



Southern Voice

2015 On Post-MDG International Development Goals

Occasional Paper Series

13

Intergovernmental Fiscal Transfers and Gender-Sensitive Education Financing

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INTERGOVERNMENTAL FISCAL TRANSFERS AND GENDER-SENSITIVE EDUCATION FINANCING

Southern Voice Occasional Paper 13

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Publisher

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First Published May 2014

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ISSN 2307-9827 (Online)

ISSN 2307-681X (Print)

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Preface

The *Southern Voice on Post-MDG International Development Goals* was born in the spirit of collaboration, participation and broad academic inquiry. It is a network of 48 think tanks from Africa, Latin America and South Asia which has identified a unique space to contribute to the post-2015 dialogue. By providing quality data, evidence and analyses derived from research in the countries of the global South, these think tanks seek to inform the discussion on the post-2015 framework, goals and targets, and to help to shape the debate itself.

With these goals in mind, *Southern Voice* launched a call for papers among its members to inform the global debate based on the research they have already carried out, to strengthen national or regional policy discussions. The objective of the call was to maximise the impact of the knowledge that already exists in the global South, but which may have not reached the international arena.

In response to the call, we received numerous proposals which were reviewed by *Southern Voice* members. The research papers were also peer reviewed, and the revised drafts were later validated by the reviewer.

The resulting collection of ten papers highlights some of the most pressing concerns for the countries of the global South. In doing so they explore a variety of topics including social, governance, economic and environmental concerns. Each paper demonstrates the challenges of building an international agenda which responds to the specificities of each country, while also being internationally relevant. It is by acknowledging and analysing these challenges that the research from the global South supports the objective of a meaningful post-2015 agenda.

In connection with the ongoing debates on post-2015 international development goals, **Intergovernmental Fiscal Transfers and Gender Sensitive Education Financing** by *Professor Dr Khalida Ghaus* (Managing Director) and *Mr Muhammad Sabir* (Principal Economist) at Social Policy and Development Centre (SPDC), aims to fill a knowledge gap by focusing on education sector based on a micro-theoretic approach, so as to understand the role of transfers on public spending regarding education.

I would like to gratefully acknowledge the contributions of *Ms Andrea Ordóñez* (Research Coordinator of the initiative) and *Ms Mahenaw Ummul Wara* (Research Associate, Centre for Policy Dialogue (CPD) and Focal Point at the *Southern Voice* Secretariat) in managing and organising the smooth implementation of the research programme.

I would also like to thank *Dr Nisha Arunatilake* (IPS), for peer reviewing, and *Dr Oliver Turner* for copy editing the paper.

I would like to take this opportunity to recognise the support of Think Tank Initiative (TTI) towards *Southern Voice*, particularly that of *Dr Peter Taylor*, Programme Leader, TTI.

I hope the engaged readership will find the paper stimulating.

Dhaka, Bangladesh
May 2014

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Abstract

Similar to other federal countries, provincial governments in Pakistan heavily relied on intergovernmental fiscal transfers to finance social services including education. Historically, low share of provinces in intergovernmental transfers is used as a reason for low funding to education, which is insufficient to achieve the goal of universal primary education. This paper used an empirical model based on a micro-theoretic foundation to estimate the impact of intergovernmental transfers on education sector. The results show that increasing the amount of resources to provincial governments through intergovernmental fiscal transfers and grants constituted through NFC awards leads to marginal increase in the provincial expenditure on education. Project lending and gender-sensitive programmes have greater positive impact on education financing.

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Acronyms

FATA	Federally Administered Tribal Area
FYP	Five Year Plan
GDP	Gross Domestic Product
GoP	Government of Pakistan
ICT	Information and Communication Technology
JP	Joint Programme (Education)
MDG	Millennium Development Goal
NEAS	National Education Assessment System
NFC	National Finance Commission
PRGF	Poverty Reduction Growth Facility
SAARC	South Asian Association for Regional Cooperation
UN	United Nations
WDI	World Development Indicator

Intergovernmental Fiscal Transfers and Gender-Sensitive Education Financing

Khalida Ghaus

Muhammad Sabir

1. Introduction

Sustainable development begins with the development of the human resource. Access to education services that generates several positive externalities is among the basic human rights of each individual. Unfortunately, there exists inequalities in the access to education services between males and females in many countries such as Pakistan. In the presence of inequalities, Goals 2 and 3 of the Millennium Development Goals (MDGs) cannot be achieved by Pakistan. An exploration of education statistics indicates that progress made towards Goal 2 (Universal Primary Education (UPE)) and Goal 3 (promoting gender equality and empowering women) is currently slow. For example, against the MDG target of 100 per cent net enrolment in primary education (5-9 years of age) by 2015 only 56 per cent could be achieved by 2010-11.¹ Similarly, the gender parity index (0.88 in 2010-11²) shows that fewer girls than boys of primary age attend school. A closer examination shows that a combination of cultural, social and economic factors impede progress which is further compounded by gender insensitive policy formulation despite initiatives such as the Gender Reforms Action Plan (GRAP).

The overall literacy rate in Pakistan has improved by 31 percentage points since 1996. Among people aged 10 years and older it marginally increased to 58.5 per cent in 2010-11 from 57.7 per cent in 2008-09. This is in comparison to the target of a 100 per cent literacy rate in 2015, which is now unlikely to be met. The completion/survival rate up to Grade 5 actually decreased between the years 2000 and 2009. This implies that more than a quarter of students enrolled in primary schools do not complete their education. With the slow progress on these targets, it seems highly unlikely that Pakistan will be able to achieve MDG 2 by 2015. Among females, literacy rates improved more than those of males. Despite this however, the gender disparity reduction has been nominal and negates any claim of gender parity being ensured. In addition, urban literacy rates showed stronger improvement than those of rural areas. Similar disparity is also obvious between the urban and urban-rural areas. The variations also exist among the various districts of the four provinces of Sindh, Balochistan, Punjab and Khyber Pukhtunkhaw. All of the above three differentials (though in varying degrees) indicate the similarities in the challenges confronted by the MDGs. However the factors impeding the progress clearly were multifaceted. From structural to availability of resources and from traditional (socio-customary) to governance (non-functionality of schools) and backwardness. Faced with adverse conditions and multiple challenges Pakistan's journey towards the MDG targets has been shaky and slow.

Following are some of the steps taken by the government to meet the MDG 2.

- **National Education Policy:** The National Education Policy of 2009 was developed to address challenges in the education sector and to formulate an action plan to ensure universal primary

¹Pakistan Economic Survey 2012-13.

²Pakistan Economic Survey 2012-13.

education for all. The policy focuses on the promotion of a child-friendly and equitable education system; the development of national standards for educational inputs, processes and outputs; and the promotion of research at university level to positively affect innovation. To prevent the failure of this policy, an implementation plan was also developed so that every province will create an action plan outlining efforts required to achieve education goals while maintaining consensus with the federating units as well as within each province.

- **Education Sector Reforms Programme:** This intervention by the government provided Rs. 732 million for the provision of missing facilities to primary and middle schools, reorganising science education at the secondary level and the establishment of polytechnic institutes at district levels. The National Education Foundation is working on building community schools where access to education is difficult as well as establishing skill-based literacy centres. In addition, under the Canadian Debt Swap Projects, Rs. 1 billion was invested for capacity building of Teacher's Training institute and teacher training.
- **One UN Programme:** Pakistan signed the One UN Programme in 2009. The Joint Programme (JP) focuses on ensuring that Pakistan is working towards the goal of universal primary education for all. Under the JP, early childhood education, education for girls and literacy is promoted through advocacy, policy dialogues and capacity building. The quality of literacy programmes has also improved through capacity building and literacy material preparation. The National Professional Standards for Teachers was improved, and a new curriculum was introduced in the vocational sector, along with encouraging the use of information and communication technology (ICT) in secondary education.
- **Tenth Five Year Plan (FYP) 2010-2015:** The FYP includes strategies such as establishing a standardised curriculum and examination system under state responsibility; addressing teacher shortages and enhancing their status along with academic skills; ensuring greater investment in skill development; and initiating social reforms that encourages inclusion of women. Public expenditure on education was committed up to 4 per cent of gross domestic product (GDP) by 2015, among other things.

