Analysis and guidance for refining
Punjab’s secondary school stipends program for girls

Introduced in early 2004, the government of Punjab administers a program that offers stipends (conditional cash transfers) to girls that attend government middle and high schools (grades 6–10). The program is targeted at 15 (out of the 36) districts with the lowest adult literacy rates, measured using the 1998 Population Census data. The program offers Rs. 2,400 per year, in equal quarterly payments, delivered to the student at the school. The program presently benefits approximately 382,000 girls in 6,800 government schools as indicated by reporting on stipends administration by district education departments.

The benefit amount of Rs. 2,400 per year was fixed in 2004. Over the last seven years, the real value of the benefit amount has depreciated by more than 50%. Consequently, it is likely that the incentive-effect of the benefit amount has also declined markedly. The provincial government would like to increase the benefit amount to strengthen the program’s incentive-effect obtained through the level of the benefit. Furthermore, instead of maintaining the current program design and simply topping up the current stipend benefit, the government is interested in revisiting the program design to see if the additional benefit amount can be structured in such a way that it potentially additionally improves the effectiveness and efficiency of the program in promoting its stated objectives, namely increasing transition to secondary school and retention/progression in secondary school for relatively disadvantaged girls.

This note provides guidance on how to more optimally structure the additional stipend benefit to promote the program’s aims. This guidance is derived from examining existing patterns in the data obtained from the 2008/09 PSLM, a district-representative household sample survey—the observed patterns either reinforce or suggest modifications/refinements of certain basic design elements. Note that the observed data patterns are those that have been potentially influenced by the program, given documented causal effects of the program on enrollment (see Chaudhury and Parajuli 2010; Hasan 2010) and other outcomes for young adults (Alam et al 2011). These patterns are considered to reflect the preexisting context for the design suggestions for the additional stipend benefit. The discussion however essentially abstracts from the presence of the current program to avoid speculating on any interaction effects emerging from the design recommendations.

**District targeting: Is the existing district targeting still relevant?** As noted earlier, the current stipends program is targeted at 15 districts that ranked lowest in adult literacy rates. Figure 1 plots the district-level participation rate of girls ages 11–15 years versus the rank of the district in the same indicator. The red triangle denotes a stipend district; the blue circle a nonstipend district (Note in all the figures to come, triangles denote stipend districts and circles nonstipend districts). The figure indicates that the original targeting performed well, and suggests a strong correlation between adult literacy and school participation at the district level. **By and large, the districts with the lowest participation rates remain the stipend districts. Thus, maintaining the existing district targeting for the proposed additional stipend amount seems sensible.**

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1 The national CPI in February 2004 was 111.67; in July 2011 (the latest available price information), it was 259.15.
2 Notwithstanding, it is possible that the act of receiving a benefit (even if nominal in amount) generates some psychic value, thus serving as an important incentive in itself.
Spatial targeting within stipend districts: Would further targeting of the proposed additional stipend amount to certain areas within stipend districts be justifiable? Figure 2 plots the district-level participation rate of girls ages 11–15 years in urban areas versus the rank of the district in terms of the overall participation rate of girls ages 11–15 years. It is clear from the figure that there is currently no discernible relationship between stipend-district status and the participation rate of girls in urban areas. Irrespective of stipend-district status, the participation rate of girls in urban areas largely lies between 70% and 90%.

Figure 3 plots the district-level participation rate of girls ages 11–15 years in rural areas versus the rank of the district in terms of the overall participation rate of girls ages 11–15 years. In contrast to the story for urban areas, in rural areas, stipend districts tend to have lower participation rates for girls than nonstipend districts. These patterns suggest that targeting the proposed additional stipend amount to girls in rural areas is more appropriate than an increase that also applies to girls in urban areas.
Gender targeting within stipend districts: Consistent with the current program, does it make sense to target the additional stipend amount to girls exclusively? Figure 4 plots the district-level participation rate of girls ages 11–15 years in urban areas versus the rank of the district in terms of the participation rate of girls ages 11–15 years in urban areas. These data points are connected. The figure also depicts the district-level participation rate of boys ages 11–15 years in urban areas against the rank of the district in terms of the participation rate of girls ages 11–15 years in urban areas. These data points are unconnected. In urban areas, boys’ participation rates are often poorer than girls’ participation rates, as depicted by the frequency of orange triangles and green circles located below the connected line. Furthermore, this pattern holds irrespective of stipend-district status.

How do boys’ participation rates vis-à-vis girls’ participation rates look like in rural areas? Figure 5 plots the district-level participation rate of girls ages 11–15 years in rural areas versus the rank of the district in terms of the participation rate of girls ages 11–15 years in rural areas. These data points are connected. It also plots the district-level participation rate of boys ages 11–15 years in rural areas versus the rank of the district in terms of the participation rate of girls ages 11–15 years in rural areas. These data points are unconnected. In virtually all districts, girls’
participation rates are lower than boys’ participation rates. Furthermore, the extent of the participation-shortfall for girls appears to be higher in stipend districts relative to nonstipend districts. Given these patterns, female targeting of the additional stipend amount appears to be sensible for rural areas in the current stipend districts. On the basis of these statistics, we would not be able to argue this for urban areas.

