

ECONOMIC ANALYSIS

A. Introduction

1. The analytical framework for determining efficient and sustainable use of resources is based on relevant ADB publications, including *Guidelines for the Economic Analysis of Projects* (1997).

B. Economic Analysis of ADB's Program Loan for the Punjab Development Finance Program

2. Economic evaluation reveals that the Government of Punjab (GOP) suffers from fiscal constraint due to the following reasons:

- (i) **Expenditure.** Committed expenditure on salaries, pensions, interest payments have increased from 69.8% of own revenue receipts in FY2006 to 119.6% in FY2011, against an average of 87.9% for general category states. However, Punjab has shown some improvement in committed expenditure in FY2012. Committed expenditure as percentage of own revenue receipts has declined slightly to above 100% in FY2012. While large committed expenditure relative to revenue is one source of the fiscal imbalance, fiscal analysis also indicate that state budget subsidies are a major contributor to the recurrent expenditure. An overwhelming majority (96%) of this is in the form of power subsidies, which averaged around 1.6% of the gross state domestic product (GSDP) during FY2007–FY2012.¹ Furthermore, the decision in December 2011 to double the quantum of subsidized power to 200 units for certain households resulted in power subsidies increasing to an estimated 1.8% of GSDP in FY2012.
- (ii) **Revenue.** Punjab's revenue effort, as proxied by the own-revenue to GSDP ratios, remains buoyant in relation to other states in India, contributed entirely by tax revenue. Own-tax revenue to GSDP ratio has increased from 6.5% in FY2007 to almost 8% in FY2012 (actual). However, GOP's performance in mobilizing non-tax revenue was discouraging with own-nontax revenue to GSDP ratio declined from 3.5% to 0.9% during the same period. While GOP has been undertaking many measures to improve tax administration in the recent years, there exists immense scope to further its strengthening, besides other strategies including introduction of profession tax.
- (iii) **Deficit.** The above situation of the state's finances has significant portion of borrowings that are being used for financing current expenditure.

3. Given this backdrop of prevalence of fiscal deficiencies and sub-optimal investment on economic and social infrastructure, the proposed program will help GOP in adjusting its policies, prioritizing investment plans, and ensuring adequate capacity building of institutions for augmenting and sustaining improved state finances to facilitate investment on economic and social infrastructure (development financing).

4. **Outcome of the proposed program.** The goal of the proposed program is to assist

¹ In addition to budgeted subsidies, there is also off-budget subsidies reflected in the operating losses by the state power distribution companies.

GOP to consolidate its finances and create fiscal space for meeting the state's development financing requirements in a sustained manner. The outcome of the proposed program is expected to be achieved from several outputs. These include:

- (i) **Improved capacity for fiscal management.** Reform measures under this could include (a) designing the Fiscal Responsibility and Budget Management rules; (b) establishment of a project appraisal, monitoring, and evaluation cell in the Finance Department to help streamline public expenditures; (c) preparation of long-term sector strategies in the selected departments along with roadmaps for achievement of goals; (d) preparation of departmental rolling medium-term expenditure framework (MTEF) for selected departments; and (e) instituting a system of project appraisal reports for all new projects and project performance evaluation for existing projects, and institutionalizing a system linking them with fund allocation. The proposed program will also strengthen the cash management system in the state to ease borrowing requirements, and enhance institutional capacity to actively manage the stock of state debt. All of these measures will serve to generate fiscal savings. That, in turn, will support in sustaining gradual increases in the capital outlays to GSDP ratio to be proposed under the program.
- (ii) **Rationalized expenditure focusing on power subsidies.** Subsidy rationalization (or improved targeting) will be introduced by (a) introducing normative free power requirements for agriculture, (b) segregating the agriculture feeder line and using the agriculture feeder date for subsidy calculation, (c) introducing 100% feeder metering, (d) introducing the distribution meters, (e) introducing a system of power demand forecasting and management, and (f) implementing a debt restructuring plan for the Punjab State Power Corporation Limited.
- (iii) **Improved revenue efforts.** Whereby revenue efforts will be strengthened by (a) introducing the professional tax, (b) reducing the threshold level for tax deducted at source on works contract, (c) increasing the rate for tax on turnover to a comparable level, and (d) digitizing land records.²

5. **Fiscal impact of the proposed program.** Fiscal impact of the proposed program is assessed by comparing revenue surplus and/or deficit, fiscal deficit, and debt stock as a percentage of the GSDP between a baseline scenario (without the program) and a reform scenario (with the program).³ The fiscal parameters are expected to improve over the short run under the reform scenario primarily due to expenditure rationalization with a focus on power subsidies (see Table 3 for details); and increased own-tax revenue due to strengthened value-added tax (VAT), and introduction of the profession tax.