Pakistan's performance in the education sector has been very weak and the government at all levels has not been successful in achieving gender parity in primary and secondary education. There are several reasons for this slow progress towards MDG 2. The funding allocated by the National Finance Commission (NFC) to each of the provinces is not monitored to oversee the progress made in achieving the Goal at provincial level. Provinces, especially the smaller ones, do not have a strong commitment or understanding of what it means to achieve the MDG in the education sector. In addition, the budget allocated to education is low. Currently the budget for education remains at less than 2 per cent of GDP, out of which more than 90 per cent is spent on administrative items like salaries and 10 per cent for new initiatives.

At the federal level, the government lapsed on identifying the relevant mechanisms much needed to assess the status of the programmes implemented and their impact on education sector outcomes. Clearly, due to the absence of coordinated and concerted plans and policies between the tiers of governments, it is difficult to evaluate the success or failure of interventions made in the education sector. The poor quality of education, discriminatory cultural practices, long distances to schools, and illiteracy among parents are some of the other causative factors. Education utilises the private sector to deliver services, however the cost of private institutions cannot be borne by people in the lower income strata, thus making it difficult to provide equitable levels of education at all levels.

Pakistan has been off track in achieving satisfactory progress in improving the net primary enrolment ratios, ensuring an improvement in the completion rate of those studying in Grade 1 to 5; and also in improving the overall literacy rate. The indicators in all three categories respectively were 57 per cent, 50 per cent and 58 per cent, showing a negligible improvement from the figures for the same in 1990-91. Whereas, all the six indicators in Table 2 indicate that Pakistan continues to remain far behind and face serious gender inequality issues. Though there is a slight increase in the Gender Parity Index (Primary Education) from 0.73 in 1990-91 to 0.90 in 2011-12, the 0.01 increase in Gender Parity Index (Secondary Education) between the years 2008-09 to 2011-12 is almost

negligible. Additionally, the marginal increase in Youth Literacy GPI from 0.51 (1990-91) to 0.81 (2011-12) indicates that Pakistan will not be able to achieve its set goal for Gender Equality and Women's Empowerment by the year 2015.

One of the instrumental impediments sighted for gender insensitive policy formulation is the intergovernmental fiscal transfers constituted through NFC Award. While these transfers are said to be the financial lifeline of the provincial governments (representing more than 70 per cent of provincial revenues) they do not appear to be gender sensitive. Transfers made through the NFC Award played a vital role in the financing of all social services, including in the sector of education. The provincial governments have overlooked the gendered context of education financing.

Table 1: Goal 2: Achieving Universal Primary Education

(in Per cent)

Indicator	1990-91	2008-09	2010-11	2011-12	MDG Targets 2015	Status
Net primary enrolment ratio	46	57	56	57	100	Off Track
Completion/survival rate (Grade 1 to 5)	50	49	49	50	100	Off Track
<i>Male</i>	<i>n/a</i>	59	59	60		
<i>Female</i>	<i>n/a</i>	38	39	40		
Literacy rate	35	57	58	58	88	Off Track
<i>Male</i>	48	69	69	70		
<i>Female</i>	21	45	46	47		

Source: Pakistan Millennium Development Goals 2013, Ministry of Planning, Development and Reforms, GoP.

Table 2: Goal 3: Promoting Gender Equality and Women's Empowerment

Indicator	1990-91	2008-09	2010-11	2011-12	MDG Targets 2015	Status
Gender Parity Index (GPI) Primary Education	0.73	0.88	0.88	0.90	1.00	Off Track
Gender Parity Index (GPI) Secondary Education	<i>n/a</i>	0.80	0.85	0.81	0.94	Off Track
Youth literacy GPI	0.51	0.78	0.79	0.81	1.00	Off Track
Share of women in wage employment in the non-agricultural sector	8.07	10.64	10.45	<i>n/a</i>	14.0	Off Track
Proportion of seats held by women in the National Assembly (% of Seats)	0.9	22.2	22.2	22.2	<i>n/a</i>	On Track
Proportion of seats held by women in Senate (% of Seats)	1.1	17.0	17.0	17.0	<i>n/a</i>	On Track

Source: Pakistan Millennium Development Goals 2013, Ministry of Planning, Development and Reforms, GoP.

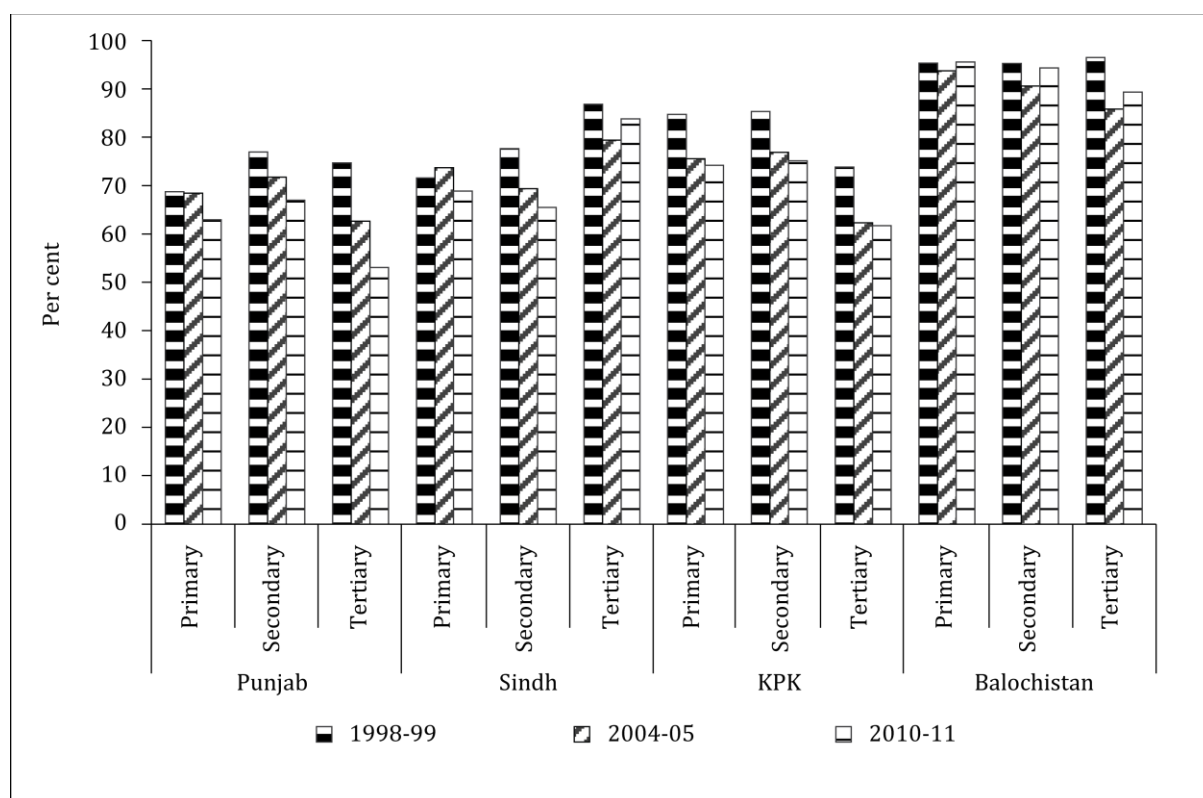
With the comparatively lower spending on girls' education in mind, this research aims to undertake a systematic evaluation of the effects of NFC transfers on public spending in primary and secondary levels of education. The aim is to identify plausible options available to provincial governments to make these transfers gender-sensitive besides sensitising them on the gender aspects of socio-economic development.

