©The Pakistan Development Review
49:4 Part II (Winter 2010) pp. 387–403

Financial Implications of the 7th NFC Award and the Impact on Social Services

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1. INTRODUCTION

The financial status of provincial governments in Pakistan hinges largely on federal transfers to the provinces constituted through National Finance Commission (NFC) Awards. These awards design the formula of distribution of resources between federal and provincial governments, and among the provinces for five years. Historically, federal and all provincial governments have tried their level best to get a higher share of the revenues in order to stabilise their own financial status. As a result, there are very few examples of consensus based conclusive awards in the past. These consensus based awards have had different gainers. For instance, in the NFC Award 1991, provincial governments were the main beneficiaries as they received substantially higher shares of buoyant taxes such as sales and income taxes. In contrast, the largest beneficiary of the NFC Award 1997 was the federal government as it allocated higher shares of all taxes to itself in order to stabilise its financial status. Given the sensitivity attached to NFC awards, where an increase or decrease in the share of any tier of the government affects the share of other tiers with the same magnitude in the opposite direction, it seems very difficult to develop a consensus among federal and provincial governments. As a result, since the separation of East Pakistan, there have been only three conclusive NFC Awards (1974, 1991, 1997) and one presidential distribution order (2006) prior to the 7th NFC Award.

In this context, one of the major developments in 2009-10 was a successfully concluded seventh NFC Award or NFC Award 2009, which affected the resource distribution formula. Given the past experience of several inconclusive NFC Awards, a consensus based NFC Award is in itself a big achievement. It is the first time after the secession of East Pakistan that the distribution of resources among provinces has been based not only on population but also on other factors such as backwardness, inverse population density and revenue collection/generation. The NFC Award 2009 has also helped to resolve other issues such as Gas Development Surcharge (GDS) and Hydroelectricity Profit.

This paper aims to analyse the financial implications of the NFC Award 2009 and its impact on three major social services namely education, health, and water supply and

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sanitation. This analysis would not only add to relevant research in Pakistan but would also help in identifying policy implications for future NFC Awards.

2. AN OVERVIEW OF THE NFC AWARDS

The history of intergovernmental fiscal transfers from the federal government to the provincial governments in the sub-continent dates back to 1919. Since the independence of Pakistan in 1947, these transfers have experienced many changes in line with constitutional developments. However, as in other countries, the purpose of fiscal transfer system in Pakistan is primarily to correct the vertical fiscal imbalances between the federal and the provincial governments and horizontal imbalances between provinces.

According to the constitution of Pakistan, the NFC is set up by the president of Pakistan 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, hence such a decision is called the NFC Award. The NFC Award decides the method for allocating the resource transfers for five years based on a formula for revenue sharing. Table 1 gives the chronology of NFC Awards in Pakistan. It shows that since the separation of East Pakistan, there have been only three conclusive NFC Awards (1974, 1991, 1996) in addition to a Distributional Order 2006—only three NFC Awards during a period of 32 years (1974 to 2006). After the NFC Award 1974, two attempts were made for the revision in the design of intergovernmental transfers but these were unsuccessful. The much awaited NFC Award was then materialised in 1990-91. This was followed by the NFC Award 1996 constituted for a period of five years (1996-97 to 2001-02), but remained in practice till 2005-06. In 2006, a distribution order from the president of Pakistan replaced the NFC Award 1997.

Table 1

Chronology of NFC Awards

S. No.	Name	Status
First	**NFC Award 1974**	**Conclusive**
Second	NFC Award 1979	Inconclusive
Third	NFC Award 1985	Inconclusive
Fourth	**NFC Award 1991**	**Conclusive**
Fifth	NFC Award 1995	Inconclusive
	NFC Award 1997	**Conclusive**
Sixth	NFC Award 2002	Inconclusive
	Distribution Order 2006	–
Seventh	**NFC Award 2009**	**Conclusive**

On the distribution method, all the commissions up to the fourth NFC (1991) followed the "gap-filling" approach. This approach assesses the revenue receipts and expenditure based on the actual numbers and recommends non-plan deficit grants to fill the financing gaps. This approach encouraged the provincial governments to understate the predicted growth of their own tax revenues, to increase their commitments on non-plan expenditure, and to run deficit budgets in the expectation that their financing gaps would be filled by grants from the Finance Commission. Apart from encouraging

inefficiency, this approach also resulted in qualifying relatively better off provinces for such grants while disqualifying some of the poor provinces.

