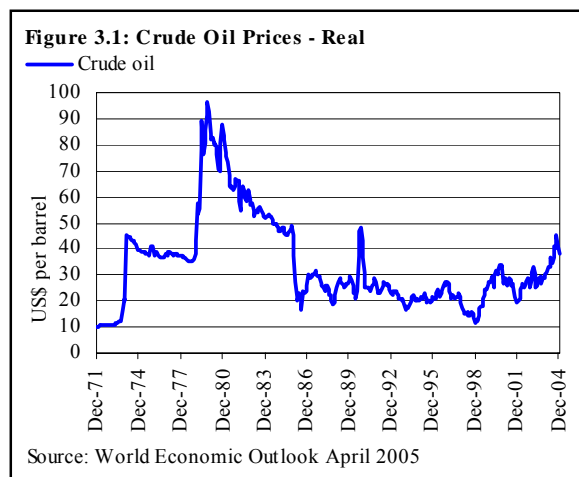


3 Prices

3.1 Global Inflation Scenario

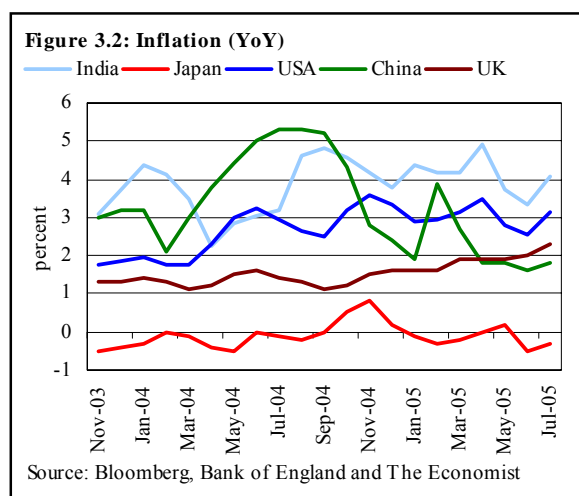
The sustained rise in international oil prices has been a challenging development for global price stability during 2005. The strong rise has already fostered an increase in inflationary expectations in oil importing countries, and threatens to significantly retard growth in the global economy during 2006 as well.

The high international oil prices appear not only to incorporate the strong global demand (particularly from China and India), but supply concerns as well (see **Box 7.9**). The latter view is underscored by the renewed debate over the sustainability of oil supplies, and the sensitivity of international oil prices to shocks in oil producing areas, e.g., Russia, Venezuela, Nigeria, Iraq, and the US. As a result, international oil prices reached their highest nominal level in August 2005. However, until recently, the high oil prices had not led to either a very substantial slowdown in growth or a significant rise in inflationary pressures. This may be changing.



Explanations offered for the earlier resilience included the fact that, in real terms, oil prices were still significantly below levels seen during the oil shocks of the 1970s (see **Figure 3.1**) and that the reliance on oil has decreased for many major economies (e.g. through increased efficiency of usage and the greater share of the services sector in the global economy).

However, given that the current hike in international oil prices has been sustained for longer than expected (and that average FY06 prices seem likely to be stronger than in FY05), the inflationary impact of these could now percolate more strongly through the global economy, as suggested by recent inflation data for key economies (see **Figure 3.2**).



3.2 Domestic Scenario

Strong domestic demand and market structure issues, especially related to the continued supply shortages of some key food staples led a surge in inflationary pressures in the economy during FY05, with a smaller (but growing) contribution from international commodity prices. The inflationary

pressure is evident in all important price measures in the economy; the CPI, SPI and GDP deflator witnessed a sharp rise during FY05, but the rise was muted in WPI¹ (see **Table 3.1 and Figure 3.3**).

In particular, a rise in headline CPI inflation (YoY) (that in March 2005 touched double-digits for the first time in the last seven years) and high core inflation (hovering around 8 percent levels and higher) were major contributors forcing SBP to tighten monetary policy.