1.1 Role of Public Sector in Education

In 1972 the Government of Pakistan (GoP) nationalised private schools, and became the sole provider of education as a part of its campaign to provide free and universal basic education. However, very soon it realised that without the help of the private sector the objective of universal basic education could not be achieved. Since this realisation the government has encouraged the private sector to help improve the literacy percentage and the quality of education at all levels of education, i.e. from primary to tertiary. The institutionalisation of the National Education Assessment System (NEAS) also did not help in ensuring the quality of education.

During the previous decade Pakistan has witnessed the mushrooming of private institutions across all provinces. However, despite this proliferation, the public sector continues to play a major role in the provision of education. Even today, the government is the major provider of primary, secondary and tertiary education. Figure 1 presents the relative share in enrollments at public institutes during 1998-99, 2004-05 and 2010-11. The Figure clearly indicates that though the share of public schooling declined during the 12 year period, it continues to cover at least two-thirds of primary, secondary and tertiary education in all the provinces.

Figure 1: Share of Enroled Students in Public Institutes



Source: Estimates based on PIHS 1998-99, PSLMS 2004-05 & 2010-11.

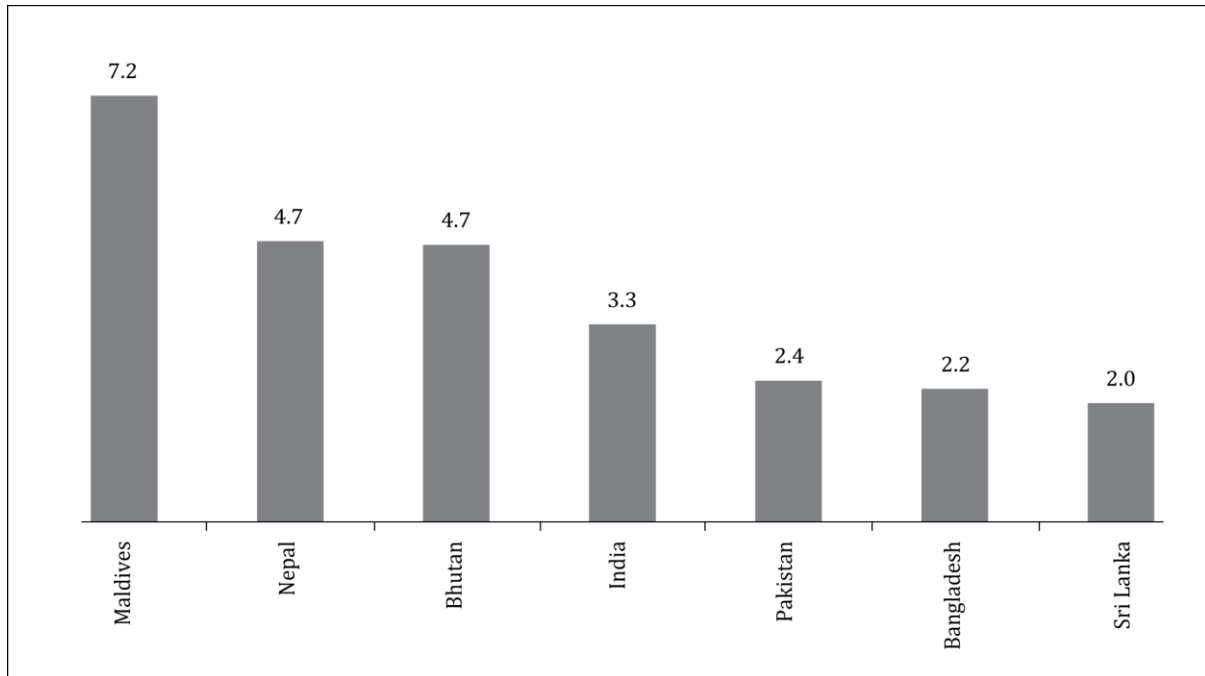
2. Education Financing

An equitable and efficient level of funding for education requires a well functioning financing system. However, a closer look at the management of public finances does not reveal encouraging improvement. The geopolitical conditions along with the economic shock (such as the increase in the oil prices) and internal security conditions narrowed the fiscal space for the federal and at least the three provincial governments that resulted in the reduction of financial resources for education and other social sector expenditures. For instance, oil price shock in 2008 and floods in 2010 negatively affected the financing of education in Pakistan.

Figure 2 presents a comparison of public expenditures on education as percentage of GDP among the countries of the South Asian Association for Regional Cooperation (SAARC). It shows that the Maldives, Nepal, Bhutan and India spent a greater share of their GDP on education than Pakistan. Across South Asia spending in the education sector averaged 2.8 per cent of GDP. In the case of Pakistan the spending was only 2.4 per cent. Another comparison of 105 countries as per World Development Indicators (WDI) indicates that Pakistan was among only 5 per cent of countries which spent its lowest share of public expenditures on education as a percentage of GDP in 2010.

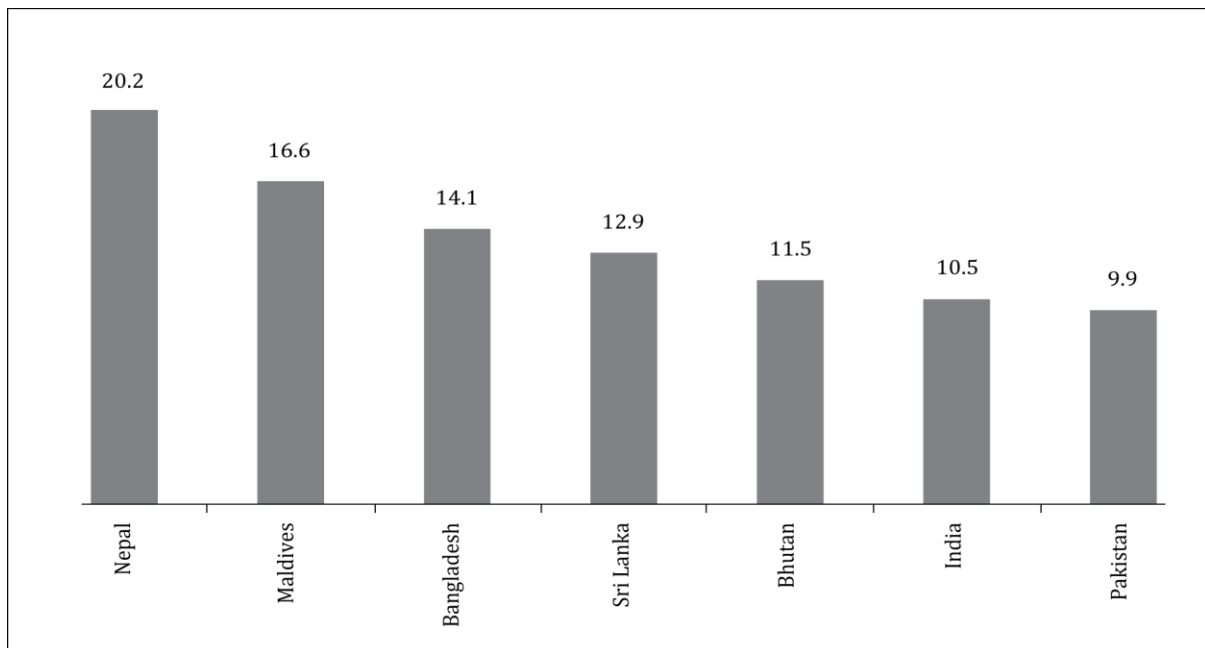
Education as a percentage of total government budget has also been widely used in the literature to compare the public expenditure of the regional states. Figure 3 indicates that among SAARC countries, Pakistan stands at the lowest, spending only 9.9 per cent of its budget on education.

Figure 2: Public Spending on Education as % of GDP in SAARC Countries



Source: World Development Indicators (WDI).

