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Questioning the "Phenomenal Success" of Aadhaar-linked Direct Benefit Transfers for LPG

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The Aadhaar-linked Direct Benefit Transfer scheme for reducing leakages in Liquified Petroleum Gas (LPG) subsidies has been widely advertised as a phenomenal success and has been used to promote Aadhaar and DBT in other spheres by prominent government officials. However, analyses of various studies and data shows that the government's tall claims of savings cannot be confirmed and leaves much to be questioned.

Since the 1991 reforms, one of the major objectives of the government's economic policy has been to rationalise and reduce the expenditure on subsidies. According to the *Economic Survey 2015–16*, the Indian government spent 4.2% of its gross domestic product (GDP) on subsidies, which it intends to reduce to 1%. This is being done by eliminating certain subsidies, reducing the scope and extent of some, targeting to a narrower population and reducing leakages through better administration. Direct Benefit Transfer (DBT), or the transfer of subsidies directly to the beneficiary bank accounts, along with using Aadhaar/Unique ID as the identification proof, has been promoted as the silver bullet to reduce leakages in subsidy administration.

The Aadhaar-linked DBT scheme for reducing leakages in liquefied petroleum gas (LPG) subsidies is the first full-scale cash transfer programme via DBT. The flagship program has been widely advertised as a phenomenal success and has been used to promote Aadhaar and DBT in other spheres by various prominent members of the government (Panagariya 2016).

However, the limited evidence of potential savings in LPG does not match these tall claims and leaves several questions unanswered about the extent and mechanism of savings through DBT. Even if reduction in leakages in LPG subsidies turns out to be substantial, the government should be especially careful about extrapolating this impact to other subsidy programmes like the Public Distribution System (PDS) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The context and use of DBT differ significantly across different programs for the "success" to carry over.

LPG usage is mostly urban, is centrally administered by a few companies through a fully computerised list of beneficiaries and does not need biometric verification; which makes it more conducive for DBT. On the other hand, PDS and MGNREGA are more rural-based, managed through

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multiple agencies with only partial computerisation of user lists and need repeated biometric verification, making the use of DBT far more challenging. The *Economic Survey 2015-16* acknowledges some of these issues, but the government has begun the process of extending DBT to kerosene subsidy and PDS without due diligence.

In recent months there has been a vigorous debate on the impact of DBT for LPG (George and Subramanian 2016). The debate is a welcome step, but most analyses have left critical questions unanswered, and the widely quoted estimates of savings do not stand to scrutiny. The estimates of the potential impact vary: from an estimated 24% reduction in subsidies by the *Economic Survey* to that of less than 3% according to the International Institute for Sustainable Development (IISD).

A recent audit by the Comptroller and Auditor General of India (CAG) of the PAHAL–Direct Benefits Transfer for LPG (DBTL) scheme concludes that more than 90% of decline in subsidies can be accounted for by the fall of crude prices and only ₹1,763 crore out of the total reduction of ₹23,316 crore was due to reduced offtake of cylinders by consumers. To be certain about the level of impact and "phenomenal success" of DBTL and to extend it to other spheres, more research and analysis is needed, along with a transparency in data and methods used.

Evaluating Aadhaar-linked LPG

Over the last few years, subsidies on diesel and petrol have been gradually eliminated, but LPG still remains heavily subsidised. The *Economic Survey* estimates that the effective subsidy rate on LPG is 86%. According to the Ministry of Petroleum and Natural Gas (MoPNG), the government provided an average subsidy of ₹173 per cylinder in the first six months of 2015–16 (April–September 2015) totaling approximately $1.4 billion.

Differential pricing across sectors leads to leakages as well. In India, public sector oil marketing companies sell LPG to households and to the commercial sector through a distributor network. Commercial establishments and households consuming more than 12 cylinders in a year have to buy LPG at unsubsidised prices. Commercial establishments have to additionally pay central and state taxes of about 25%–30% on an average. Because different prices exist for the same product, dealers create ghost LPG accounts and divert subsidised LPG cylinders into the black market which are then sold to commercial establishments.