The fifth Finance Commission adopted a new formula for the allocation of federal transfers. This differed from the previous one on two grounds: (1) it was based on the new idea of National Resource Picture; and (2) it included all federal taxes in the divisible pool with revised shares. In addition, it provided constitutional subvention for relatively two backward provinces Khyber Pakhtunkhwa (KPK) and Balochistan. Subsequent NFCs were constituted in 2000 and 2005 but an award could not be agreed upon. Finally, in the absence of any recommendation from the sixth Finance Commission, the "Distribution of Revenues and Grants-in-Aid (Amendment) Order (DRGO) 2006" was passed by the president of Pakistan. The DRGO 2006 differs with other NFC Awards in three ways. First, it introduced a variable share of provincial governments (ranges from 41.50 percent in 2006-07 to 46.25 percent in 2010-11). Second, it introduced two divisible pools: one is the largest divisible pool which relied on population as a sole criterion for horizontal distribution and other was used for distribution of 1/6th of the sales tax on new shares of 50, 34.85, 9.93 and 5.22 for Punjab, Sindh, KPK and Balochistan respectively. Third, it separately awarded grants-in-aid to all provinces based on an unknown criterion.

2.1. Key Elements of NFC Award 2009

The NFC Award 2009 has brought some profound changes in the resource distribution formula. It is for the first time since 1973 that the distribution of resources among provinces is based not only on population but also on other criteria such as backwardness, inverse population density and revenue collection/generation. This Award has also helped in resolving other issues such as GDS and Hydroelectricity Profit. The financial implications of this Award for the federal and provincial governments are vast and long-lasting with a substantial increase in transfers from the federal government to provinces due to the following five reasons.

(1) The collection charges of the federal government have been decreased from 5 percent to 1 percent, thereby enlarging the overall size of the divisible pool.
(2) The federal government and all the four provincial governments recognised the role of KPK as a frontline province against the war on terror. One percent of net proceedings of the divisible pool are therefore earmarked for KPK during the entire award period. For instance, in 2010-11, KPK will receive an additional amount of Rs 15 billion against the additional costs it is bearing due to the war on terror.
(3) The remaining proceeds of the provincial share of the divisible pool have been increased from 46.25 percent to 56 percent in 2010-11 and then to 57.5 percent for the rest of the award period. This means that the share of the federal government in the net divisible pool would be 44 percent in 2010-11 and 42.5 percent during the rest of the award period.
(4) This award ensures that Balochistan will get at least Rs 83 billion under divisible pool transfers. In case the estimated share of Balochistan is less than Rs 83 billion, the balance funds would be contributed by federal government.

(5) GST on services collected in the Central Excise (CE) mode is also transferred to the provincial governments under the straight transfer mode—implying that revenues collected from a province would be transferred to that province on the basis of collection. The budget 2010-11, however, did not adhere to this principle.

In addition, the NFC Award 2009 also allows Gas Development Surcharge (GDS) arrears to be paid retroactively to Balochistan on the basis of the new formula and for the payment of the long held up hydel profits to KPK.

2.2. Vertical Distribution of Divisible Pool

Table 2 presents the formula for vertical distribution or the provincial share in the divisible pool of NFC awards. It indicates that until the NFC Award 1991, provincial governments had been receiving 80 percent of two major federal taxes "Sales Tax" and "Income and Corporation Tax", which were the most buoyant sources of revenues and the focus of tax and tariff reforms initiated in the early 1990s. Another important point is that the share of provinces was further increased by including in it the federal excise duty on tobacco and sugar.

Table 2

Provincial Share in Divisible Pool Taxes

(%)

Divisible Pool Taxes	NFC 1974	NFC 1991	NFC 1997	DRGO 2006	NFC 2010
Income Tax and 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**	–				
– Tobacco	–	80	37.5	41.50 – 46.25	56.0 – 57.5
– Sugar	–	80			
Import Duties	–	–	37.5	41.50 – 46.25	56.0 – 57.5
Export Duties					
– Cotton	80	80	–	–	–

*Excluding taxes on income consisting of remuneration paid out of federal consolidated fund.
**Excluding Central Excise Duty on Natural Gas.

In contrast, the NFC Award 1997 included all federal taxes in the divisible pool and decreased the provincial share from 80 percent to 37.5 percent, which was less than half of their previous share. This change was based on optimistic revenue targets of certain macroeconomic projections such as 17 percent growth in nominal GDP, 11 percent domestic and external inflation rate and higher expectations of revenue collection from tax and tariff reforms. However, these expectations did not materialise due to many external and internal shocks that largely affected the federal tax collection.