Figure 3: Public Spending on Education as % of Government Expenditure in SAARC Countries



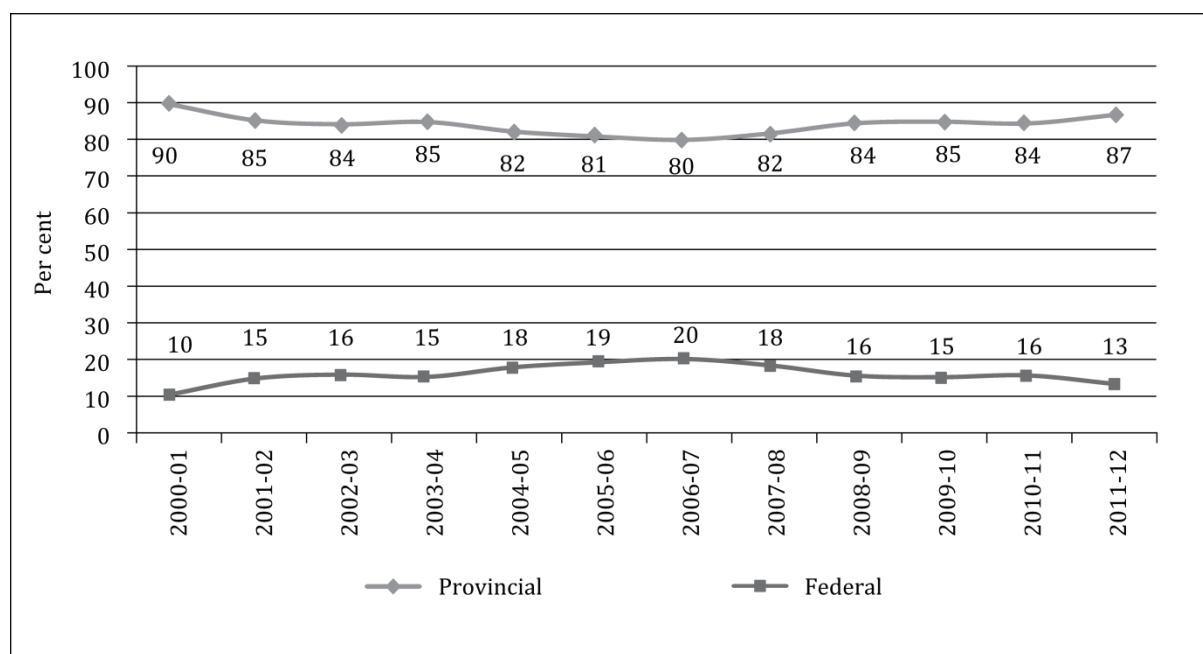
Source: World Development Indicators (WDI).

2.1 Role and Financial Contributions of Provincial Governments in Education Sector

The role of provincial governments in the financing of education services strengthened after the introduction of the 18th Constitutional Amendment in April 2010. The amendment devolved powers to provincial governments including that of education. Prior to it, both the federal and provincial governments had a role in the delivery and financing of educational services. Thus, the provincial governments are now largely responsible for the delivery and financing of educational services. Moreover, the amendment inserted article 25-A into the Constitution of Pakistan which guarantees the right to free and compulsory education to all children between the ages of 5 and 16 years. Though both the federal and provincial governments are included in the constitutional definition of the state, the greater responsibility lies with the provincial governments.

Figure 4 shows the share of federal and provincial governments in total expenditure on education before (2009-10) and after (2011-12) the 18th Amendment. It indicates that more than 80 per cent of public spending on education was already being borne by the provincial governments which further increased in 2011-12 after the 18th Amendment.

Figure 4: Federal and Provincial Government's Share in Education Expenditures



Source: PRSP Budgetary Expenditures.

Education in Pakistan is overseen by the Federal Ministry of Education, as well as the provincial governments. The federal government is mainly responsible for the development of curriculum, accreditation and the financing of higher education, research and development. In other words, delivery of education services in Pakistan is the responsibility of provincial governments, and not the federal/central government. The role of federal government in the delivery of education services is confined to areas, which falls under the federal domain including the Federally Administrated Tribal Area (FATA), Gilgit Baltistan and Islamabad Capital Territory.

However, the role of the provincial governments has been strengthened by the constitutional amendment. Provincial governments are responsible for the provision of education services in their respective provinces from elementary to university level. Since the federal government is not directly involved in the delivery of education services in the provinces, the focus of this paper is the provincial government. Moreover, since the consumer no longer has to choose between federal and provincial government services and the public and private sector, the analysis mainly focuses on public and private rather than federal vs. provincial governments.

2.2 Public Spending on Education by Gender

Table 3 shows that gender disparity persists at all educational levels and in all provinces. It clearly illustrates that public spending on education was biased against females. For instance in Punjab in 2010-11, 47.6 per cent of spending was allocated to females at the primary level, 43.8 per cent at the secondary level and 48.6 per cent at the tertiary level. The remainder was spent on males. The share of public spending on education, however, increased for females in 2004-05 compared to 1998-99 at all levels of education in Punjab.

Table 3: Distribution of Public Spending on Education

Year	Punjab		Sindh		Khyber Pakhtunkhwa		Balochistan	
	Male	Female	Male	Female	Male	Female	Male	Female
Primary Level								
1998-99	55.3	44.7	58.9	41.1	62.9	37.1	65.6	34.4
2004-05	54.2	45.8	60.8	39.2	64.5	35.5	67.7	32.3
2010-11	52.4	47.6	59.1	40.9	56.0	44.0	65.2	34.8
Secondary Level								
1998-99	61.1	38.9	63.8	36.2	70.3	29.7	77.3	22.7
2004-05	57.9	42.1	64.5	35.5	70.7	29.3	76.1	23.9
2010-11	56.2	43.8	62.6	37.4	63.1	36.9	77.1	22.9
Tertiary Level								
1998-99	53.5	46.5	77.0	23.0	69.8	30.2	87.8	12.2
2004-05	47.9	52.1	64.5	35.5	72.7	27.3	77.1	22.9
2010-11	51.4	48.6	63.1	36.9	67.3	32.7	79.1	20.9

Source: Estimates based on PRSP Budgetary Expenditures PIHS 1998-99, PSLMS 2004-05 & 2010-11.

In the other three provinces a greater share of public spending also benefitted males. The gender gap in public spending on education is lowest at the primary level, where females received 40.9 per cent, 44 per cent, and 34.8 per cent of the total spending for primary education in Sindh, Khyber Pakhtunkhwa and Balochistan respectively in 2010-11. The gender gap gradually increases with education level and is greatest at the tertiary level in all three provinces.

Table 4 presents per capita estimates of public spending on education at the various levels for 1998-99, 2004-05 and 2010-11. It shows that gender disparity persists at primary, secondary and tertiary

Table 4: Per Capita Public Spending on Education (in Rupees)

Year	Punjab			Sindh			Khyber Pakhtunkhwa			Balochistan		
	Male	Female	Relative Gender Gap	Male	Female	Relative Gender Gap	Male	Female	Relative Gender Gap	Male	Female	Relative Gender Gap
Primary Level												
1998-99	1,475	1,233	0.84	1,422	1,011	0.71	1,492	945	0.63	1,019	636	0.62
2004-05	2,318	2,180	0.94	1,989	1,356	0.68	2,410	1,520	0.63	2,112	1,208	0.57
2010-11	6,019	5,833	0.97	6,383	5,008	0.78	2,397	2,192	0.91	5,655	3,421	0.60
Secondary Level												
1998-99	670	455	0.68	1,034	626	0.61	1,694	679	0.40	1,563	539	0.34
2004-05	1,278	943	0.74	1,913	1,168	0.61	2,967	1,374	0.46	2,322	967	0.42
2010-11	4,442	3,817	0.86	5,962	4,085	0.69	4,234	2,739	0.65	8,248	3,447	0.42
Tertiary Level												
1998-99	310	256	0.83	531	181	0.34	720	297	0.41	770	118	0.15
2004-05	490	506	1.03	872	563	0.65	997	348	0.35	1,198	479	0.40
2010-11	915	836	0.91	1,869	1,251	0.67	3,164	1,516	0.48	3,835	1,333	0.35

Source: Estimates based on PRSP Budgetary Expenditures PIHS 1998-99, PSLMS 2004-05 & 2010-11.

levels of education in all the four provinces of Pakistan. The Table clearly indicates that the pattern of public spending on education is biased against females. However, there are differences in relative gender gaps in public spending on education among provinces by level of education. The relative gap is the lowest in Punjab and the highest in Balochistan.

