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# **Seasonality in Government Expenditure Examined**

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# Seasonality in Government Expenditure examined

M.R. Anand \*

## ABSTRACT

Expenditure controllers in the Government are well aware of the problem of bunching of expenditure at the end of the year. The paper attempts to re-examine this phenomena. It is argued that response to this annually recurring problem of bunching should not be that of simply laying down uniform spending norms. Measures to prevent bunching call for taking into account the composition of expenditure and the nature of programmes being implemented by different spending departments.

- Introduction
- Variations In Centre's Expenditure
- Phasing of Non Plan & Plan Expenditure: A Comparision
- Problem of Bunching of Expenditure
- Plan Expenditure of some Major Ministries / Depts.
- Factors underlying Expenditure Patterns
- Phasing of Expenditure and Receipts
- Observations

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*\* The paper was written when the author was working as Director, Financial Resources Division, Planning Commission, Government of India . The author would like to thank Dr. N.J. Kurian,, Dr. Pronab Sen, and Dr. Sharad Kumar, then in the Planning Commission. However, the views expressed are of the author and may not be attributed to the Planning Commission or to the Government of India or the individuals mentioned above.*

## Seasonality in Government Expenditure examined

**Introduction:** Most economic variables exhibit seasonal movements over the course of a year. Periodic fluctuations within a year are often attributed to changes in weather, payment cycles and other institutional factors. Government expenditure is no exception. It also exhibits systematic fluctuations within a year.

The phenomenon of bunching of government expenditure due to 'year-end spending' is so well known to expenditure controllers that it is almost accepted as a fact of life. It is no doubt perceived as a problem, on account of the inconvenience caused in issuing large number of sanctions, releasing payments and finalizing accounts in the last month of the financial year. The reasons for 'bunching' seem to be so well internalized that there is hardly any discussion on the subject or interest in examining (afresh) the factors that underlie this phenomenon <sup>1</sup>.

The paper attempts to reexamine this well-known problem of bunching of expenditure in India using data on expenditure on ministries of the Union Government (also termed as the Central Government). Needless to say, an understanding of the periodicity and fluctuations in Government Expenditure is important for management and control of expenditure. The phenomenon of bunching of expenditure has been analyzed against the backdrop of seasonal variation in government expenditure. This is done first for the Central Government as a whole. The expenditure pattern of some selected Central Ministries has then been examined to see whether the variations in expenditure within the year are attributable to the same set of factors. The focus is mainly on Plan expenditure which in India is broadly comprises of expenditure on developmental programmes and projects and excludes government expenditure of an ongoing type on salaries, maintenance and upkeep.

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<sup>1</sup> The Union Budget 2003-04, introduced a Cash management scheme for major spending departments of the Central Government to deal with the problem of phasing of expenditure.

**Monthly and quarterly variations in Centre's expenditure:** An analysis of the quarterly phasing of expenditure of the Central Government during 2001-02 (Table 1) shows unambiguously the unevenness in phasing of both plan and non-plan expenditure. The share of expenditure increases over the successive quarters. As a consequence there is bunching of expenditure in the last quarter. The bunching is more pronounced in the case of total plan expenditure as compared to Non-plan expenditure (excluding interest payments).

**Table 1**  
**Quarterly phasing of Expenditure of the Centre**  
**(FY 2001-02)**

Period	Total Plan Expenditure* (%)	Plan Expenditure of Central Ministries (%)	Total Non Plan Expenditure** (%)
<b>Q1</b>	17.7	15.4	19.4
<b>Q2</b>	20.1	18.0	21.9
<b>Q3</b>	24.0	25.3	23.5
<b>Q4</b>	38.2	41.3	35.2
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

*\*Including Central Assistance for State/ UT Plan*

*\*\*Excluding interest payments*

It is worth noting that within Plan expenditure, the Plan expenditure of the Central Ministries (and Departments) is relatively more skewed towards the last quarter as compared to the total Plan expenditure (which is inclusive of plan assistance to States). It could therefore be inferred that releases of Central assistance for State plans is more evenly distributed over the year as compared to the plan expenditure of Central Ministries.

**Phasing of Non Plan and Plan Expenditure of the Centre: A Comparision:** About 65 percent of non-plan expenditure is incurred in the first three quarters, the corresponding figure in the case of plan expenditure of Central ministries in only 59 percent. Monthly and cumulative phasing of plan and non-plan expenditure of Central ministries and Departments is given in Figures 1 and 2 respectively.

Non-plan expenditure consists primarily of salaries, pensions, subsidies, non-plan grants to states and PSUs, Defence expenditure (revenue and capital) and other non-plan capital expenditure. (We have excluded interest payments in this exercise in view

of the contractual nature of such payments). Most of these items of expenditure (other than Defence capital expenditure) are pre-determined and not subject to seasonal or other variations. This, perhaps, explains why non-plan expenditure shown in Figure 2 follows a relatively more even pattern. It may be added that the year-end bunching in the case of non-plan expenditure is pre-dominantly due to non-plan capital expenditure (the details of which are not discussed in this note).