It may be noted that the impact of a record wheat crop and a measured monetary tightening had begun to pay dividends in terms of easing inflationary pressures in November and December 2004, with all price indices exhibiting slower YoY growth. However, the government's mid-December 2004 decision to lift the freeze on domestic POL prices again raised inflationary expectations, initiating a secondary inflationary spiral, and forcing a more aggressive tightening of monetary policy² (see **Figure 3.4**). The evident slowdown in inflation, June 2005 onwards, is probably a combined result of a more aggressive monetary tightening as well as measures taken by the government to ensure the availability of major food items.³

However, even this policy is likely to face a major challenge if the expected jump in international oil prices materializes during forthcoming winter season.⁴ In this scenario, aggressive policies will be required in order to contain inflation within tolerable limits, including measures to reduce demand (price hikes, administrative measures, tightening of monetary policy, etc.), increased efficiency of energy consumption, and the sacrifice of fuel

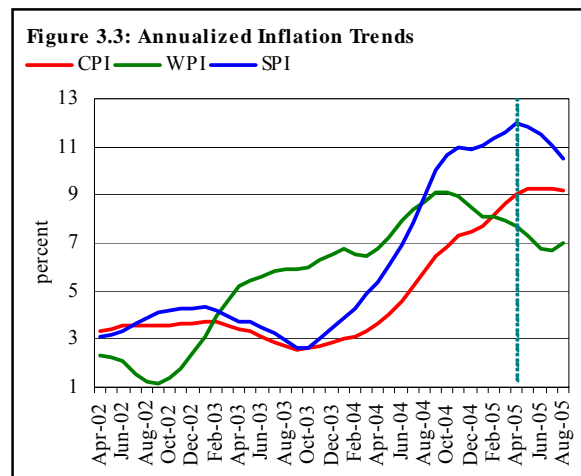
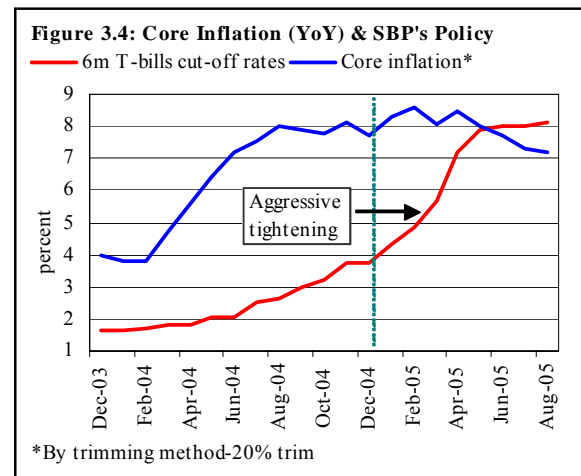


Table 3.1: Inflation Trends

Period	GDP deflator	Annual average			Annual marginal		
		July to June basis			June to June basis		
		CPI	WPI	SPI	CPI	WPI	SPI
FY01	7.8	4.4	6.2	4.8	2.5	4.6	2.0
FY02	2.5	3.5	2.1	3.4	4.4	2.6	4.4
FY03	4.4	3.1	5.6	3.5	1.9	4.4	2.2
FY04	7.8	4.6	7.9	6.9	8.5	12.8	12.6
FY05	10.0	9.3	6.8	11.6	8.7	6.2	9.2
July-FY06		9.3	6.7	11.1	9.0	9.4	8.0

Source: FBS, Economic Survey of Pakistan 2004-05



¹ It should be noted that the rise of the WPI was muted somewhat by an exceptional fall in the prices of cotton and iron mid-way through FY05, which drove down annualized WPI inflation from its FY05 peak of 9.1 percent in September 2004.

² As a result, the yield on 6-month T-bill increased by 4.26 percentage points in H2-FY05 compared to a moderate rise of only 1.65 percentage points in H1-FY05.

³ For example, while higher financial costs would discourage speculators from piling up unnecessary stocks of the essential food items, imports of these items from India, bulk import of sugar and release of TCP sugar stocks improved the supply situation.

⁴ The oil demand could rise further if the US seeks to re-build its strategic reserves that have been depleted somewhat when used to stabilize prices in the aftermath of Hurricane Katrina.

taxes by the government.

Assuming that no unexpected sharp jump in domestic oil prices would be allowed, and continued smooth supply of key staples would be maintained, SBP estimates suggest that FY06 inflation would range between 7.7 and 8.3 percent. The sensitivity of these forecasts to a change in oil prices is elaborated in **Box 3.1**.

