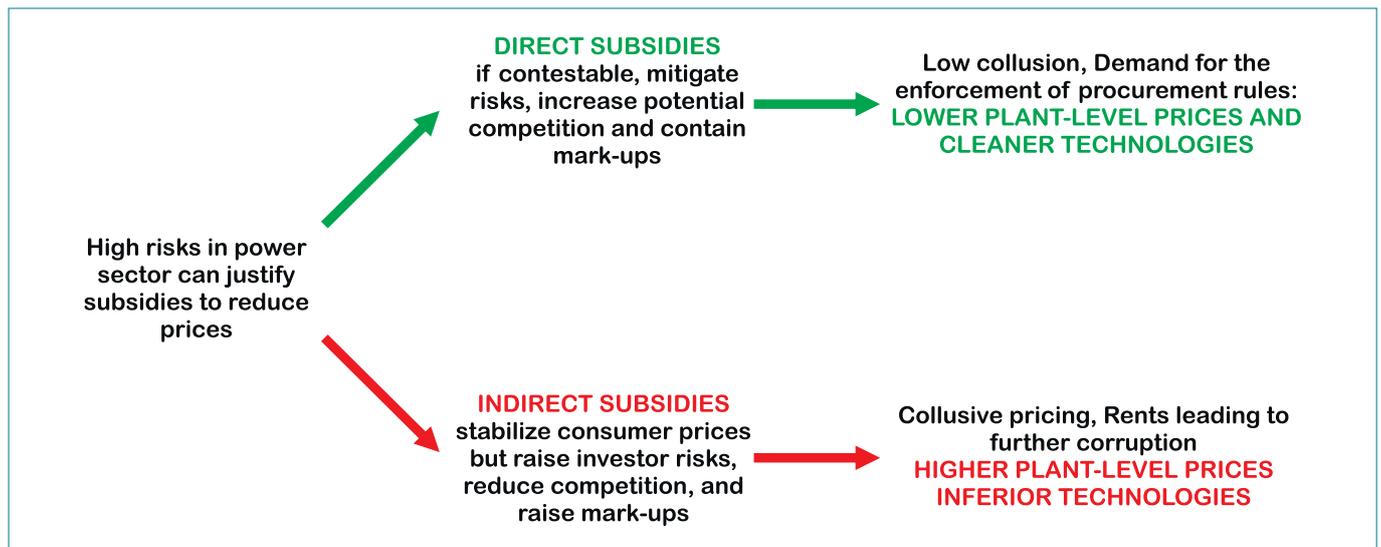
A *competitive de-risking strategy* is one that reduces risks for any potential investor in a bid to a level where the bid becomes contestable and collusive pricing is not possible. The result is an enhanced investment flow, lower prices, and the ability to set higher technological and environmental standards.

A competitive de-risking strategy that is feasible in high-risk environments is to provide *contestable direct subsidies* at the time of bidding that cannot be easily changed or withdrawn later by government action. Examples include financing at preferential rates, partial risk guarantees and leases on government land. In order to generate competition, subsidies must be potentially available to any competitor meeting the technical conditions of the tender.

In contrast, *collusive risk-mitigating strategies* are where governments reduce the risks of particular investors through close negotiations with them. Such investors are likely to be politically connected private companies or public-sector companies from countries with close political relationships with the government. Collusive risk-mitigating strategies can drive investments by offering attractive terms in direct negotiations. However, the absence of competition makes it more difficult to contain costs or to specify better technologies. The potentially higher mark-ups in these contracts may be partially or fully offset with indirect subsidies from the government to the power purchaser to make power affordable to consumers. But the indirect subsidies have to be much greater to compensate for the significantly higher generation prices. The higher mark-ups also increase the risk of rent-sharing arrangements with public officials that result in further distortions, for instance in order allocations.

Figure 1 summarises the theorised relationships between direct and indirect subsidies, prices and collusion in the power sector in high-risk environments. We predict that if direct subsidies are just large enough to reduce risk to a level that attracts unconnected bidders, plant-level prices will be substantially lower – much lower than can be directly attributed to the subsidies alone. Bidders will demand the enforcement of procurement rules making it more likely that rules are enforced.

Figure 1. Subsidies, risks, collusion and corruption



Source: Khan et al. (2020)

Private power supply in Bangladesh

The case of Bangladesh demonstrates that contestable direct subsidies can have competitive effects and that indirect subsidies can support collusive outcomes.