3. National Finance Commission (NFC) Awards and Public Spending on Education

One of the reasons for there being a low share of public spending allocated to education in Pakistan is a lack of available resources at provincial levels. Taxes such as on income, sales tax on goods and customs and excise duties are vested in the federal domain. While, residual taxes like agriculture income tax, sales tax on services, motor vehicle tax and others are in the provincial domain. This leaves little scope for provincial resource mobilisation besides relying on federal transfers to finance their expenditures. These intergovernmental fiscal transfers are constituted through NFC awards and are said to be the financial lifeline of the provincial governments. This is because they constitute for more than 70 per cent of provincial revenues and because of their vital role in financing social services such as education.

According to the constitution of Pakistan, the President of the country constitutes NFC after every five years. This commission allocates or awards the total resources or revenues collected during a fiscal year between the federal government and provincial governments by devising a formula for resource transfers and revenue sharing for five years. Hence the decision made by the commission is called National Finance Commission Award.

3.1 Vertical Distribution of Divisible Pool

Table 5 presents the formula for vertical distribution or the provincial share in the divisible pool of NFC awards. It indicates that until the 4th NFC Award, provincial governments had been receiving 80 per cent of two major federal taxes: 'sales tax' and 'income and corporation tax', which were the most buoyant sources of revenues. In contrast, the 5th NFC Award included all federal taxes in the divisible pool and decreased the provincial share from 80 per cent to 37.5 per cent. The *Distribution of Revenues and Grants-in-Aid (Amendment) Order (DRGO) 2006* promulgated by the President of Pakistan increased the provincial governments share to 41.5 per cent in 2006-07, which gradually increased to 46.25 per cent in 2010-11. Later, the 7th NFC Award further enhanced the provincial share to 56 per cent in divisible pool in 2010-11 and then to 57.5 per cent for the rest of the award period. This means that the share of the federal government in the net divisible pool would be 44 per cent in 2010-11 and 42.5 per cent during the remaining period.

Table 5: Provincial Share in Divisible Pool Taxes

(in Per cent)

Divisible Pool Taxes	1st NFC	4th NFC	5th NFC	DRGO 2006	7th NFC
Income Tax & Corporation Tax*	80	80	37.5	41.50 - 46.25	56.0 - 57.5
- Other Direct Taxes	-	-	37.5	41.50 - 46.25	56.0 - 57.5
Sales Tax	80	80	37.5	41.50 - 46.25	56.0 - 57.5
Central Excise Duty**	-		37.5	41.50 - 46.25	56.0 - 57.5
- Tobacco	-	80			
- Sugar	-	80			
Import Duties	-	-	37.5	41.50 - 46.25	56.0 - 57.5
Export Duties					
- Cotton	80	80	-	-	-

Source: SPDC, Annual Review 2011-12.

Note: *Excluding taxes on income consisting of remuneration paid out of federal consolidated fund.

**Excluding Central Excise Duty on Natural Gas.

3.2 Horizontal Distribution of the Divisible Pool

Table 6 shows the formula for horizontal distribution of the divisible pool in NFC awards. It demonstrates that the entire distribution of divisible pool among provinces in the first three conclusive NFC awards and in DRGO was based only on population. However, the 7th NFC Award framed the distribution of the divisible pool based on four weighted factors. These include: population (82 per cent), poverty and backwardness (10.3 per cent), revenue collection/generation (5 per cent) and inverse population density (2.7 per cent).

Table 6: Factors Used in Horizontal Distribution of Divisible Pool Taxes

(in Per cent)

Factor	1st NFC	4th NFC	5th NFC	DRGO 2006	7th NFC
Population	100.0	100.0	100.0	100.0	82.0
Poverty/Backwardness	-	-	-	-	10.3
Revenue Collection/Generation	-	-	-	-	5.0
Inverse Population Density	-	-	-	-	2.7

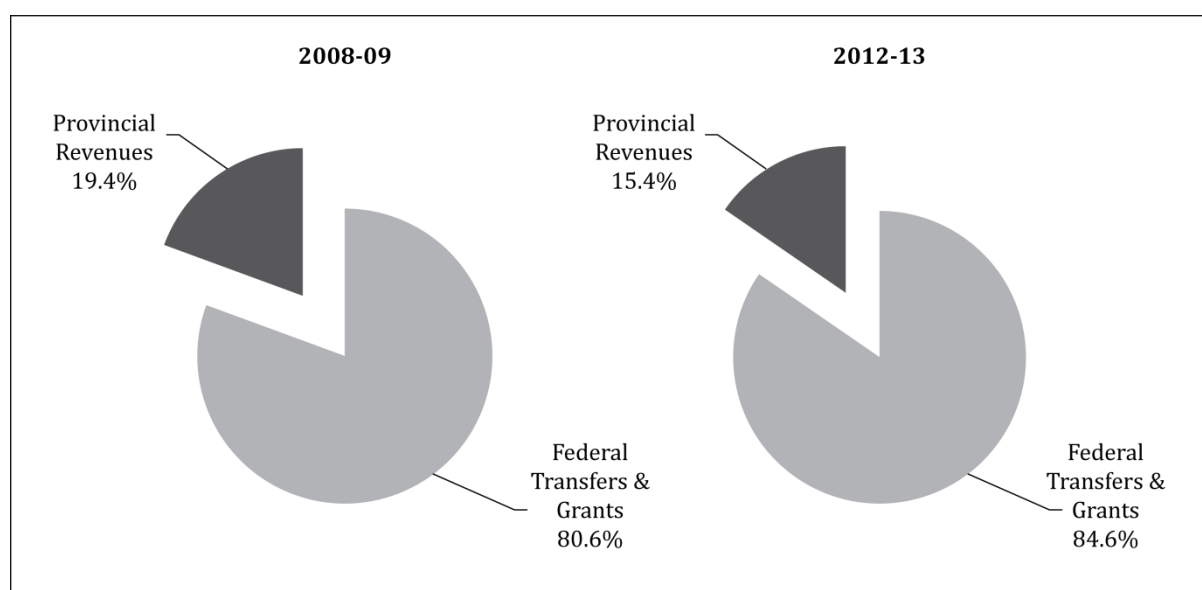
Source: SPDC, Annual Review 2011-12.

*Other than one-sixth of sales tax collected and distributed in lieu of Octroi/Zila Tax.

3.3 Impact of NFC 7th Award on Provincial Revenues

In a broad sense, the provincial governments have three sources of revenues: provincial tax revenues, non-tax revenues, and the federal transfers and grants largely constituted through NFC awards. So far, the largest source of revenue is the federal transfers and grants, which includes both divisible pool transfers, and straight transfers and grants. Figure 5 presents the share of provincial governments own revenues including tax and non-tax revenues, along with the federal transfers and grants in total provincial non-development revenues for the years 2008-09 and 2012-13. The Figure is indicative of the decrease in the provincial governments own revenues from 19.4 per cent in 2008-09 (before the 7th NFC Award) to 15.4 per cent in 2012-13. This shows that the growth in federal transfers due to change in the design of NFC awards is higher than the growth seen in the provincial revenues. The trend increased the dependence of provincial governments on transfers, but also provided the much needed fiscal space to expand education and other social services.