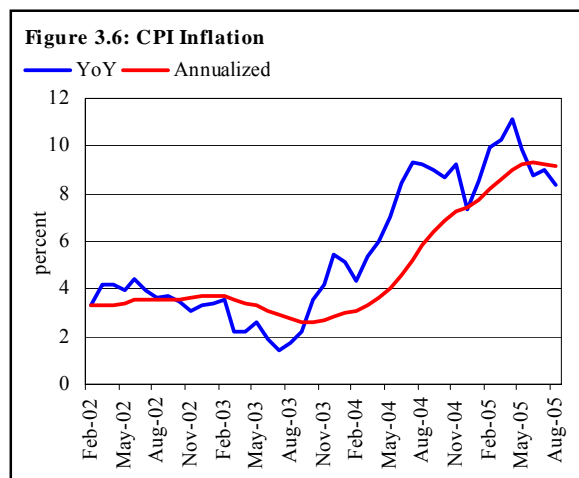
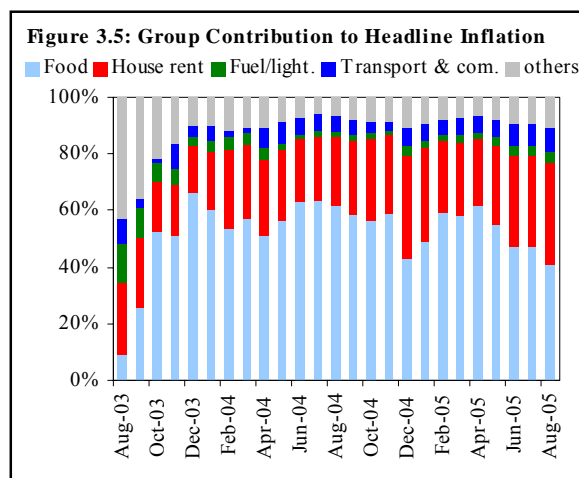
3.3 Consumer Price Index

Inflationary pressures, that had already been visible in the economy since H2-FY04, strengthened significantly during FY05, with the annualized CPI inflation remaining high throughout the year.

During H1-FY05, CPI inflation was principally driven by domestic factors, e.g., *food* and *house rent index* (HRI), and was largely insulated from the high international oil prices.⁵ In H2-FY05 however, the influence of these factors was compounded somewhat by the impact of the hike in domestic POL prices and associated inflationary expectations,⁶ which pulled up *annualized* average CPI inflation to 9.3 percent by end-June 2005—its highest level since 1997—despite a small weakening in HRI and food inflation (the dominant influence of these sub-groups is clearly evident from a glance at **Figure 3.5**).

Intriguingly, the June 2005 weakening in *food* inflation, and the stabilization of the HRI contribution, has pulled down the *marginal* CPI inflation rate below the annualized rate (see **Figure 3.6 & Table 3.2**) for the first time since October 2003. This raises the possibility that if the government is able to contain food inflation through administrative measures (checks on price gouging, and improving the supply of key staples),⁷ the inflation rate may weaken significantly in coming months. Unfortunately, for this to happen, domestic oil prices would also need a degree of stability, the prospects of which do not look very encouraging.

It should be kept in mind that the domestic economy is still significantly insulated from the strong rise in international oil prices because the government has reduced volatility in many key fuel products in



⁵ When the impacts of rising oil price in the international market were mitigated by the fiscal measures till mid-December 2004; however, government removed the fiscal shock absorbers after realizing the permanency of the oil price hike.

⁶ The prices of oil has strong indirect impact on transportations costs (fares & tariff), utilities (electricity & gas), and food items (since transportations costs rise), thus raising inflationary expectations in the economy.

⁷ For example, utility stores are providing wheat flour at subsidized prices. In addition, government has allowed duty free import of wheat as well.

Table 3.2: Distribution of Price Changes of CPI Basket Jun-05 over Jun-04

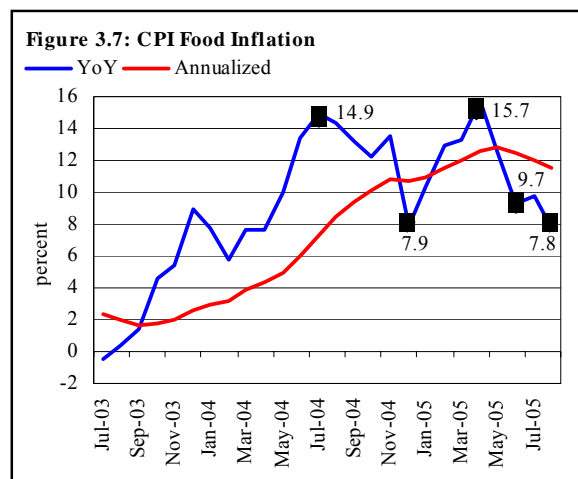
Groups	Weights	% changes	Total number of items	No. of Items in each inflation range				Not reported
				Decrease or no change (0% or less)	Subdued increase (0 to 5%)	Moderate increase (5 to 10%)	Double digit increase (over 10%)	
I. Food group	40.34	9.3	124	32	19	20	39	14
Food, bev.	40.34	9.3	124	32	19	20	39	14
II. Non-food group	59.66	8.4	250	79	87	56	28	0
Apparel, text.	6.1	5.1	42	4	16	18	4	0
House rent	23.43	12.0	1	0	0	0	1	0
Fuel & lighting	7.29	4.6	15	9	0	1	5	0
H/h furn. & equip.	3.29	5.3	44	3	25	13	3	0
Transport & com.	7.32	13.6	43	15	5	12	11	0
Recreation, enter.	0.83	-0.1	16	11	5	0	0	0
Education	3.45	4.5	24	11	7	5	1	0
Clean, lau. & per.	5.88	2.8	36	10	17	7	2	0
Medicines	2.07	0.8	29	16	12	0	1	0
Overall	100	8.7	374	111	106	76	67	14