2.3. Horizontal Distribution of the Divisible Pool

Table 3 shows the formula for horizontal distribution of the divisible pool in NFC Awards. It points out 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 NFC Award 2009 framed the distribution of the divisible pool based on four weighted factors. These include: population (82 percent), poverty and backwardness (10.3 percent), revenue collection/generation (5 percent) and inverse population density (2.7 percent).

Table 3

Factors Used in Horizontal Distribution of Divisible Pool Taxes

(%)

Factors	NFC 1974	NFC 1991	NFC 1997	DRGO 2006*	NFC 2010
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

*Other than 1/6th of sales tax collected and distributed in lieu of Octroi/Zila Tax.

3. FINANCIAL IMPLICATIONS OF THE NFC AWARD 2009

Table 4 presents the vertical distribution of FBR tax estimates in Budget 2010-11 as per the NFC Award 2009. The FBR tax revenue target for 2010-11 is Rs 1,647 billion. The federal government will receive money from these taxes under two heads: (1) divisible pool share, and (2) others, largely based on collection charges and export duties. According to this, the total share of the federal government in FBR taxes in 2010-11 would be Rs 683 billion. Similarly, four provincial governments altogether receive revenues under two heads: (1) divisible pool transfers, and (2) others, an aggregate of revenue transfer under war on terror, provincial GST, excise duty on natural gas and grant for Balochistan to meet the minimum requirement of Rs 83 billion. As a result, the total share of the four provincial governments would be Rs 964 billion if the FBR achieved its tax collection targets.

Table 5 presents the horizontal distribution of FBR taxes estimates in Budget 2010-11 as per the NFC Award 2009. Of the total Rs 844 billion in divisible pool, Punjab would accrue Rs 437 billion (51.7 percent), Sindh Rs 207 billion (24.6 percent), KPK Rs 123 billion (14.6 percent) and Balochistan Rs 77 billion (9.1 percent). Of the total 118 billion transfers in the "others" category, KPK would receive Rs 15.2 billion under the head of war on terror. In order to meet the requirement of a minimum transfer of Rs 83 billion for Balochistan, the federal government would give an additional Rs 6.3 billion to Balochistan. Table 5 also shows the excise duty on natural gas separately because this is a provincial tax and the federal government transfers this tax separately to provinces after deducting collection charges.

Table 4

Vertical Distribution of FBR Taxes as per the 7th NFC Award

(Rs Million)

		Federal Revenues			Provincial Revenues		
	Budget Estimates 2010-11	Divisible Pool	Others	Total	Divisible Pool	Others	Total
Income Tax	633,000	270,220	10,113	280,333	343,916	8,751	352,667
Capital Value Tax	4,700	2,027	28	2,055	2,580	66	2,645
Customs	180,800	76,231	5,079	81,310	97,021	2,469	99,490
Sales Tax	674,900	251,802	3,465	255,267	320,475	99,157	419,633
Federal Excise	153,600	63,095	868	63,964	80,303	9,333	89,636
Total	1,647,000	663,375	19,553	682,929	844,296	119,776	964,071

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts 2010-11.

Table 5

*Horizontal Distribution of FBR Taxes as per the 7th NFC Award**

(Rs Millions)

	Punjab	Sindh	KPK	Balochistan	Total
Divisible Pool Taxes					
Taxes on Income	177,942	84,431	50,281	31,262	343,916
Capital Value Tax	1,335	633	377	234	2,580
Sales Tax (Goods)	50,199	23,819	14,185	8,819	97,021
Federal Excise (Net of Gas)	165,814	78,677	46,853	29,131	320,475
Customs Duties	41,549	19,714	11,740	7,300	80,303
Total: Divisible Taxes (A)	436,839	207,275	123,436	76,746	844,296
Others					
War on Terror/Other Transfers	–	–	15,229	6,254	21,483
Excise Duty on Natural Gas	407	5,025	209	1,503	7,144
G.S.T (Provincial)	51,155	21,145	12,325	4,557	89,183
Total: Other Transfers (B)	51,563	26,170	27,763	12,314	117,810
Total Transfers (A+B)	488,401	233,445	151,199	89,060	962,106

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts 2010-11.