The belief behind Aadhaar-linked DBT is that technology can help states with low administrative capacity to efficiently curb diversion of subsidy. In the DBT scheme, consumers have to register their Aadhaar-linked bank accounts with their LPG distributor. Consumers pay the full cost of LPG to the distributor and the subsidy is transferred directly to their bank accounts (supposedly, before the next

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refill). This does not restrict or target the subsidy, but only changes the mechanism through which subsidy is delivered to the end user.

Having an Aadhaar-linked bank account is mandatory to access this subsidy. The idea is that this change increases the chances of identifying and eliminating ghost or duplicate LPG accounts.

The few studies investigating the effectiveness of DBT for LPG have reached contradictory conclusions and do not clarify important issues. The *Economic Survey 2015-16* claims that DBT was responsible for reducing LPG subsidy by 24%, while a study by Prabhat Barnwal (2015) found a more modest impact of 11%–14%. Both these studies evaluate the DBT scheme introduced (and abruptly terminated) by the United Progressive Alliance government from September 2013 to February 2014 by comparing the change in usage of LPG in DBT districts with the change in usage in non-DBT districts.

Based on publically available data, the IISD's policy briefs claims that the savings for 2015-16 would be ₹120 crore against the ₹14,672 crore estimate mentioned by the finance minister in Parliament (Clarke 2016). These claims have been reported extensively in both national and international media and used as a justification to extend Aadhaar and DBT to other spheres. However, none of these studies help in bringing clarity to the extent and mechanism of savings, leading to unreasonable extrapolation in the political narrative and in the media.

This article aims to bring clarity to the debate by raising questions that are critical to understanding the true impact of DBT on subsidy reduction but which have been insufficiently addressed. After having reviewed all publicly available research and data about the Aadhaar-based DBT scheme, and having communicated with several researchers with different viewpoints on the debate, four major questions surface:

1. Is the recorded impact of Aadhaar-linked DBT due to elimination of ghost accounts or is it because of exclusion of genuine beneficiaries?

Exclusion errors could be an important driver of reduction in subsidised LPG usage. For a household to benefit from LPG subsidy under the DBT scheme, they have to open a bank account, link it with their Aadhaar number and register the same with the LPG distributor. In the initial few months after DBT was made mandatory, some genuine households might have not been able to complete the requirements and thus would have been excluded from receiving LPG subsidy.

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Both Barnwal (2015) and the *Economic Survey* find a sharp drop in subsidised LPG sales in the first month after the enforcement of DBT. This fall recovered substantially over the next few months, possibly as exclusion errors declined over time. Barnwal finds that even after DBT was made compulsory, not all genuine households were initially enrolled in the programme. For six months after the start of the programme, about 20% of households complied with DBT requirements.

However, none of these studies quantify the extent of exclusion errors or account for them, without which the true impact of DBT is uncertain. Both Barnwal (2015) and the *Economic Survey* argue that exclusion errors do not play a big role in the estimates. They argue that households which do not comply with LPG requirements are likely to be rich households or ghost accounts. But this does not quantify the extent of exclusion errors which are bound to exist in a new scheme, especially in the first few months (George and Subramanian 2016).

The claims of no significant exclusion would have been more convincing if the studies provided results which excluded the first few months of data from the analysis—assuming that exclusion is resolved after few months in most cases. Exclusion errors will invariably lead to overestimation of the impact of DBT, and like in other impact evaluation studies, additional parallel household surveys would have helped ascertain the extent of these errors.

Without getting a handle on the exclusion errors, it remains unclear whether the reduction in subsidised LPG consumption is due to genuine households being left out or because of elimination of ghost accounts.

2. How much does Aadhaar contribute in reducing subsidy in the DBT programme?

Present analyses of the impact of DBT do not examine the individual effect of each of its mandatory components—the bank account and the Aadhaar requirement—which would help in identifying the mechanisms of impact. Most of the impact could have potentially come only by transferring the subsidy to a non-Aadhaar linked bank account, as it would help in identifying ghost accounts.