6. Some key fiscal identities include:

- (i) Gross fiscal deficit (GFD) = (capital outlay + disbursements of loans and advances + total revenue expenditure) - (total revenue receipts + recovery of

² Digitization of land records will also facilitate better compliance in this area.

³ See Table 2 for key assumptions.

- loans and advances + other capital receipts);⁴
- (ii) Primary deficit (PD) = GFD - interest payments;
 - (iii) Revenue deficit = total revenue expenditure - total revenue receipts; and
 - (iv) Outstanding debt as on 31 March in period t = outstanding debt as on 31 March in period t-1 + GFD in current period t.

7. **Projection methodology.** To arrive at the projections from FY2014 to FY2018, buoyancy analysis, trend analysis using (exponential) trend regressions, average annual growth rates, the 13th Central Finance Commission recommendations, and GOP's fifth state pay commission recommendations have been used as actual data from 2002–2012. Revenue deficit, GFD, and debt stock have been projected using the identities defined above. Under the realistic reform scenario, it is assumed that capital outlay to GSDP ratio to be higher than the baseline figures starting from FY2015 and stabilizes at 2.5% to ensure additional development financing (Table 1).

8. It is assumed that the state would receive \$200 million in three tranches i.e., first tranche amounting \$50 million in FY2014, second tranche amounting \$50 million in early FY2016 and third tranche amounting \$100 million in end FY2016.

9. As evident from Table 1 below, the revenue deficit, as a percentage of GSDP, is expected to decline over the years in base as well as reform scenarios, and the reduction is bigger under the reform scenario. The GFD, as a percentage of GSDP, is projected to improve under both scenarios during the projection period setting aside marginal increase in FY2015 and FY2016 in reform scenario. However, the deficit level is higher under the reform scenario than base scenario. This is exclusively on account of higher capital outlay assumed under the reform scenario. The FD, however, will reach 2.7% of GSDP in FY2018.

10. The reforms under the program will generate fiscal savings equivalent to \$766 million over 5 years (FY2014–FY2018). ADB will finance part of additional capital outlays during FY2014 to FY2016 that could not have been met from the fiscal space created under the program (development financing gap).

Table 1: Baseline and Reform Scenario
(% of GSDP)

Item	FY2014	FY2015	FY2016	FY2017	FY2018
Baseline Scenario					
Revenue deficit	1.1	0.9	0.8	0.7	0.4
Fiscal deficit	3.1	3.0	2.8	2.7	2.5
Capital outlay	2.0	2.0	2.0	2.0	2.0
Debt stock	31.7	31.2	30.7	30.1	29.3
Reform Scenario					
Revenue deficit	1.0	0.9	0.7	0.3	0.2
Fiscal deficit	3.0	3.1	3.2	2.9	2.7
Capital outlay	2.0	2.2	2.4	2.5	2.5
Debt stock	31.6	31.3	31.1	30.6	30.0
GSDP (Rs billions)	3,574.1	4,003	4,483	5,021	5,624

GSDP = gross state domestic product, Rs = rupees. Deficit (+)/Surplus (-)

Source: Asian Development Bank estimates.

⁴ A positive figure would mean deficit on fiscal balance, and negative figure would imply a surplus situation.

Table 2: Basic Assumptions

Variable	Assumptions
VAT	Based on VAT buoyancy of 1.25 calculated on Punjab's GSDP growth of 12%, the fiscal impact of the introduction of comprehensive GST throughout India has not been factored in.
State excise	Based on buoyancy of 0.54 calculated on Punjab's GSDP growth of 12%
Stamps and registration fees	Based on average annual growth rate (for normal years) observed in the past
Motor vehicles tax	Based on tax buoyancy of 0.6420 calculated on Punjab's GSDP growth of 12%
Taxes and duties on electricity	Based on tax buoyancy of 1.2959 calculated on Punjab's GSDP growth of 12%
Other (OTR) (residual)	Based on average of the growth rates of previous 3 years
Own-nontax revenue (excluding state lotteries)	Assumed (as highly fluctuating trend is observed in the past)
Share in central taxes and duties	The gross tax collection of the GOI has grown for FY2015 and FY2016 as per the target defined under its Medium-Term Fiscal Policy Statement, FY2014. For period beyond, the tax-GDP ratio target has grown at additional 0.3 percentage points. The share of service tax collection in the gross tax collection of the GOI over FY2014 to FY2019 has been maintained at 11.52%, which is the average of the ratio over FY2009 to FY2013. The divisible pool of this tax collection to be devolved to the states has been arrived at using the average percentage share of actual devolution in the last 3 years—FY2011, FY2012, and FY2013—under the 13th CFC at 28.94%. Punjab's share in the shareable pool of service tax and taxes (exclusive of service tax) during the 13th CFC period is 1.411% and 1.389%, respectively. The same share has been assumed to be maintained during the 14th CFC award period for Punjab. Hence, out of the shareable pool of central taxes, Punjab's share in central taxes is computed by applying the above percentage share.
Grants from the centre	Based on trend and analysis since 1980s
Recovery of loans and advances	Assumed (as highly fluctuating trend is observed in the past)
Salaries	Based on compounded annual growth rate observed in the past
Pensions	Based on compounded annual growth rate observed in the past
Interest payments	Interest payment based on debt model which takes into account the outstanding debt (t-1) as well as fiscal deficit (t-1)
Other revenue expenditure (residual)	Assumed (as highly fluctuating trend is observed in the past)
Disbursement of loans and advances	Assumed (as highly fluctuating trend is observed in the past)
GSDP	Assumed 12% growth in nominal GSDP