An interesting implication of the NFC Award 2009 is the acceptance of provincial rights over GST services. As per the constitution, GST services is a provincial tax, however, FBR collects it under two heads: (1) GST services (CE Mode) and (2) GST services (provincial). While GST services (provincial) is directly transferred to provincial governments after deducting collection charges, GST services (CE Mode) is treated as GST on goods which is distributed among the federal and provincial governments similar to other divisible pool taxes. The NFC Award 2009 treats both GST services (CE Mode) and GST services (provincial) as GST services (provincial) and transfers the amount collected under this tax to provincial governments after deducting collection charges. Thus while the anomaly in vertical distribution of GST services has been resolved in the NFC Award 2009, the horizontal distribution of this tax is still an unsettled impediment. The distribution of GST services shown in Table 5 is as reported in federal budget documents, which is based on population share of provinces. The distribution of GST on services on the basis of population, though beneficial for Punjab and KPK, is not in line with the spirit of the NFC constitution. Nevertheless, the disagreement over the distribution of GST on services is reflected in the revised federal budget documents as it is stated "The indicative share of GST on services (provincial) are strictly provisional at this stage since a decision on levying a reformed GST has been deferred to 1st October, 2010. These shares would be revised in the light of a decision taken after discussion with the provinces. The final share so determined would take effect from 1st July, 2010."

3.1. Comparison of NFC Award 2009 with DRGO 2006

Table 6 shows the comparison of NFC Award 2009 with DRGO 2006. It indicates that the federal government would receive almost Rs920 billion revenues in 2010-11 if the DRGO 2006 would continue. However, due to revision in resources distribution formula in 2010, the federal government would get revenues amounting to Rs 685 billion. As a result of the NFC Award 2009, the federal revenues would decline by Rs 235 billion in 2010-11 compared to revenues under DRGO 2006.

Table 6

Comparative Impact on Federal Revenues NFC Award 2009 and DRGO 2006

(Rs Million)

	NFC Award 2009	DRGO 2006	Difference
Income Tax	280,333	357,803	–77,470
Capital Value Tax	2,055	2,635	–580
Customs	81,310	103,132	–21,822
Sales Tax	257,087	374,142	–117,054
Federal Excise	64,109	82,171	–18,061
Total	684,894	919,882	–234,988

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts 2010-11.

Table 7 shows province-wise financial implications of the NFC Awards 2010 in comparison with DRGO 2006. It indicates that in absolute terms, Punjab is the biggest beneficiary of the NFC Award 2009, as it is likely to receive Rs 83 billion additional revenues in 2010-11 as per NFC 2010 compared to DRGO 2006. This is on two counts: one, Punjab's share of higher than 50 percent in the divisible pool allows it to benefit the most from the huge increase in vertical transfers; two, the distribution of GST on services on the basis of population rather than on collection adds to this increase.

In percentage terms, however, Balochistan is the major beneficiary, with an increase of more than 100 percent, followed by KPK. The relative picture shows that in percentage terms, the NFC Award 2009 is more beneficial for relatively backward provinces. Gain from NFC Award 2009 to Sindh may increase if GST services (provincial) is not distributed on the basis of population.

Table 7

Comparative Impact on Provincial Revenues NFC Award 2009 and DRGO 2006

(Rs Million)

	NFC Award 2009	DRGO 2006	Difference
Punjab	488,401	405,607	82,794
Sindh	233,445	187,502	45,943
Khyber Pakhtunkhwa	151,199	95,599	55,600
Balochistan	89,060	38,410	50,650
Total	962,106	727,118	234,988

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts.

3.2. Comparison of the NFC Award 2009 with the NFC Award 1997

Table 8 presents a comparison of federal revenues under the NFC Award 2009 with the NFC Award 1997. It indicates that the federal government would receive almost Rs1055 billion in 2010-11 if the 1997 NFC Award would continue. However, due to revision in resource distribution formula in 2010 the federal government would get Rs685 billion. As a result of the NFC Award 2009 federal revenues would decline by Rs370 billion in 2010-11 compared to revenues under NFC Award 1997.

Table 8

Comparative Impact on Federal Revenues NFC Award 2009 and NFC Award 1997

(Rs Million)

	NFC Award 2009	NFC Award 1997	Difference
Income Tax	280,333	409,868	–129,535
Capital Value Tax	2,055	3,026	–971
Customs	81,310	117,826	–36,516
Sales Tax	257,087	429,616	–172,529
Federal Excise	64,109	94,333	–30,223
Total	684,894	1,054,668	–369,773

Source: Author's estimates based on Budget Estimates of 2010-11 published in Explanatory Memorandum on Federal Receipts.

Table 9 highlights the province-wise financial implications of the NFC Awards 2010 in comparison with the NFC Award 1997. The province-wise federal transfers show that in absolute terms, Punjab is likely to receive Rs152 billion additional revenues in 2010-11 as per the NFC Award 2009 compared to the 1997 NFC Award. The comparative picture of other provinces show that Sindh, KPK and Balochistan are likely to receive Rs 90 billion, Rs 70 billion and Rs 57 billion additional revenues in 2010-11 as per the NFC 2010 compared to the NFC Award 1997.