the domestic economy by reducing (or eliminating) taxes. Since this entails very substantial fiscal costs, the sustainability of the implicit subsidy (through foregone revenues) is questionable, particularly if international prices rise further.

3.3.1 CPI Food Group

High degree of volatility was observed in CPI food group inflation YoY during FY05 (see **Figure 3.7**), although a general uptrend persisted through most of the fiscal year. Annualized average food inflation averaged at 12.5 percent for FY05, which was the highest food inflation recorded during the last decade.

Unlike FY04, however, the FY05 food inflation was not driven principally by wheat prices; while these did witness a sharp rise during Q2-FY05 (possibly a repeat of the speculative hoarding of FY04) the bumper wheat harvest, and timely interventions by the government helped keep wheat prices in check.



Instead, a major portion of food inflation during FY05 stems from sugar, milk and meat prices. The former is mainly a reflection of the low FY05 production of sugarcane, the impact of which may have been aggravated by market structure and distribution problems. Here too, the government introduced supply-side measures - it allowed sugar imports and directed the public sector trading company (TCP⁸) to offload its heavy sugar stocks.

The causes for the increase in milk prices, however, are less clear, though the trading associations point to rising supply and production costs. Milk prices rose by 14.7 percent (YoY) during June

⁸ Trading Corporation of Pakistan.

2005, and given that this commodity has one of the heaviest weights in the CPI basket, its impact on CPI food inflation was very significant.

Unlike sugar, and milk, the higher prices of meat appears to stem from rising export demand from the Middle East and Afghanistan coupled with strong domestic demand. Recently however, the government has sought to improve supplies by allowing imports from India, and there is already some anecdotal evidence of easing pressure on domestic prices.

Finally, the heavy and prolonged rains in most parts of the country during FY05 also damaged some of the minor crops (e.g., potato, onion, tomato, etc.) leading to a temporary rise in the prices of these items. However, the prices for most minor crops declined in Q4-FY05 as increased water availability led to better harvests, and this trend is expected to continue into FY06 as well.

3.3.2 CPI Non-Food Group

In contrast to FY04 when *non-food* inflation was quite benign at 3.6 percent, it witnessed a sustained uptrend to reach 7.1 percent by end-June 2005. While, HRI was the common major contributory factor in pushing up the non-food inflation during the last two fiscal years, *fuel & lighting* and *transport & communication* sub-groups also contributed significantly in FY05 (see **Table 3.3**).

In particular, HRI witnessed an average annualized inflation of 11.3 percent in FY05 compared with 4.5 percent in FY04 and a mere 0.7 percent during FY03. This large rise was a result of an exceptional increase of 45.6 percent in the *building material* sub-group of WPI (which accounts for about 60 percent of this sub-group) during March 2004.⁹ However, rise in HRI (YoY) appears to have peaked in March 2005. Due to a continued downtrend in the *building material* sub-group, and its contribution to non-food inflation is expected to decline significantly by February 2006.

It may be noted that despite the small deceleration in HRI since March 2005, non-food inflation has continued its uptrend. This is mainly due to the off-setting increase in inflationary pressures from the *fuel & lighting*, *transport & communication*, *education* and *apparel & textiles* sub-groups. While, the former two sub-groups is mainly a function of rising international oil prices, the rise in the latter two sub-groups is probably a reflection of strong domestic demand due to increased incomes.