Note: These assumptions are under baseline scenario.

CFC = central finance commission, GDP = gross domestic product, GOI = Government of India, GSDP = gross state domestic product, GST = goods and services tax, OTR = own-tax revenue, VAT = value-added tax.

Source: Asian Development Bank.

11. **Program beneficiaries.** The beneficiaries of the proposed program will be the people of the state who will directly benefit from the improved socioeconomic infrastructure in the state. The general population will also benefit from improved targeting of public expenditure, especially in health and education. The greater ability of the GOP to invest in social and economic infrastructure in the state, resulting from enhanced fiscal space, in turn, will help the

population in having greater economic opportunities. The other important economic benefit of the proposed program is to promote a development model that facilitates conservation of natural resources, such as water by targeting power subsidy for agriculture in an efficient manner.

12. **Government capacity.** Government capacity to implement the proposed program is on the low side at the moment, which has necessitated the proposal for a technical assistance grant to support the implementation of the program activities as well as capacity building of GOP officials.

13. **Economic risks.** Some of the perceived economic risks include: (i) availability of GOP's own resources for the proposed reforms, and lack of commitment; (ii) lack of participation by farmers in implementing targeting of power subsidies; and (iii) difficulty in adhering to the MTEF targets.

14. **Coordination of foreign aid.** There is little potential for conflict among the foreign aid agencies in executing and implementing the program as ADB Project Team has undertaken necessary review of the donors' activities in the state and briefed important donors about the proposed program.

15. **Conditions attached to the loan.** All identified economic issues are adequately and appropriately included in the policy matrix.

Table 3: Fiscal Space Creation from Improved Targeting of Power Subsidies and Other Efficiency Improvement Measures

Intervention	Reduction in Subsidy (realistic scenario)	Assumptions and Rationale
Data used from segregated agriculture feeders for estimating agriculture sales and 100% metering of feeders	5%	Using data from segregated agriculture feeders for estimating agriculture sales would result in lower sales as compared to the current estimation methodology as has been observed in states like Andhra Pradesh, Gujarat, and Rajasthan. Attaining high reduction will be subject to undertaking activities like robust energy audit, complete feeder and/or distribution transformer metering, proactive revenue managed services, etc. Keeping the above factors in mind, a realistic reduction in subsidy of 5% is envisaged through this intervention with a variation of $\pm 0.5\%$ in the optimistic and pessimistic scenarios.
Robust load management and demand forecasting for reducing short-term power purchase costs	2%	Better load in forecasting and management practice would result in reducing the short-term power requirement and costs, resulting in a lower cost of supply and consequently lower per unit subsidy required by the state government for agricultural consumers. The savings can be in the range of 1%–3%, depending on the accuracy of forecasted demand and the short-term market rates. In the case of Punjab, a variation of $\pm 0.5\%$ has been taken from the realistic scenario of a 2% savings.
100% distribution transformer metering	3%	Complete distribution metering would enable a higher accuracy level of the estimation of distribution losses for agricultural supply (transmitting through the dedicated agriculture feeder line). This would be one step forward to 100% metering of final consumers. Accurate distribution losses might help save 2%–4% depending on the current

Intervention	Reduction in Subsidy (realistic scenario)	Assumptions and Rationale
		network condition. We have assumed a variation of $\pm 0.5\%$ in optimistic and pessimistic scenario.
Improving targeting of subsidies	5%	Improved targeting of subsidies with the help of determining normative energy consumption required for ground water irrigation in different agriculture zones of the state would help curtail any wasteful energy consumption. At the current levels, it is estimated that a possible 15% additional power is being consumed than what is required at the current level of ground water table and irrigation requirements. Considering the fact that a possible rollout of the proposed intervention may not be able to achieve 100% of the maximum possible savings, a saving of 5% has been assumed with a $\pm 0.5\%$ variation in the optimistic and realistic scenarios.