Table 9

Comparative Impact on Provincial Revenues NFC Award 2009 and NFC Award 1997

(Rs Million)

	NFC Award 2009	NFC Award 1997	Difference
Punjab	488,401	336,071	152,330
Sindh	233,445	143,773	89,672
Khyber Pakhtunkhwa	151,199	81,082	70,117
Balochistan	89,060	31,406	57,654
Total	962,106	592,332	369,773

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts.

3.3. Comparison of NFC Award 2009 with NFC Award 1991

Table 10 displays a comparison of federal revenues under the NFC Award 2009 with the NFC Award 1991. While the previous two comparisons show that the NFC Award 2009 caused a declined in federal revenues, comparison with NFC Award 1991gives an opposite picture. It indicates that federal government would receive almost Rs 607 billion in 2010-11 if the 1991 NFC Award would continue. However, due to revision in resources distribution formula in 2010 it would get Rs 685 billion. Thus, as a result of the NFC Award 2009, the federal government is likely to receive an addition of Rs 78 billion in comparison with the NFC Award 1991. It is important to note that while revenues from customs, capital value tax and part of federal excise are not shared with provincial governments, the high share of provinces in two buoyant sources of revenues income and sales tax causes a substantial reduction in federal revenues.

Table 10

Comparative Impact on Federal Revenues NFC Award 2009 and NFC Award 1991

(Rs Million)

	NFC Award 2009	NFC Award 1991	Difference
Income Tax	280,333	156,984	123,349
Capital Value Tax	2,055	4,700	-2,645
Customs	81,310	180,800	-99,490
Sales Tax	257,087	160,168	96,920
Federal Excise	64,109	104,050	-39,941
Total	684,894	606,702	78,193

Source: Author's estimates based on Budget Estimates of 2010-11, Explanatory Memorandum on Federal Receipts 2010-11.

Table 11 brings to light a very important aspect of the NFC Award 2009 in comparison with the NFC Award 1991. It indicates that while there is a decline in vertical share of provinces under the NFC Award 2009 compared to the 1991 NFC Award, this decline is not evenly distributed among the provinces. For instance, if the NFC Award 1991 had continued, Punjab and Sindh would have been likely to receive an additional amount of Rs 105 billion and Rs 17 billion respectively compared to the NFC Award 2009. In contrast, KPK and Balochistan would have been likely to receive Rs 8 billion and Rs 35 billion less in 2010-11 respectively compared to transfers as per the NFC Award 2009. This indicates that the NFC Award 2009 benefits the two relatively more backward provinces, KPK and Balochistan.

Table 11

Comparative Impact on Provincial Revenues NFC Award 2009 and NFC Award 1991

(Rs Million)

	NFC Award 2009	NFC Award 1991	Difference
Punjab	488,401	593,025	–104,623
Sindh	233,445	249,986	–16,541
Khyber Pakhtunkhwa	151,199	142,991	8,208
Balochistan	89,060	54,297	34,763
Total	962,106	1,040,298	–78,193

Source: Author's estimates based on Budget Estimates of 2010-1, Explanatory Memorandum on Federal Receipts 2010-11.

4. IMPACT ON SOCIAL SERVICES

Public expenditure on social services such as education and health is generally considered as a source of poverty reduction as it contributes to human capital formation. Moreover, public spending on social services would likely cause a positive impact on achieving the Millennium Development Goals. However, Pakistan falls among the countries that spend a very low share of their GDP on the social sector.

Table 12 shows a comparison of Pakistan with other East and South Asian countries. It is interesting to note that public spending on education in Bangladesh is higher than the public spending on three social services in Pakistan namely education, health, and water supply and sanitation. Even public spending on education in India is more than double what it is in Pakistan. Similarly, governments in Thailand, Malaysia, Iran and Vietnam spend a much higher share of their GDP on education as compared to Pakistan. Several plans have been made to increase the share on public spending on social services in Pakistan. At policy planning level almost all policy documents including five year plans, MTDF, MTBF, PRSPs gave greater importance to social sector spending. Similarly, the 1997 NFC Award and the Fiscal Responsibility and Debt Limitation Act, 2005 included social sector spending in the list of priority expenditures. However social sector spending has remained very low, particularly after the 1997 NFC award. The allocation of higher share of taxes to provinces under the seventh NFC Award provides a hope that these expenditures as a percentage of GDP may rise during the current five year period.