Table 3.3: Impact of PoL Inflation on Headline Inflation

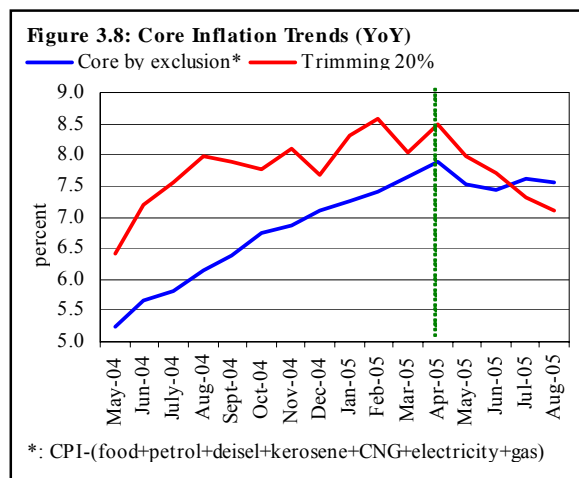
S. No	Items	Annual percent change FY05	Weighted contribution during July 05
Direct impact			
1	Petrol super	21.9	6.24
2	Gas chrg 10.12 - 13.49 mmbtu	10.5	1.51
3	High speed diesel (HSD)	17.8	0.70
4	Kerosene oil	19.2	0.38
Impact on other fuels/utilities			
5	Gas chrg 6.74 - 10.12 mmbtu	10.5	0.28
6	CNG filling charges	51.5	0.15
7	Gas chrg 3.3719 - 6.7438 mmbtu	10.6	0.03
8	Firewood whole	16.7	0.81
Impact on various fares			
9	Bus fare outside city	11.3	0.87
10	Bus fare min (within city)	9.4	0.36
11	Minibus fare min. within city	11.6	0.35
12	Auto rickshaw fares	7.1	0.34
13	Train fare eco. > 500 km.	13.7	0.30
14	Bus fare max (within city)	8.1	0.24
15	A/C bus fare outside city	10.3	0.21
16	Suzuki fare min. within city	8.9	0.16
17	Taxi 4 seater fare	5.5	0.13
18	Minibus fare max. within city	5.6	0.13
19	Air fare economy class.	11.6	0.02
Total			13.2

⁹ HRI constructed by using 24-month's geometric average of building material sub-group of WPI and labor cost with 60 percent and 40 percent weights respectively. Due to rise in the prices of iron & steel in international market in March 2003, building material sub-index also exhibited a sharp jump.

3.4 Core Inflation¹⁰

Core inflation as measured by the exclusion method (non-food non-energy) witnessed a sharp rise since Q4-FY04 until Q3-FY05 before showing some signs of ease. Similarly trimmed core inflation which was hovering around 8 percent until Q3-FY05, also weakened in Q4-FY05 (see **Figure 3.8**).

The evident weakness depicted by both measures of core inflation suggests that the monetary tightening seen in H2-FY05 is finally having some impact. This in turn suggests that at least part of the rise in CPI inflation stemmed from demand pressures rather than supply shocks.



3.5 Incidence of Inflation

Average annualized CPI inflation rose to 9.3 percent during FY05 as compared with 4.6 percent in FY04. Since inflation during FY04 and FY05 is mainly driven by increased food prices, the incidence of inflation is higher than the average for low and middle income groups (having income upto Rs 12000 per month). The higher income group is still enjoying below average inflation, as the prices of non-food items rose at a relatively lower pace (see **Table 3.4**).

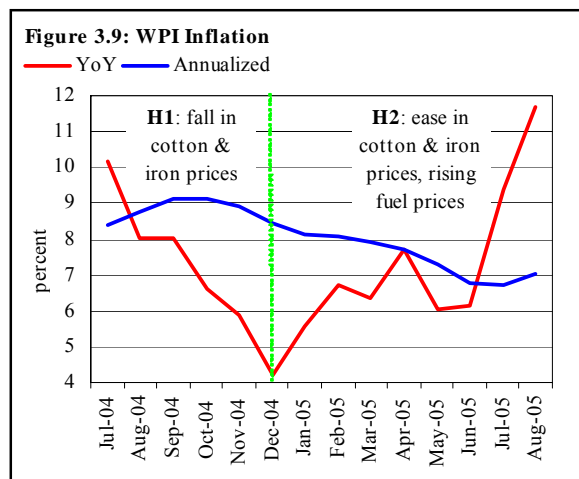
Table 3.4: Income-group-wise Inflation

percent		FY04	FY05
Sr No	Income groups		
1	upto Rs.3000	5.4	10.2
2	Rs.3001 – 5000	5.2	9.8
3	Rs.5001 – 12000	4.7	9.4
4	above Rs.12000	4.3	8.8
Overall		4.6	9.3

This suggests that the erosion in purchasing power of the low income group has been greater. It is in this context that the government’s administrative measures to improve supplies are particularly appreciable as these appropriately complemented the SBP’s tightening of monetary policy to contain aggregate demand.