Government school participation for benefit receipt: Does limiting the program to girls in government secondary schools net most of them? We examine urban areas first. Figure 6 plots the district-level total participation rate for girls ages 11–15 years in urban areas versus the rank of the district in the same indicator. These data points are connected. It also plots the district-level government school participation rate of girls ages 11–15 years in urban areas versus the same district-rank indicator. These data points are unconnected. There appears to be no clear relationship between government school participation and total participation across districts, with stipend districts looking similar to nonstipend districts in terms of government school participation. Furthermore, many districts, both stipend and nonstipend, have large gaps between government school participation and total participation, suggesting significant private school participation.
What does it look like in rural areas? Figure 7 plots the district-level participation rate for girls ages 11–15 years in rural areas versus the rank of the district in the same indicator. These data points are connected. It also plots the district-level government school participation rate of girls ages 11–15 years in rural areas versus the same district indicator. These data points are unconnected. Government school participation appears to track very closely total participation in stipend districts; this tracking breaks down for nonstipend districts. Thus, the statistics indicate that limiting benefits to girls that attend government secondary schools (that too in current stipends districts) fits the rural context much better, where private school opportunities appear to be more limited.

_School participation patterns across age_. How does participation in secondary school vary by age, and should the benefit schedule be made sensitive to any observed variation? Figure 8 plots school participation rates by age for four groups in stipend districts: girls in urban areas; boys in urban areas, girls in rural areas; and boys in rural areas. Total participation and government school participation are both plotted in each subfigure. Patterns of declining participation rates by age are most evident in rural areas, for both genders. If this pattern in rural areas is driven by increasing costs (monetary and/or nonmonetary) of participation as
the child ages, a schedule of benefits which offers increasing benefit levels with grade (in effect, with age) may help counteract this tendency.

Figure 8. School participation rate in stipend districts, by age, gender, and location (urban/rural)

Current targeting performance in netting the poor: How well does the current targeting regime (district and government school) perform in covering children from poor households? Figure 9 plots the district share of children ages 11-15 years in government school that are poor against the district rank in the same indicator. Each subfigure is for a specific group: girls in urban areas; boys in urban areas; girls in rural areas; and boys in urban areas. The red bar denotes a stipend district; the blue a nonstipend district. A poor child is defined as a child from a household that falls in the bottom two quintiles (bottom 40%) in an asset index created over all households in Punjab. The statistics suggest that targeting on the basis of school type (limiting benefits to government school students) performs poorly in terms of capturing poor students in urban areas. This performance improves markedly in rural areas, particularly in stipend districts where in several of them, the majority of government school students are poor. Thus, the tighter relationship between the current targeting indicators and student poverty status in rural areas suggests that the incentive-effect of the stipend benefit (irrespective of level) is probably stronger in rural areas.
Figure 9. Share poor in public schools, 11–15 year olds by gender and location
Summary of recommendations on structuring the additional stipend benefit

On the basis of the above analysis, the recommendations for the additional higher stipend amount are straightforward and as follows:

1. Target to female students in government schools in rural areas in the current stipend districts.
2. Set an increasing schedule of benefits with grade.

Note the additional stipend amount will be layered on top of the existing stipends program that offers Rs. 2,400 per year to female students in government schools in current stipend districts.

The above structure is likely to improve the efficiency of providing any additional stipend amount.

Budget and savings

The allocation for the girls’ stipends program for FY20011/12 is Rs. 1 billion. If the government wanted to raise the stipend amount for the existing set of beneficiaries so that they restore the value of the stipend amount to what it was when set in 2004, the government would have to double the stipend amount from Rs. 2400 per year to Rs. 4,800 per year. This would mean at the very least doubling the allocation to Rs. 2 billion. If we assume that the raising the stipend amount to this level would incentivize more girls to come/remain in secondary school, the Rs. 2 billion allocation would be less than what would be needed.

There can be significant cost savings from limiting the additional stipend amount to rural beneficiaries. Based on the 2010/11 Annual School Census data, there are roughly 260,000 girls enrolled in grades 6-8 in government schools, out of which 40% are in rural areas. For simplicity, assume that those enrolled meet the minimum attendance requirement. Also, for simplicity, assume that the 60%-40% urban-rural split in beneficiaries is identical in grades 9-10, and that there are 140,000 beneficiaries in grades 9-10. This means that there are roughly 140,000 female beneficiaries in grades 6-8 in rural areas and 56,000 female beneficiaries in grades 9-10 in rural areas. Offering say an additional Rs 1,200 to beneficiaries in grades 6-8 and an additional Rs. 2,400 to beneficiaries in grades 9-10 would mean an increase in the budget allocation from Rs. 1 billion to less than Rs. 1.3 billion, a savings of Rs 0.7 billion from doing an across-the-board increase for all beneficiaries to erase the erosion in the real value of the current stipends benefit. At the same time as being cheaper for the government, the additional stipends benefit is likely to be more efficient as it better targets disadvantaged girls.

Note that additional savings can be generated by further restricting the additional stipend benefits to say the 10 poorest performing districts out of the current 15 stipend districts in terms of the share of girls ages 11-15 years in school. There are merits to doing this as some districts among stipend districts appear to be performing significantly poorer than the rest.
**THE SUPPLY SIDE**

If school supply is a constraint in terms of availability and absorptive capacity, it can dampen the efficacy of demand-side incentives. One rough way to get at whether school supply may serve as a constraint is to examine the availability of secondary schools in a small geographic area, say an union council (UC). Figure 10 plots the number of UCs against the number of government schools with students in grade 6, separately by location (urban/rural) for all-Punjab. The top panel is for girls; the bottom for boys. There are roughly 600 UCs (half in urban areas and half in rural areas) without girls in government secondary schools. Now the rural UCs without government secondary schools for girls may well be very thinly populated but this requires further investigation to ascertain whether school supply may be a constraint.