Dealers can create ghost accounts and divert LPG cylinders to the black market relatively easily when LPG is provided to households directly at a subsidised price. Introducing the requirement of bank accounts separates the subsidy transfer task from the dealer and hence they cannot directly create ghost accounts. The process of creating ghost accounts now involves a separate set of actors. LPG dealers can still collude with bank employees on the matter of verifying identity, create ghost bank accounts, and then pocket the subsidy.

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Aadhaar might be useful in preventing the latter, but Aadhaar itself is not ghost proof. Two individuals living at the same household address with different Aadhaar numbers can collude with the dealer or the delivery person to create one genuine and one ghost LPG account. Aadhaar is not helpful in identifying this type of a fraud. None of the studies mentioned above attempt to decipher the separate impact of bank accounts and Aadhaar.

Identifying the separate impact of bank accounts and Aadhaar is important because the usage of Aadhaar raises other concerns that should be evaluated against its benefits before beginning its widespread usage. These include loss of privacy, increased risk of government surveillance and security risks. While aspects of privacy and surveillance regarding Aadhaar have been discussed in depth (Ramkumar 2010; Drèze 2016), the security risks have received lesser attention.

Storing and providing biometric authentication services for over a billion people through a centralised agency increases the risks of malicious hacker attacks. A single successful hack might lead to the theft of the identity information, as shown by several recent international attacks (Khandelwal 2015).

The recent version of DBT introduced by the National Democratic Alliance (NDA) government, called PAHAL, does not make Aadhaar mandatory for subsidy transfer to bank accounts. Studies could include an analysis of the impact of DBT in districts with varying levels of penetration of Aadhaar to help ascertain the marginal effectiveness of using Aadhaar in the DBT scheme.

3. Why do the estimates for savings differ vastly across studies?

The estimates of savings vary substantially across studies and the methodology is not always transparent. Barnwal (2015) and the *Economic Survey* use similar methodology and data to estimate the impact of Aadhaarlinked DBT on subsidy reduction, but report different levels of savings. Barnwal (2015) estimates a reduction of 11%–14% in domestic subsidised cylinder usage using individual transaction-level data and about 13%–17% using aggregated distributor-level data. The *Economic Survey* reports a reduction of 24%.

These are substantial differences as it would translate into potential savings between ₹5,820 and ₹9,000 crore using Barnwal's estimates as opposed to ₹12,700 crore as reported in the *Economic Survey*. It is difficult to ascertain the exact reason for the differences as the data, method and regression used for the Economic Survey estimates are not reported. One of the potential reasons for

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the discrepancy might be different sources of data , but the discrepancy is too large to be completely accounted for by this alone. The picture would have been clearer if the authors of the *Economic Survey* had released a working paper detailing the exact data, method and regressions used in the analysis.

In contrast to other studies, the IISD estimates almost no savings from Aadhaar and raises several pertinent issues, but their analysis is not directly comparable with the other studies. IISD claims that in the fiscal year of 2015-16, the maximum savings possible due to Aadhaar would only be ₹121 crore while duplicate accounts found due to Aadhaar will be 1%. This is based on data on the number of ghost accounts identified and quarterly LPG subsidy data released by the MoPNG. They attribute a substantial reduction in the number of ghost LPG connections to a simple list-based de-duplication exercise carried out by the public sector oil companies.

Based on government-submitted affidavits to the Supreme Court, IISD notes that the number of ghost LPG accounts is less than 2%. But IISD's analysis cannot be compared with other analyses, since they only use aggregate data and do not use beneficiary- or distributor-level data. Aggregate data might be impacted due to various trends that are difficult to separate. Nonetheless, IISD's analysis does raise key issues that have not been addressed fully.