Figure 5: Structure of Provincial Resources

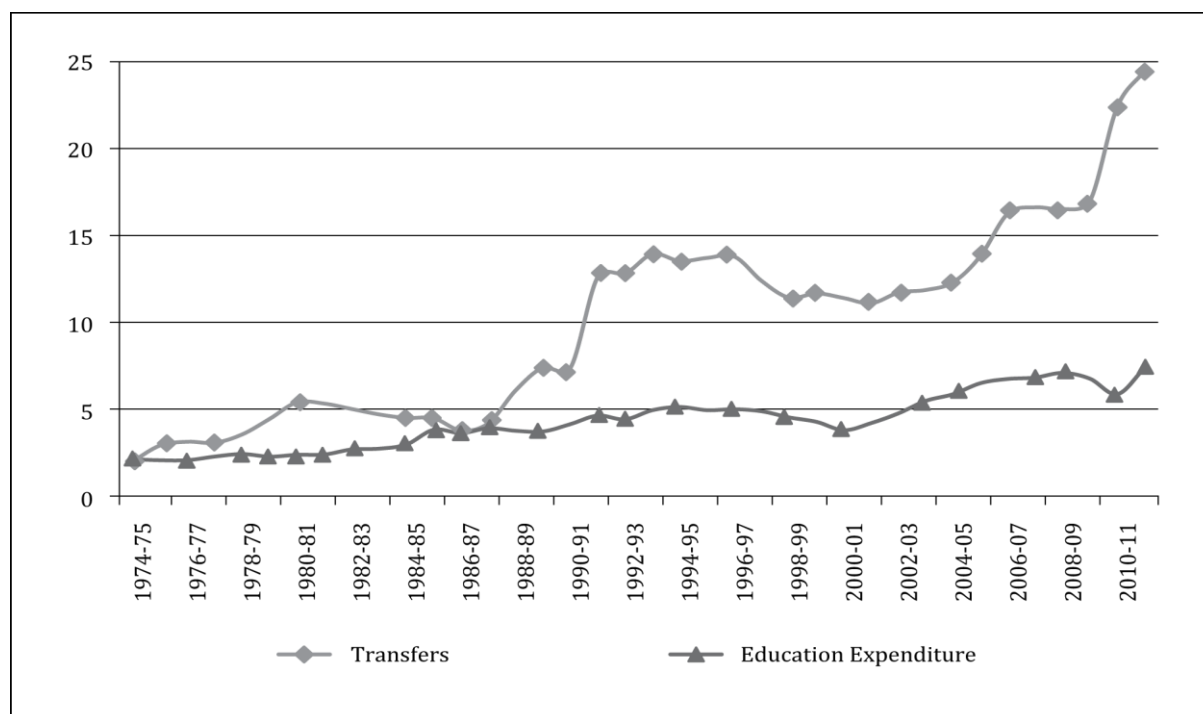


Source: PRSP II progress reports 2008-2011 and 2011-12.

3.4 Trend in Federal Transfers and Provincial Education Expenditure

Figure 6 shows the trend in real per capita federal transfers to provinces channeled through NFC Awards and real per capita provincial expenditure on education. It helps in bringing forward the divergences between the federal transfers and provincial spendings on education since 1986-87. While the federal transfers increased substantially between 1990-91 and 1996-97, education spending did not show much improvement during the same period. Moreover, high growth in federal transfers to provinces since 2006-07 also did not get translated into the provincial spending on education.

Figure 6: Trend in Real Per Capita Federal Transfers and Provincial Education Expenditure



3.5 Gender Sensitisation of the NFC Awards

The concept of gender-sensitive budgeting is not new in Pakistan. The introduction of Gender Responsive Budgeting was proposed for the first time in Pakistan by the Ministry of Women's Development in a paper on gender and poverty submitted to the Poverty Reduction Growth Facility (PRGF) in 2001. Later, the Social Policy and Development Centre conducted capacity development workshops for government officials and civil society to begin the process of gender-responsive budgeting in Pakistan. Since then several attempts have been made in Pakistan to gender sensitise spending on social services including education. However, these attempts were limited to either analysing existing education spending through a gender lens or getting feedback from the beneficiaries. These attempts did not succeed in enhancing the size of education spending in relation to GDP.

Despite slow progress towards the MDG targets related to education, higher federal transfers to provinces did not get translated into higher growth in spending on education. This apparent disconnection between the federal transfers to provinces and provincial spending can largely be attributed to the absence of a gendered approach particularly in the distribution of resources among provinces. The design of NFC Awards did not link financial resources to fiscal needs to educate girls and boys. In other words, financial resources transferred to provinces were not linked with the MDG costing exercise conducted earlier to bring in children that were out of school. Neither was it linked with the output indicators such as enrolment and completion rates.

Therefore, any increase in federal transfer to provinces did not necessarily generate an increase in provincial spending on education.

4. Conceptual Framework and Empirical Strategy

The gradual increase in provincial resources after the 5th NFC Award led to the question of the likely impact of increases in federal transfers on public spending on education. In order to understand the linkages that exist between the intergovernmental transfers and education spending, a review of the existing literature was conducted, which is presented below.

4.1 Review of the Literature

A review of the existing research does not indicate sufficient empirical work that has tested the response of change in intergovernmental transfers on education expenditures. The available literature addresses aspects of intergovernmental transfers with respect to fiscal competition among sub-national governments (Musgrave 1997); market incentives of federalism (Qian and Weingast 1997); intergovernmental transfers and deadweight losses in the tax system (Smart 1996); coordination failure (De Mello Jr 2000); survey of approaches in designing intergovernmental fiscal transfers (Bird and Smart 2002); principles and practices of intergovernmental transfer (Boadway and Shah 2007); and social policy and state revenues (Hinojosa *et al.* 2010). Unfortunately, the normative question of consequences of any change in the designed mechanism of intergovernmental transfers on provincial expenditures remains unexplored.

Xiaobo Lü (2011) and Litschig and Morrison (2013) have produced work that stands apart from the general stream of literature. The first study investigates the relationship between intergovernmental transfers and country education spending during the period of 1994-2000 in China, and found little evidence that supports a positive effect of transfers on education spending. The second study found that extra transfers in Brazil increased local government spending per capita by about 20 per cent over a four-year period with no evidence of crowding out own revenue or other revenue sources. It also showed that schooling per capita increased by about 7 per cent and literacy rates by about 4 percentage points.

Ghaus and Pasha (1994) developed and tested an econometric model for Pakistan to evaluate the consequences of the 1991 NFC Award. They analysed the budgetary consequences of increases in transfers and found corresponding increases in provincial government services delivery expenditures along with the crowding out of provincial revenues. Sabir (2001) and Sabir (2010), while analysing the impact of change in the design of transfers on social sector expenditures, found that other expenditures increase more than the expenditure on social services due to increase in transfers. Moreover, any shortfall in transfers largely affects expenditures on social services. However, the two studies treated social sector expenditure at aggregate level, and did not consider education separately. Due to this, no direct link so far has been established on the role of transfers on public spending on education in Pakistan.

4.2 Conceptual Framework

The conceptual framework is based on the assumption that politicians/officials want to maximise the utility of a typical (median) consumer in their jurisdiction subject to budget constraint. For the sake of simplicity, the consumption basket of a typical consumer can be divided into two broad groups: goods and services provided by the provincial government³ (A), and goods and services provided by private sector (B). Utility was assumed to depend positively on the quantity of both goods and services provided by the provincial government (A) and goods and services provided by the private sector (B).

$$U = U(Q_A, Q_B) \quad \dots\dots\dots (1)$$

³In line with the scope of this paper the analysis is limited to provincial expenditure, ignoring the impact of federal expenditures on the utility of consumers. See Section 2.1 for a more detailed explanation.