In the late 1990s and early 2000s, the first two private power projects in Bangladesh at Meghnaghat and Haripur achieved some of the lowest independent power producer prices in South Asia (Pargal 2017: 4). These projects received preferential financing and partial risk guarantees from international financial institutions (IFIs) including the World Bank and the Asian Development Bank. The projects also received land lease arrangements that freed investors from significant costs of acquiring land. These subsidies not only directly reduced the cost of the project, they also reduced the perception of risk, with a much bigger impact on project cost through competitive effects.

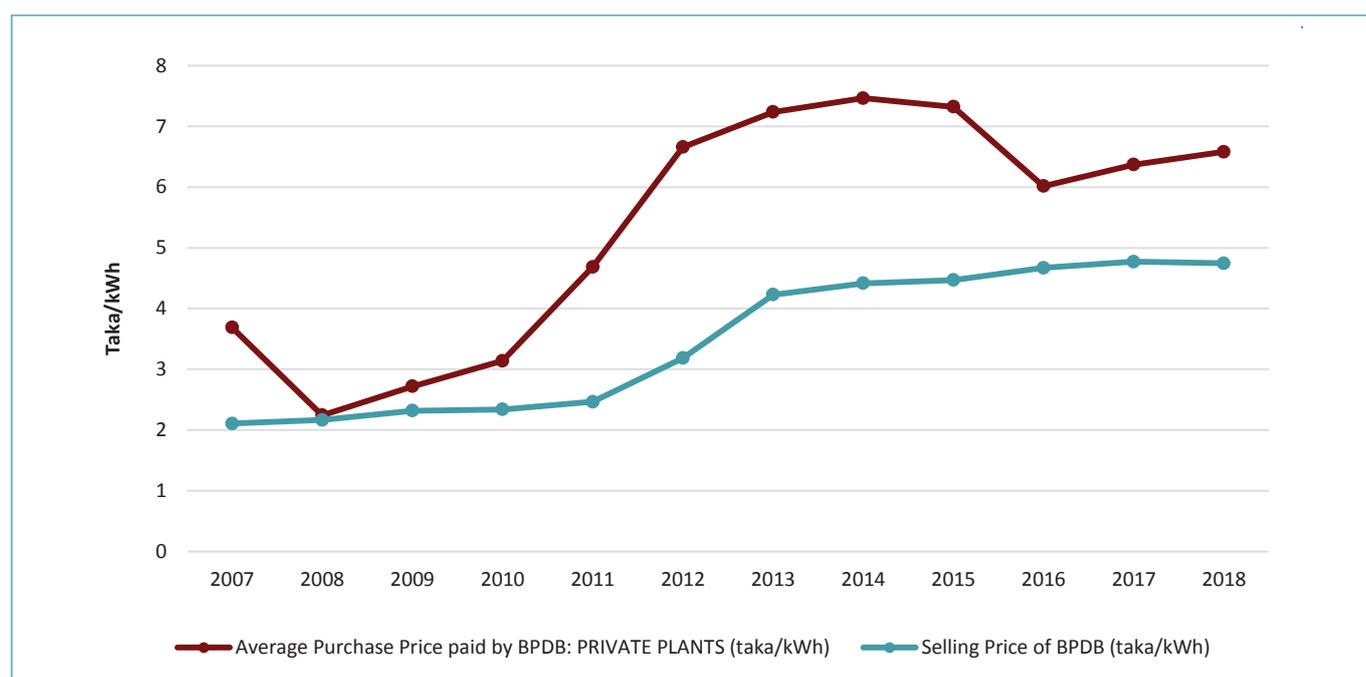
Unfortunately, the role played by competitive risk-mitigating subsidies in supporting pricing was not fully understood. These subsidies were largely withdrawn and were only available sporadically in a few projects later on. This coincided with and arguably contributed to a drying up of investor interest in power projects by

the late 2000s, which resulted in a severe power crisis. The only interest came from politically connected companies; and lobbying by competing groups blocked or delayed contracts.

In the face of this crisis, the government passed the *Speedy Supply of Power and Energy Act* in 2010, which enabled power projects to be implemented without competitive tendering. The new risk-mitigation strategy that emerged was based on the close involvement of the government in selecting investors and closed-door negotiations. The strategy rapidly raised capacity but at a high cost of collusive price setting and much higher indirect subsidies.

The average price of private electricity generation more than doubled from 2010 to 2018. Not only were selling prices much higher, but there was also a significant increase in the use of dirtier fuels like diesel and furnace oil. The growing gap between the Bangladesh Power Development Board's (BPDB) buying and selling prices resulted in a substantial operating deficit that was covered by transfers from the exchequer, which were effectively indirect subsidies to expensive plants. The BPDB's annual deficit exceeded US\$1 billion in 2015 and 2019, drawing into question the fiscal sustainability of the subsidies.