Table 12

Public Sector Spending on Education: A Comparison with Selected Asian Countries

(As Percentage of GDP)

Country	Public Sector Spending
Vietnam	5.3
Iran	5.2
Malaysia	4.7
Thailand	4.5
Indonesia	3.5
India	3.3
Nepal	3.2
Bangladesh	2.6
Pakistan	
Education	1.5
Health	0.7
Water Supply and Sanitation	0.2
Total	2.4

Source: Pakistan Economic Survey 2009-10 for other countries and Authors estimate for Pakistan.

In this context, this section analyses the estimated impact of financial implications of the NFC Award 2009 in comparison with the DRGO 2006, the NFC Award 1997 and the NFC Award 1991 on provincial social services. The analysis is based on a hypothesis that a change in design of federal transfers in favour of provincial government would be

likely to cause an increase in social sector expenditures. This may occur because provincial governments are primarily responsible for the financing and delivery of social services and any increase in their resources may allow them to allocate and spend more money on social services.

4.1. Empirical Strategy

A search of publically available research did not indicate sufficient empirical studies that tested the response of change in intergovernmental transfers on social services expenditures. There is a substantial descriptive literature addressing many aspects of intergovernmental transfers with respect to fiscal competition among the sub-national governments [Musgrave (1997)], market incentives of federalism [Qian and Weingast (1997)], intergovernmental transfers and deadweight losses in 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 finally social policy and state revenues [Hinojosa, Bebbington, Barrientos, and Addison (2010)]. However, this body of work really did not shed much light on the normative question of consequences of any change in the designed mechanism of intergovernmental transfers on provincial expenditures.

In Pakistan Ghaus and Pasha (1996) and Sabir (2001) developed and tested an econometric model for Pakistan to evaluate the consequences of the NFC Awards 1991 and 1997. The current study has benefitted with the methodological framework developed in Sabir (2002) which developed two separate equations to estimate the impact of the NFC Award 1997 on the social sector and other service related expenditures (see Appendix). In line with its scope this paper is restricted to the estimation of the following equation derived for social services expenditures.

$$SE = \{(1-a_1)SE_0 - a_1 OE_0\} + a_1(1-a_1)\frac{p_1 Y}{p_2} - a_0 a_1 \frac{p_1}{p_2} + a_1 \frac{(T + G_0 + B*D92)}{p_2} + \frac{a_2}{1-m}\frac{B*D91}{p_2}$$

For estimation purposes the above equation can be re-written as

$$SE = c_0 + c_1 \frac{p_1 Y}{p_2} - c_2 \frac{p_1}{p_2} + c_3 \frac{(T + G_0 + B*D92)}{p_2} + c_4 \frac{B*D91}{p_2}$$

Where

SE = real per capita social sector expenditures (both recurring and development)
Y = real per capita income
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
m = proportion of the provincial revenue deficit financed by deficit grants
G_0 = lump sum grants
$D91$= capturing the impact of deficit grants and having value 1 prior to implementation 1991 NFC Award afterwards zero
$D92$ = having value zero prior to 1991 NFC Award afterwards 1

Estimated Results

Due to limitation on the availability of the basic data (for example, the data on provincial gross domestic products and inflation are not available), province wise analysis was not possible. Therefore, the above model was estimated for the four provincial governments combined. Annual budget statements of the individual provinces have been used to generate the aggregate database for key provincial budgetary magnitudes. The above equation is estimated for the period 1972-73 to 2007-08. Results of estimation are given in Table 13.

Table 13

Results of Estimation—1973-74 to 2009-10[1]

Dependent Variable—Real Per Capita Social Sector Expenditures

Independent Variable	Constant	P_1Y/p_2	p_1/p_2	$(T+G_o+B+D92)/p_2$	B*D91	DUM
Coefficient	– 0.058	+ 0.018	–1.381	+ 0.194	+0.301	0.908
t-Statistic	(–0.071)	(4.991)	(–2.257)	(4.369)	(4.194)	(10.230)
Adjusted R^2	0.978			Durbin-Watson stat	1.798	

The signs of all the estimated coefficients are theoretically consistent. Each coefficient is significantly different from zero at a 5 percent significance level as apparent from the t-statistics. The value of adjusted R^2 indicates that the first model explains almost 98 percent variation in provincial social sector expenditures. According to the estimated equation an increase or decrease of Rs 100 in either the real federal transfers or lump sum grants or borrowing can affect the social sector expenditures by Rs 19.40 in real terms.