4. If diversion is reduced, why have sales to the commercial sector not increased?

Change in subsidised LPG usage in the domestic sector because of reduced leakages should be matched, at least partially, by an increase in commercial sales. This is not observed, raising further questions about the impact of DBT. The Aadhaar-linked DBT programme claims to reduce leakages in subsidised LPG cylinders, which were earlier diverted to the black market and sold to commercial establishments. The reduction in supply of diverted LPG would lead to increase in prices in the black market and some decrease in demand in the commercial sector. But at least part of the decline in leaked cylinders has to be compensated by an increase in commercial sales by the distributors. But over the period of the programme, Barnwal (2015) finds no substantial change in commercial sales, and the *Economic Survey* finds an increase of only 6% of commercial sales, as opposed to a decrease of 24% in domestic sales.

This discrepancy has been explained by suggesting that stockpiling might have taken place before the start of the DBT scheme. However, the months preceding the policy do not show any evidence of increase in sales of subsidised cylinders. Another possibility suggested by the Economic Survey is that sales of non-subsidised cylinders to the domestic sector have increased. But this claim would have been more convincing if the Economic Survey had provided evidence to support it. In addition, on abrupt termination of the policy, Barnwal (2014) finds an increase of domestic sales by 6%–7.5% and decline in commercial sales of 6%–9%. These numbers suggest that rather than the 24% subsidy reduction put forth by the Economic Survey, the actual impact might be closer to one-fourth of that

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(6% or so).

Aggregate data from the MoPNG also raises questions on the extent of impact of DBT. The share of domestic consumption in total LPG consumption in the first six months of 2014–15 and 2015–16 (before and after DBT–PAHAL) remains relatively stable, having changed from 89% to 88%. If DBT was successful in reducing ghost accounts by a quarter, the share of domestic consumption should go down substantially and share of commercial consumption should have increased. It is only if the domestic sector grew at a far higher rate than the commercial sector would it be possible to negate all the decrease in consumption, which might happen partially but not completely. Other Mechanisms to Reduce LPG Subsidy There are several other ways of targeting and reducing the regressive LPG subsidy , which might be administratively easier and less controversial. A proposal which was partly implemented and then withdrawn by the previous government of capping the number of subsidised cylinders is one option. Fifty percent of households use only seven or fewer subsidised cylinders every year (Lahoti, Suchitra and Goutam 2012). Currently, households can receive subsidy on up to 12 cylinders per year. This cap on the number of cylinders could be gradually reduced to 6–7 cylinders, which will go a long way in reducing the subsidy and its regressive nature (similar to the phased elimination of the diesel subsidy).

In addition to reducing leakages because of the reduction of the number of cylinders which can be diverted after genuine usage, this option would lead to efficiency, as overall usage would reduce when consumers have to pay the full price after the lowered cap is breached. Unfortunately, even though this option is the easiest to administratively implement, it has not got much political traction.

Another way to reduce the cost of LPG subsidy is to exclude high-income earners from the LPG subsidy scheme. The government has introduced the “give-it-up” campaign, where people voluntarily decide to give up LPG subsidy. Only 7% (1 crore households among 15.34 crore LPG connections) have voluntarily given up the subsidy, even though most LPG subsidy beneficaries belong to the top 20% of society. Instead of keeping it voluntary, the government should make it compulsory for people above a certain income threshold. A recent step in this direction is the initiative to identify households with income greater than ₹10 lakh and exclude them from the LPG subsidy. This limit could be lowered over time.

One additional step is to reduce or eliminate the tax differential between commercial LPG and non-subsidised domestic cylinders, which currently averages 25%–30% . This will reduce any diversion of non-subsidised domestic cylinders to the commercial sector.

Conclusion

Studies evaluating the DBT scheme are useful and important. Given the limitations of data and methods, these few studies cannot conclusively provide answers to all relevant questions.

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Nonetheless, the current sets of estimates are shaky and leave several questions unanswered, preventing any certainty about the extent and mechanism of the impact of the DBT programme. The level of exclusion errors, marginal impact of Aadhaar in DBT, and various inconsistencies in the results need to be addressed before celebrating the "success" of DBT for LPG. The government should be cautious while extrapolating the uncertain results of DBT in LPG and introducing Aadhaar requirement or even DBT to other schemes.

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