Figure 2. BPDB buying and selling prices for private-sector plants



Source: Source: BPDB

Not surprisingly, the steep increases in prices led to evidence of rent-sharing arrangements. For example, gas-fired plants with higher contracted prices received more orders than cheaper ones, which cost the taxpayer US\$1.4 billion through this misallocation alone (Nikolakakis, et al. 2017). Higher-priced power plants were also systematically allocated subsidised fuel in preference to cheaper plants whenever there were shortages (Zhang, 2019).

The evidence

To test the effect of direct subsidies on the price of private electricity generation, we collected plant-level price data from the BPDB for 58 private power plants in Bangladesh from 2008–2016. The data also contains technical information on plant age, capacity and the type of fuel used, as well as the different types of direct subsidies received by each plant. The two direct subsidies that satisfy our conditions of being contestable were: 1) the provision of lower-cost finance or partial risk guarantees from IFIs and 2) the provision of leases on government land for a project. We classify IFI support as a contestable direct subsidy. However, we do not classify land leases as a contestable subsidy on their own: if a land lease is available to a politically connected firm then

unconnected firms may not be able to contest it; but if land leases are combined with IFI support, the package of direct subsidies becomes contestable.

The results from our empirical analysis indicate that when IFI support is combined with land leases, there is a 62.1% reduction in plant-level prices, adjusting for fuel type, generation capacity and age. We also find that IFI support on its own reduces plant-level prices by 18.5%. In contrast, land leases on their own have no significant effect on plant-level prices.

Across all projects, the direct economic value of financing and land lease subsidies can plausibly explain a lower generation cost per unit of electricity of at best between 5% to 10% in the plants that received them. Therefore, the much greater reduction in actual plant-level prices that we observe in these projects has to be explained by factors such as their effect on risk-reduction, which helped induce competitive pricing behaviour.

The ACE solution

Different types of investors – depending on their political connections – perceive the risks associated with payments from a loss-making public purchaser

very differently. The more their payments depend on transfers from the exchequer to the purchaser, the greater their risk, and the greater still if they are unconnected companies. By understanding the differences in the risk perceptions of different types of investors, feasible changes in policy can increase the probability that unconnected investors become potential entrants, creating competitive pressures to contain mark-ups, prices and corruption. This is an application of the anti-corruption strategy that we described as 'designing for differences' in Khan et al. (2019).

Our search for feasible policy in this difficult sector was driven by an understanding of the interests, capabilities and relative power of relevant stakeholders in the sector in Bangladesh. Interestingly, many powerful private companies in the sector have plants that received direct subsidies and others that did not, and the same company has offered different prices across plants reflecting the competitive environment in which prices were set. There is no evidence that the provision of lower-cost financing, together with government land leases, was ever opposed on the grounds that they enhanced competition. This suggests that the lower prices set in these tenders were still profitable enough for powerful players. However, in the absence of any interest from unconnected investors, connected companies did not hesitate to set collusive prices. Broadening the availability of contestable direct subsidies to more or all projects may therefore work to change the behaviour of existing players in a more productive direction.

Conclusion

Contestable direct subsidies are an effective risk-mitigating strategy that reduces prices and collusion in the private power sector. Using evidence from Bangladesh, we show that a combination of IFI support and land leases dramatically reduced the price of

electricity generation from private power plants. In the absence of these direct subsidies, collusive relationships between business and government emerged. Prices rapidly increased, and the rents generated supported further corruption that drove anomalies in dispatch orders, the preferential supply of fuel and the preferential renewal of contracts.

The optimal level of direct subsidies will depend on country- and time-specific risks and how the existing system of price-setting operates. The relevant point for policy is that direct subsidies are an effective tool for reducing power prices by attracting multiple bidders or creating a context of potential entry. Because contestable direct subsidies can reduce prices by much more than the value of the subsidy, we argue that they can be regarded as public investments with a high social return.

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About the Anti-Corruption Evidence (ACE) Research Consortium:

ACE takes an innovative approach to anti-corruption policy and practice. Funded by UK aid, ACE is responding to the serious challenges facing people and economies affected by corruption by generating evidence that makes anti-corruption real, and using those findings to help policymakers, business and civil society adopt new, feasible, high-impact strategies to tackle corruption.

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Anti-Corruption Evidence (ACE) Research Consortium

SOAS, University of London, Thornhaugh Street, Russell Square, London WC1H 0XG

T +44 (0)20 7898 4447 • E ace@soas.ac.uk • W www.ace.soas.ac.uk