3.6 Wholesale Price Index (WPI)

High food group inflation was a common phenomenon in both CPI and WPI throughout FY05. However, unlike CPI, a strong deceleration in the non-food inflation component of WPI offset this impact on aggregate WPI inflation during H1-FY05,

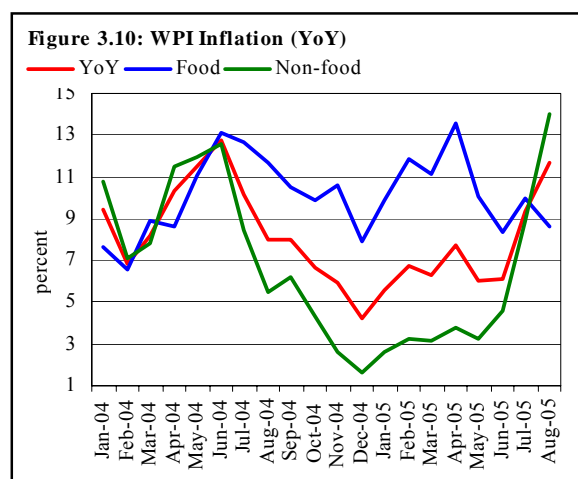


¹⁰ A number of approaches are present in theory and practice to calculate core inflation. The most common methods are (1) the weighted trimmed mean, and (2) exclusion approaches. SBP computes core inflation by both of these methods. In trimming method, 10 percent of the volatility has been removed from both the extremes of weighted ranked price changes of the overall CPI basket to compute Core inflation. In the case of exclusion method, the SBP used to compute non-food non-oil inflation, using the pre-defined groups used by FBS. However, this measure was later refined with the computation of non-food, non-energy inflation – it now excludes the impact of food, petrol, diesel, kerosene, CNG, electricity and gas price inflation from the overall CPI inflation. This series, therefore, will not match with that published in earlier reports.

bringing down the average for the whole of FY05 (see **Figure 3.9**). Thus, annualized WPI inflation averaged at 6.8 percent for FY05 compared with 7.9 percent of FY04.

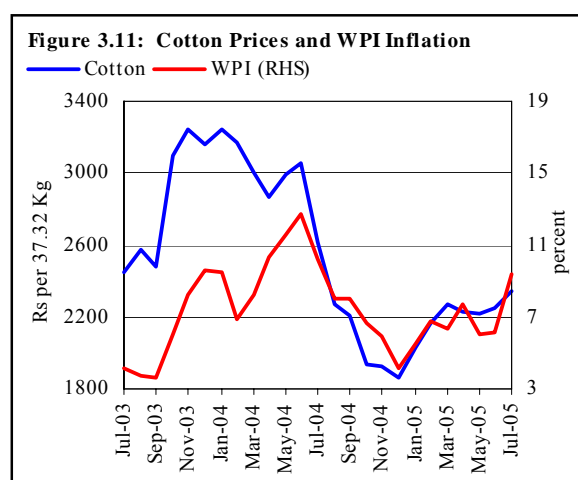
The rise in WPI *food* group inflation was largely due to the same factors that led the rise in CPI inflation. Earlier in the year, the rise was caused some supply side problems that raised the WPI *food* inflation directly, and later it was rising PoL prices that drove prices of food items higher, by raising transportation cost.

The steep deceleration in marginal *non-food* WPI inflation during H1-FY05 was principally due to a large drop in cotton (following a bumper harvest) and steel prices (mainly because international prices fell sharply). While these trends persisted during H2-FY05, they were more than offset by the impact of rising domestic fuel prices. Thus, while *non-food* inflation still remained below the high WPI food inflation throughout the year, the uptrend during H2-FY05 meant it was offsetting less of the strong food inflation. Therefore aggregate WPI reversed its H1-FY05 deceleration in H2-FY05 (see **Figure 3.10**).



The H2-FY05 impact of oil prices on WPI *non-food* inflation was evident in a number of sub-groups:

- The direct impact of oil price hike was most visible in the sub-group of *fuel & lighting*. This sub-group has already been recording inflationary pressures in H1-FY05, but the uptrend became more pronounced during the latter half of FY05. Marginal inflation in this sub-group rose from 9.9 percent YoY during July 2004 to as high as 23.9 percent during June 2005. Moreover, the June 2005 data shows that the increase was quite broad-based with most of the items in the *fuel & lighting* recording double-digit YoY increase (see **Table 3.5**).
- During FY05, the movements of the *raw material* sub-index of WPI were driven largely by cotton prices due to the heavy weight of the commodity in the index as well as the sharp price changes during the year (see **Figure 3.11**). The fall in cotton prices during H1-FY04 was simply a reflection of the record cotton harvest, which also contributed to a weakness in the international price for the commodity. Towards the later months of FY05, however, cotton prices resurged partly amidst strong demand and concerns over the global FY06 cotton production.