Based on the above estimated equation and projected values of all explanatory variables for 2010-11, social sector expenditures are forecasted for transfers under the NFC Award 2009, the DRGO 2006, the NFC Award 1997 and the NFC Award 1997. Table 14 provides these forecasted values. It indicates that after the NFC Award 1991 transfers under the NFC Award 2009 are likely to cause a higher increase in social sector expenditure. In the absence of a conclusive NFC Award in 2010, DRGO 2006 would have been continued in 2010-11. Therefore, a comparison of social sector expenditure is made with DRGO 2006. As indicated by the last column of Table 14, due to a conclusive NFC Award in 2010, it is expected that spending on social sectors would increase by more than Rs 45 billion.

Table 14

Impact of NFC Awards on Social Sector Expenditures

(Rs Billion)

	Forecast	Difference
DRGO 2006	409.7	0.0
7th NFC Award	455.3	45.6
1997 NFC Award	383.5	-26.2
1991 NFC Award	470.5	60.8

[1]Since the model is based on ratios, non stationary issues did not exist in estimation. This is further investigated by using Augmented Dickey Fuller unit root test in E-views, which confirmed the stationary nature of the variables used in estimation. These results are available on request from the author.

5. CONCLUSION

NFC Awards are regularly set up after every five years under article 160 of the constitution. However, there are fewer examples of conclusive NFC Awards due to lack of consensus among federating units. In this regard, the NFC Award 2009 is a big success of the present democratic regime. This Award successfully made substantial changes in the design of the resource distribution mechanism. It explicitly introduced multiple indicators for horizontal distribution for the first time, allocated higher share of resources to provincial governments and correspondingly lower share to federal government. Given that provincial governments are largely responsible for financing and delivery of social services, this paper makes an attempt to simulate the impact of this increase on social services expenditures. The projected values of social sector expenditures indicate that the NFC Award 2009 has a potentially positive impact on social sector spending. Given that Pakistan has a comparative low spending on social services, this award is a positive move. Hence, it also helps increasing the pace of achieving MDGs targets.

APPENDIX

Methodology Brief

The estimated equation is based on the methodological framework developed in Sabir (2002). A brief description of the major assumptions used in developing micro-theoretic framework is reproduced below.

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

$$U = U\,(Q_{A,}\, Q_B)$$

The goods and services provided by provincial government can be divided into social services and, other goods and services

$$U = U\,(Q_S,\, Q_O,\, Q_B)$$

The quantity of demand of each good and services 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 received by the government. Similarly, in case of publicly provided goods and services, expenditure would be equal to provincial government expenditure on social services (SE) and other services (OE). Therefore, the utility function can be rewritten as

$$U = U\,(SE,\, OE,\, Y - R) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

R includes both tax and non-tax revenues, while SE and OE consist of both recurring, and development expenditures on publically provided social services and other services. The payments for servicing of debt are excluded as these do not benefit citizens directly through 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:

$$p_2(SE+OE) = p_1R+T+B+G \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Where Y = real per capita income
R = real per capita provincial revenue (include both tax and non-tax revenues)
SE = real per capita social sector expenditures (both recurring and development)
OE = real per capita other expenditures (both recurring and development)
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 (heavily consists of development grants) and deficit grant (heavily consists of non-development and non-obligatory grants). Therefore, by definition, the total flow of grants is given as:

$$G = G_0 + m[p_2(SE+OE) - p_1R - \overline{T} - G_0], 0 \prec m \prec 1 \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

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

Deficit grant has 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 (3) into (2) we obtain,

$$p_2(SE+OE) = p_1R+\overline{T}+\overline{G_0}+G_D+\overline{B} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

After addition of p_1y on both sides of the equation (4) the budget constraint can be written as:

$$p_1(Y-R)+p_2SSE+p_2OSE+=p_1Y+\overline{T}+\overline{G_0}+G_D+\overline{B} \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

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

$$\ell(R,SE,OE,\lambda) = U(Y-R,SE,OE)+\lambda[I = p_1(Y-R)-p_2(SE+OE)] \quad \ldots \quad (6)$$

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

The first order conditions are as follows:

$$\frac{\partial \ell}{\partial R} = -\frac{\partial U}{\partial (Y-R)} + \lambda p_1 = 0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (7)$$

$$\frac{\partial \ell}{\partial SE} = \frac{\partial U}{\partial SE} + \lambda p_2 = 0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (8)$$

$$\frac{\partial \ell}{\partial OE} = \frac{\partial U}{\partial OE} + \lambda p_2 = 0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (9)$$

$$\frac{\partial \ell}{\partial \lambda} = I - p_1(Y-R) - p_2(SE+OE) = 0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (10)$$

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.