The goods and services provided by provincial government can be divided into education services, and goods and services other than education.

$$U = U (QE, QO, QB) \dots\dots\dots (2)$$

The quantity of demand of each good and service depends upon the expenditure (public/private) on it. In the case of private goods and services, expenditure would be equal to real per capita disposable income of the consumer or $(y - R)$, where y is the real per capita income and R is the real per capita revenue collected by both the federal and provincial governments. Similarly, in the case of publicly provided goods and services, per capita expenditure would be equal to provincial government per capita expenditure on education services (EE) and other services (OE). Therefore, the utility function of a typical consumer can be rewritten as:

$$U = U (EE, OE, Y - R) \dots\dots\dots (3)$$

R includes both tax and non-tax revenues, while EE and OE consist of both recurring, and development expenditures on education services and other services provided by provincial governments. Payments for the servicing of debt are excluded as these do not benefit citizens directly through the provision of services.

The sources of revenues for provincial government except its own revenues are federal transfers from the divisible pool, development and non-development grants and borrowings. Therefore, the budget constraint of the provincial government (at current prices) can be expressed as:

$$p_2(EE + OE) = p_1R + \bar{T} + \bar{B} + G \dots\dots\dots (4)$$

Where Y = real per capita income

- R = Real per capita provincial revenue (include both tax and non-tax revenues)
- EE = Real per capita public expenditures on education
- OE = Real per capita other expenditures
- p_1 = General Price Level (CPI)
- p_2 = Price index of public expenditure
- T = Per capita total intergovernmental transfers
- B = Per capita borrowing by the provincial government

G consisted of two types of grants from federal government to provincial governments. These are lump sum grants (which consist heavily of development grants) and deficit grant (heavily consists of non-development and non-obligatory grants). Therefore, the total flow of grants is given as:

$$G = G_0 + m \left[p_2(EE + OE) - p_1R - \bar{T} - G_0 \right], 0 < m < 1 \dots\dots\dots (5)$$

Where m = proportion of the revenue deficit financed by deficit grants.

Deficit grant played a very significant role in the provincial finances before 1991, but this option was curtailed in the 1991 NFC Award. However, lump sum grants are still provided to the provinces for their development projects.

Substituting (5) into (4) we obtain:

$$p_2(EE + OE) = p_1R + \bar{T} + \bar{G}_0 + G_D + \bar{B} \dots\dots\dots (6)$$

After the addition of p_1Y on both sides of the Equation (6) the budget constraint can be written as:

$$p_1(Y - R) + p_2EE + p_2OE = p_1Y + \bar{T} + \bar{G}_0 + G_D + \bar{B} \dots\dots\dots (7)$$

Based on the above set of Equations, a utility maximisation problem can be set up as follows:

$$\ell(R, EE, OE, \lambda) = U(Y - R, EE, OE) + \lambda [I - p_1(Y - R) - p_2(EE + OE)] \dots \dots \dots (8)$$

Where $I = P_1Y + T + G_0 + G_D + B$

The first order conditions are as follows:

$$\frac{\partial \ell}{\partial R} = -\frac{\partial U}{\partial (Y - R)} + \lambda p_1 = 0 \dots \dots \dots (9)$$

$$\frac{\partial \ell}{\partial EE} = \frac{\partial U}{\partial EE} - \lambda p_2 = 0 \dots \dots \dots (10)$$

$$\frac{\partial \ell}{\partial OE} = \frac{\partial U}{\partial OE} - \lambda p_2 = 0 \dots \dots \dots (11)$$

$$\frac{\partial \ell}{\partial \lambda} = I - p_1(Y - R) - p_2(EE + OE) = 0 \dots \dots (12)$$

The above derivation based on a micro-theoretic approach provides the information on the signs of partial derivatives of the function, but it needs an explicit utility function for estimation purposes. In the analysis of consumer behaviour, many utility functions were used, and among them we chose the analogous Stone-Geary utility function for the estimation of the model.

$$U = (EE - EE_0)^{\alpha_1} (OE - OE_0)^{\alpha_2} (y - R - y_0)^{(1-\alpha_1-\alpha_2)} \dots \dots \dots (13)$$

$$0 < \alpha_1 < 1,$$

$$0 < \alpha_2 < 1,$$

$$0 < \alpha_1 + \alpha_2 < 1$$

The Stone-Geary utility function has particular advantages over other functions. The most important advantage is the inclusion of y_0 , EE_0 , and OE_0 , which are “minimum survival bundles”, and ensure the subsistence level of consumer demand for public and private goods and services. Substituting the derivatives of utility function into (9), (10) and (11) respectively, yields:

$$P_1(Y - R) = \frac{(1 - \alpha_1 - \alpha_2)U}{\lambda} + P_1Y_0 \dots \dots \dots (14)$$

$$P_2EE = \frac{\alpha_1 U}{\lambda} + P_2EE_0 \dots \dots \dots (15)$$

$$P_2OE = \frac{\alpha_2 U}{\lambda} + P_2OE_0 \dots \dots \dots (16)$$

Substituting the value of p_2SE , p_2E and $p_1(Y-R)$ from (14), (15) and (16) into (7) we obtained:

$$\frac{U}{\lambda} = p_1(Y - Y_0) + T + G_0 + \frac{B}{1 - m} - p_2(EE_0 + OE_0) \dots \dots \dots (17)$$

Minimum bundle of income y_0 was assumed to be partly constant and partly rises with income y .

$$y_0 = a_0 + a_1y$$

Therefore, Equation 15 can be written as:

$$\frac{U}{\lambda} = (1 - a_1)p_1Y - a_0p_1 + T + G_0 + \frac{B}{1 - m} - p_2(EE_0 + OE_0) \dots \dots \dots (18)$$

After substituting the value from Equation 18 into 14, 15 and 16, we finally have the following system of equation for estimation:

$$p_2 EE = \alpha_1(1-a_1)p_1 Y - a_0 \alpha_1 p_1 + \alpha_1(T+G_0) + \frac{\alpha_1}{1-m} B + \{(1-\alpha_1)EE_0 - \alpha_1 OE_0\} p_2 \dots \dots \dots (19)$$

$$p_2 OE = \alpha_2(1-a_1)p_1 Y - a_0 \alpha_2 p_1 + \alpha_2(T+G_0) + \frac{\alpha_2}{1-m} B + \{(1-\alpha_2)OE_0 - \alpha_2 SE_0\} p_2 \dots \dots \dots (20)$$

$$p_1 R = (\alpha_1 + \alpha_2)(1-a_1)p_1 Y + a_0(\alpha_1 + \alpha_2)p_1 - (1-\alpha_1 - \alpha_2)(T+G_0) - \frac{(1-\alpha_1 - \alpha_2)}{1-m} B + (1-\alpha_1 - \alpha_2)(SE_0 + OE_0) p_2 \dots \dots (21)$$

Equation (19) is the desired expenditure equation. Divided Equation 19 by p_2 we have the following functional form:

$$EE = \alpha_1(1-a_1) \frac{p_1 Y}{p_2} - a_0 \alpha_1 \frac{p_1}{p_2} + \alpha_1 \frac{(T+G_0)}{p_2} + \frac{\alpha_1}{(1-m)} \frac{B}{p_2} + \{(1-\alpha_1)EE_0 - \alpha_1 OE_0\} \dots \dots \dots (22)$$

Finally, Equation 22 is the expenditure equation for empirical estimation.