Another significant component of WPI is the *building material* sub-index. While this has only a 4.73 percent weight in the overall WPI, it has a much greater indirect impact on CPI inflation, through its contribution to the HRI. After witnessing sharp increases through most of FY04, the *building material index (BMI)* has seen equally large

declines thereafter (see **Figure 3.12**). The largest contribution to this fall was from a drop in international iron and steel prices, as well as fiscal measures by the government to reduce domestic prices. This was supported by declines in prices of paint and varnishes.

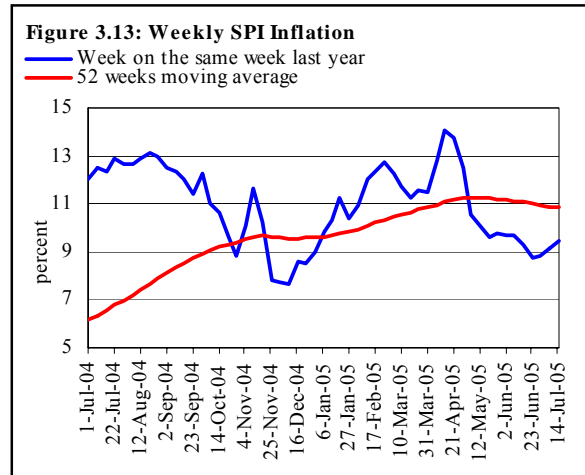
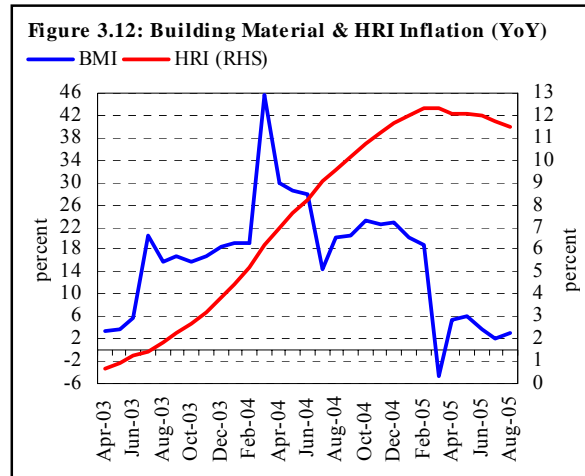
Table 3.5: WPI Items Classified by Range of Price Changes (YoY) (June-05)

Groups	Weights	Decrease or no change	Subdued increase (up to 5%)	Moderate increase (5 to 10%)	Increase of over 10%
Food group	42.12	Beverages Cotton seed Vegetables Vegetable ghee Cooking oil Tea Vegetables Oil cakes Sugar confectionary Mustard & R Mineral water	Spices Condiments Fruit prepared Gram split Wheat flour Milk food Maida Eggs Fresh fruit	Chicken Rice Salt Wheat Fish Fresh milk	Meat, masoor Powdered Mi Beans, besan Dry fruits Mash, moong Gram whole Sugar refined Tomatoes, onion Jowar, bajra, gur Potatoes, maize
Raw materials	7.99	Cotton, pig iron Wool, skins Cotton seed	Mustard/rap	Tobacco	Sugar cane Hides
Fuel & lighting	19.29	Coke Elec. agric Electricity		Coal Mobil oil	Fire wood Natural gas Kerosene oil Diesel oil Motor sprit Furnace oil
Manufactures	25.87	Cotton yarn Nylon yarn Audio-visual Dying mater Jute manufacture. Transports Pesticides Cosmetics Woolen text Glass product	Drugs & med Plastic pro Utensils, matches Ready made Blended yarn Silk & reyo Cotton text Other elect Foot wear Mattresses Machinery Paper, hosiery	Chemicals Tubes Fertilizers	Sole leather Tyres Cigarettes Chrome leather Soaps
Building material	4.73	Paints & varnishes Cement bloc Timber Tiles	Glass sheet Cement Sanitary ware	Pipe fitting Iron bars & Wires and C	Bricks

3.7 Sensitive Price Indicator

Sensitive Price Indicator (SPI), which is a subset of the CPI, consists of 53 items, mostly from the *food* subgroup¹¹. The weekly data on the SPI is therefore a good leading indicator for the monthly CPI inflation (particularly if CPI inflation is led by food inflation).