$$U = (SE = SE_0)^{\alpha_1} (OE - OE_0)^{\alpha_2} (y - R - y_0)^{(1-\alpha_1-\alpha_2)} \quad \ldots \quad \ldots \quad \ldots \quad (11)$$

$$0 \prec \alpha_1 \prec 1,$$

$$0 \prec \alpha_2 \prec 1,$$

$$0 \prec \alpha_1 + \alpha_2 \prec 1,$$

The Stone-Geary utility function has particular advantages over other functions. The most important advantage of the Stone-Geary utility function is the inclusion of y_0, SE_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 (7), (8) and (9) respectively, yields

$$P_1(Y-R) = \frac{(1-\alpha_1-\alpha_2)U}{\lambda} + P_1 Y_0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (12)$$

$$P_2 SE = \frac{\alpha_1 U}{\lambda} + P_2 SE_0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (13)$$

$$P_2 OE = \frac{\alpha_2 U}{\lambda} + P_2 OE_0 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (14)$$

Substituting the value of p_2SE, p_2E and $p_1(Y\text{-}R)$ from (12), (13) and (14) into (5) we obtained

$$\frac{U}{\lambda} = p_1(Y - Y_0) + T + G_0 + \frac{B}{1-m} - p_2(SE_0 + OE_0) \quad \ldots \quad \ldots \quad \ldots \quad (15)$$

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

$$y_0 = \alpha_0 + \alpha_1 y$$

Therefore, Equation 15 can be written as:

$$\frac{U}{\lambda} = (1-\alpha_1) p_1 Y - \alpha_0 p_1 + T + G_0 + \frac{B}{1-m} - p_2(SE_0 + OE_0) \quad \ldots \quad \ldots \quad (16)$$

After substituting the value from Equation 16 into 12, 13 and 14, we finally have the following system of equation for estimation:

$$p_2 SE = \alpha_1(1-\alpha_1)p_1 Y - \alpha_0\alpha_1 p_1 + \alpha_1(T+G_0) + \frac{\alpha_1}{1-m}B + \{(1-\alpha_1)SE_0 - \alpha_1 OE_0\}p_2 \quad \ldots \quad (17)$$

$$p_2 OE = \alpha_2(1-\alpha_1)p_1 Y - \alpha_0\alpha_2 p_1 + \alpha_2(T+G_0) + \frac{\alpha_2}{1-m}B + \{(1-\alpha_2)OE_0 - \alpha_2 SE_0\}p_2 \quad (18)$$

$$p_1 R = (\alpha_1+\alpha_2)(1-\alpha_1)p_1 Y - \alpha_0(\alpha_1+\alpha_2)p_1 - (1-\alpha_1-\alpha_2)(T+G_0) - \frac{(1-\alpha_1-\alpha_2)}{1-m}$$
$$B + (1-\alpha_1-\alpha_2)(SE_0 - OE_0)p_2 \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (19)$$

Equations (17) and (18) are the desired expenditure equations. Divided both equations by p_2 we have the following functional form:

$$SE = \alpha_1(1-\alpha_1)\frac{p_1 Y}{p_2} - \alpha_0\alpha_1\frac{p_1}{p_2} + \alpha_1\frac{(T+G_0)}{p_2} + \frac{\alpha_1}{(1-m)}\frac{B}{p_2} + \{(1-\alpha_1)SE_0 = \alpha_1 OE_0\} \ldots \quad (20)$$

$$OE = \alpha_2(1-\alpha_1)\frac{p_1 Y}{p_2} - \alpha_0\alpha_2\frac{p_1}{p_2} + \alpha_2\frac{(T+G_0)}{p_2} + \frac{\alpha_2}{(1-m)}\frac{B}{p_2} + \{(1-\alpha_2)SE_0 = \alpha_2 SE_0\} \quad (21)$$

After 1991 NFC Award value of m became zero

$$SE = \alpha_1(1-\alpha_1)\frac{p_1 Y}{p_2} - \alpha_0\alpha_1\frac{p_1}{p_2} + \alpha_1\frac{(T+G_0+B*D92)}{p_2} + \frac{\alpha_1}{(1-m)}\frac{B*D91}{p_2}$$
$$+\{(1-\alpha_1)SE_0 - \alpha_1 OE_0\} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (22)$$

$$OE = \alpha_2(1-\alpha_1)\frac{p_1 Y}{p_2} - \alpha_0\alpha_2\frac{p_1}{p_2} + \alpha_2\frac{(T+G_0+B*D92)}{p_2} + \frac{\alpha_2}{(1-m)}\frac{B*D91}{p_2}$$
$$+\{(1-\alpha_2)SE_0 = \alpha_2 SE_0\} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (23)$$

The value of D91 is 1 prior to 1991 NFC Award otherwise zero and the value of D92 is 1 after the 1991 NFC Award, otherwise zero.

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