4.3 Empirical Strategy

Keeping in line with the scope of study, empirical estimation is restricted to the Equation 22 derived for education expenditures. The slight changes are made in the Equation 22 for econometric specification, which can be rewritten in the following form:

$$EE = c_0 + c_1 \frac{p_1 Y}{p_2} - c_2 \frac{p_1}{p_2} + c_3 \frac{(T+G_0)}{p_2} + c_4 \frac{B}{p_2} \dots \dots \dots (23)$$

So far the Equation has not contained any terms to capture the impact of gender-sensitive programmes on education expenditures. Pakistan’s history indicates that a small number of government interventions can be classified as gender sensitive in the education sector. One such intervention is Prime Minister Junejo’s Five Point Programme initiated in December 1985. “The program was multidimensional in nature. The main objectives were to induct a new and progressive civilian order, establish institutions of social justice, introduce an egalitarian economy, increase employment opportunities, strike hard at corruption and other social evils, liberate at least 50 per cent of the people from illiteracy, and to start socio-economic development of the country.”⁴ Other interventions were also initiated and implemented between 2005 and 2008. During this period various gender-sensitive education interventions were made including gender responsive budgeting along with the second phase of Education Sector Reforms (ESR). In addition, the Education for All (EFA) Plan of Action (2001-2015) has been developed through broad-based consultations with principal actors and other stakeholders. The priorities under EFA include: (i) universal primary education and quality education for all; (ii) adult literacy rate of 86 per cent for both males and females; (iii) reducing illiteracy by 50 per cent with a focus on reducing the gender gap; and (iv) quality education and technical and skill development programmes. The Government is also in consultation with development partners of the Education for All Fast Track Initiative to enhance quality and coverage in education. While the ESR and EFA plans of action have been developed for 2001 to 2015, their implementations gained momentum between 2005 and 2008.

In order to capture the impact of these interventions, Equation 22 is further augmented by adding an incremental dummy and being rewritten as follows:

$$EE = c_0 + c_1 \frac{p_1 Y}{p_2} - c_2 \frac{p_1}{p_2} + c_3 \frac{(T+G_0)}{p_2} + c_4 \frac{B}{p_2} + DUM \dots \dots \dots (23)$$

⁴<http://storyofpakistan.com/muhammad-khan-junejo-becomes-prime-minister/>

5. Estimation

Due to limits on the availability of key macroeconomic variable such as data on provincial GDP and province-level inflation, analysis using panel data for provinces is not possible. Given this constraint, the model was estimated by combining the four provincial governments and using macroeconomic data of Pakistan.

5.1 Sources of Data

Annual budget statements of each province were used to generate the aggregate database for key provincial budgetary magnitudes including education expenditures, intergovernmental transfers, borrowing and grants. The data of general price level (CPI), price index of public expenditure, population and Gross Domestic Product (GDP) at market price is taken from various issues of Economic Survey. Values of dummy variable that ranges between 1 to 2 during 1985 to 1988 and between 0.25 to 0.5 during 2005 to 2008 captures the impact of the Five Point Programme and gender-sensitive interventions respectively.

5.2 Results

Equation 23 is estimated using annual data for the period 1972-73 to 2011-12. The dependent variable in the Equation is real per capita provincial expenditure on education whereas the independent variables are the ratio of general price and public expenditure price index (p_1/p_2); per capita GDP multiplied by the ratio of prices (p_1Y/p_2); real per capita intergovernmental transfers and grants ($(T+G_0)/p_2$); real per capita provincial borrowing (B/p_2); and a dummy variable (DUM) for gender-sensitive interventions in the education sector. Results of estimation are given in Table 7.

Table 7: Results of Estimation - 1972-73 to 2011-12 Dependent Variable - Real Per Capita Provincial Expenditure on Education

Independent Variable	Constant	p_1Y/p_2	p_1/p_2	$(T+G_0)/p_2$	B/p_2	DUM
Coefficient	+ 0.595	+ 0.009	-1.255	+ 0.176	+ 0.186	+ 0.583
t-Statistic	(0.735)	(1.829)	(-1.740)	(3.185)	(2.981)	(4.030)
Adjusted R ²	0.958			Durbin-Watson stat	1.435	

The signs of all the estimated coefficients are theoretically consistent. Each coefficient is significantly different from zero at a 5 per cent significance level except GDP and price ratio, which are significantly different from zero at 10 as apparent from the t-statistics. The value of adjusted R² indicates that the model explains almost 96 per cent of variation in provincial education sector expenditures.

According to the estimated equation an increase or decrease of Rs. 100 in either the real federal transfers or lump sum grants can affect the real per capita expenditure on education by Rs. 17.60. It is important to note that the impact of borrowing is greater than that of intergovernmental transfers and grants. One of the possible explanations of this result could be the nature of provincial borrowing. Historically, provincial borrowing consisted of cash development loans which afterwards changed into project loans. Both of them were largely used to finance development expenditures in social sectors where the education sector is a greater component. Larger coefficient and negative sign of the price ratio indicates that an increase in general price levels causes an increase in interest rates, which ultimately increases the cost of provincial borrowing and shifts resources from education to debt servicing. Finally, the positive sign and lower magnitude of GDP indicates that any growth in GDP marginally affects provincial education expenditures through indirect channels such as increases in revenues from motor vehicle tax or urban immovable property tax. It is also important to note that the dummy for gender sensitive intervention is significant, and on average had a greater impact on provincial education spending.

6. Conclusion and Policy Recommendations

The results presented in this paper show that increasing the amount of resources to provincial governments through intergovernmental fiscal transfers and grants constituted through NFC awards leads to marginal increases in provincial expenditure on education. This marginal increase is less than the desired level of education spending needed to achieve MDGs 2 and 3. Moreover, the five-point programme and borrowing had a greater impact on provincial expenditure on education, which is generally linked to the development project. One possible explanation for this trend is the nature of NFC transfers and their design. For instance, these transfers are not linked to gender-sensitive output indicators such as higher enrolments for boys and girls, or higher literacy for men and women. Moreover, prior to the 7th NFC Award, backwardness was used to make a case for higher constitutional subventions and grants, without any condition to tackle backwardness and illiteracy through higher resources. In the 7th NFC Award, backwardness is used as one of the criteria to determine the share of provinces in a divisible pool. On a positive note, this criterion allocates more resources to relatively backward provinces. It also simultaneously provides them with a negative incentive to stay backward in order to claim higher resources in future NFC awards. The danger of this negative incentive to stay backward is contributing towards the failure in achieving the MDGs.

One striking finding is the greater positive impact of provincial borrowing and gender-sensitive interventions on education expenditures. This leads to two policy choices:

- a) Provincial governments could be asked to design and implement gender-sensitive projects in the education sector on federal directives without making it conditional in NFC awards, as in the case of Junejo's Five Point Programme and during the period 2005-08.
- b) Gender-sensitive interventions could be integrated into the design of NFC awards and then be properly monitored through the NFC.

While the first choice helped in raising resources for education in the past, it was ad hoc in nature and did not ensure sustainable resource flows to the sector. Therefore, this study recommends the second approach for sustainable resource flow to education. The following suggestions should be incorporated in future NFC awards:

- The distribution of resources among provinces is not linked to the MDG costing exercise undertaken in this paper to address non-attendance in schools which in Pakistan is higher among girls. It is also not linked to output indicators like enrolment and completion rates. Establishing an explicit link between federal transfers to provinces and MDG costing for education will help reduce the gender gap in education.
- Gender-sensitive indicators of the net enrolment rate and completion rates of primary education for girls and boys should be used as to help determine the share of provinces in the divisible pool.
- Additional incentives should be provided to the provinces by granting a higher share in the divisible pool. These incentives would help reduce gender inequality in education. For instance, provinces with high enrolment rates in public schools could get a higher share in the divisible pool to finance the cost of retaining a higher number of students in public schools, particularly for female students.
- The share in NFC awards should be made conditional so that the provincial share is linked to spending of the (agreed) distribution of resources on education. A failure to do so must result in withholding their respective share of resources from the divisible pool.
- A post-MDG framework when developed by the government must incorporate the role and responsibility of sub-national governments in the delivery of social services to achieve the desired targets.

These suggestions would help link the intergovernmental transfers with the education outcomes along with encouraging gender-sensitive changes in the future design of NFC awards. Moreover, it would facilitate increases in the level of resources allocated to education as a percentage of GDP, which would help in achieving gender equality in the sector.

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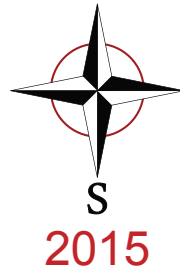
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