As a consequence of the high *food* inflation and rising oil prices, the week over week SPI inflation remained in double digits for most weeks of FY05. The 52 weeks moving average inflation that was rising sharply, until November 2004, become somewhat stable by the close of FY05 (see **Figure 3.13**). The stability that is visible in the moving average inflation during the last few months is due to some corrections witnessed in the prices of important food staples during the last two months of FY05.



¹¹ Other items represent some of the subgroups of CPI, importantly petrol and diesel are also included in the SPI basket

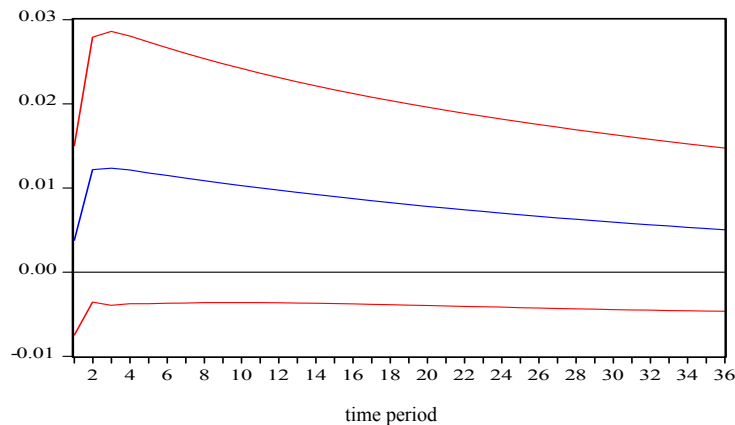
Box 3.1: International Oil Prices Pass-through to Domestic inflation in Pakistan

Rising international oil prices have been an important determinant of the inflationary trend in Pakistan during FY05. The rise in international oil prices leads to upward adjustments in domestic oil prices, which, in turn, impacts inflation through direct and indirect channels. In case of the direct channel, the upward adjustments in oil prices increase inflation to the extent of its weighted contribution in the overall price indices i.e., CPI, WPI, and SPI. As petroleum products are used as inputs in the production and transportation of several other commodities, prices of all those commodities also rise with oil prices, contributing indirectly toward inflation. An IMF study (2004) attempted to quantify this phenomenon and estimated that a permanent increase of a US\$ 5 per barrel in crude oil prices is estimated to increase inflation by 60-70 basis points in major developing regions - more than three times the increase in industrial economies.

A recent study replicated this analysis for Pakistan¹² and estimated that the pass-through coefficient of oil price increases into domestic inflation is 0.29, which suggests that all other factors holding constant, US\$5 per barrel increase in international prices, if passed on to domestic consumers completely, would cause an approximately 1.45 percentage point rise in the headline CPI. However, the underlying estimated model had an *omitted variable bias*. The omission of relevant variables such as output, money supply etc. from the model induces either upward or downward bias in the estimated coefficient, depending on the correlation between omitted and existing variables, rendering the results and its interpretation less credible.

An attempt¹³ has been made to obtain a better estimate by using a 4-variable first difference log VAR model incorporating international oil prices, output (seasonally adjusted LSM), broad money (M2) and CPI. Optimal lag length is one, which is selected on the basis of different lag lengths criteria (such as FPE, AIC, SC, and HQ). The VAR model also satisfies the stability condition. The impulse response function recovered from the estimated VAR model shows that one standard deviation shock in international oil prices lead to persistence effect on CPI, however, the effect is mostly felt in second month following the shock (see **Figure B-3.1**). The direct impact of 1 percent increase in international oil prices would lead to a rise of 0.30 percentage points in the domestic CPI index over three years. The slower convergence of this shock reveals that the rise in oil prices generates an inflationary spiral. As a result of an increase in oil prices, transport fares, utility charges and prices of some food items rise. Due to a permanent rise in the cost of living, support services (e.g. education, laundry, wages of home made etc.) also see increasing trend. Thus, increase in the key fuel prices has both direct and indirect impact on domestic inflation.

Figure B-3.1: Response of CPI to one S.D. shock in International Oil Prices



¹² ABN Amro Bank (2005), Economic Focus – Pakistan, The dark side of the force, May 30, Islamabad.

¹³ Moinuddin and Zulfiqar Hyder (2005), Impact of International Oil Prices on Domestic Inflation, Working Paper (in progress).