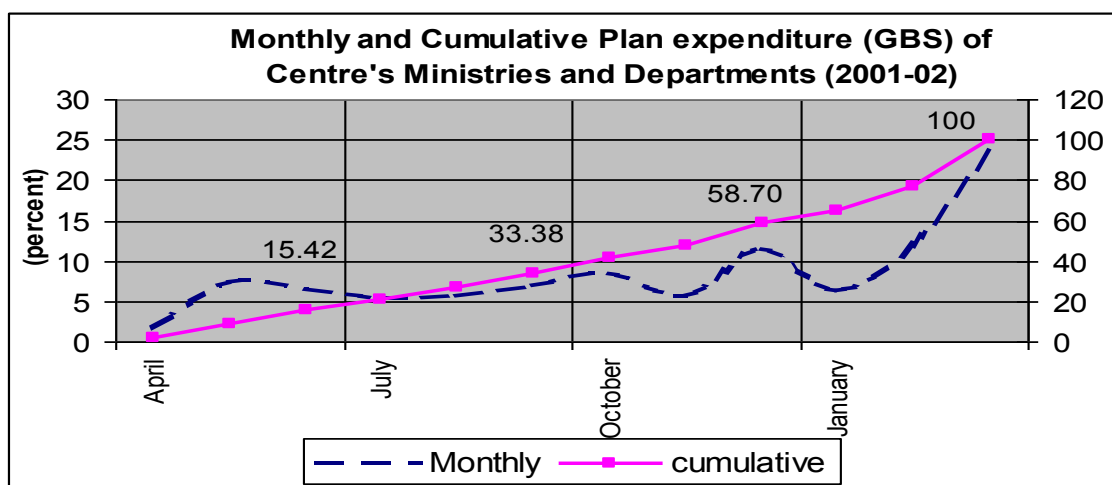


Figure 1

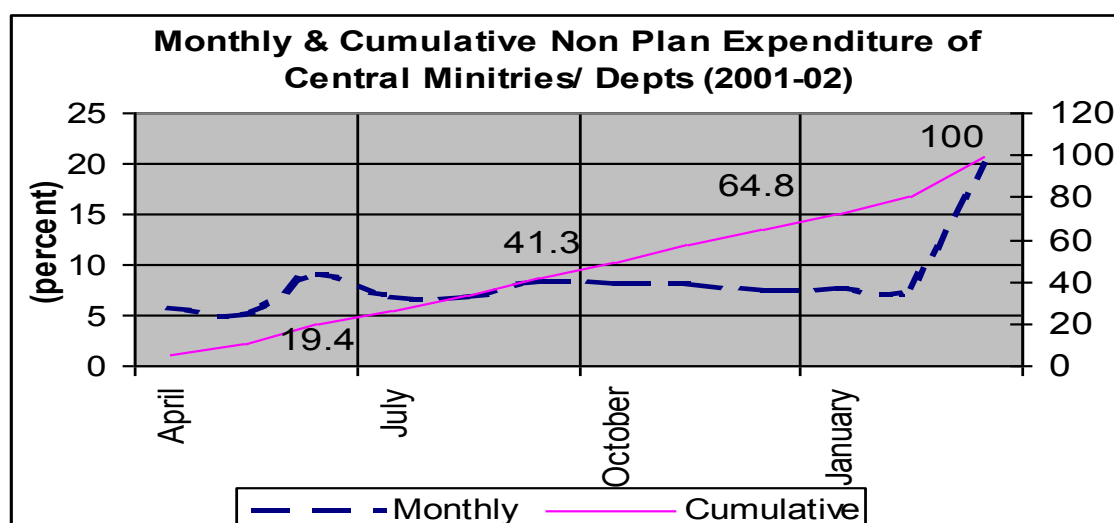


Figure 2

**Problem of bunching of Plan expenditure of Central Ministries:** The quarterly phasing of Plan expenditure of Central ministries (and Departments) for the past three years (Table 2) shows that there is bunching of expenditure in the last quarter of the

year, which is of the order of 41 to 49 percent. Bunching of plan expenditure is therefore a recurrent feature every year.

**Table 2**  
**Percentage Share of Actual expenditure during**  
**each quarter**

Year	Q1	Q2	Q3	Q4
2000-01	18.0	20.0	17.9	44.1
2001-02	15.4	18.0	25.3	41.3
2002-03 *	13.6	20.0	17.9	48.5

\* For 2002-03 the shares have been worked out w.r.t. RE

**The Budget and the vote on account: Does it account for the slow start?** The Budget of the Centre gets presented by the end of February each year. The expenditure for the first two months (i.e., April and May) is incurred on the basis of a 'vote on account' and is limited to 1/6 of the annual demand. The Demand for grants for Central ministries usually gets passed by mid-May. It is noticed that expenditure incurred by most departments during this period is generally well below the percentage allowed by the 'vote on account'. While the ceiling placed on expenditure may be a psychological barrier to incurring higher expenditure, the low level (and share) of expenditure in the first month and in the first quarter suggests that the time lag in obtaining parliamentary approval for the budget, does not, *by itself*, account for year end bunching of expenditure. At the same time, it is difficult to accept that the year-end bunching is **pre-planned** for all ministries. The issue therefore needs to be examined at a greater level of disaggregation.

**Plan Expenditure of some of the Major Ministries / Depts.:** In order to see whether variations in plan expenditure are similar across different ministries / departments of the Central Government, the Monthly and Quarterly plan expenditure of ten departments of the Centre were analyzed. The details may be seen at Annexure 1 and 2.

These ten departments account for about *70 percent* of Centre's Plan expenditure. An analysis of the monthly pattern of expenditure reveals the following:

a) The spending cycle of different ministries is not identical. Hence, what we see in the aggregate spending pattern of Plan expenditure by the Central government, as a whole is not necessarily true for each of the ministry / Department.

b) For a given ministry the monthly variations in expenditure get repeated in a somewhat similar fashion (year after year). In other words, the phasing of expenditure for each ministry appears to be dictated by factors that are specific to functioning of that ministry.

*The following examples are illustrative of (a) and (b)*

i) In the case of the Ministry of Rural Development, maximum expenditure takes place during the first and last quarters (Figure 3). The Ministry of Science and Technology and the Ministry of Agriculture also exhibit a similar pattern of Plan expenditure.

ii) The Ministry of Power spends a large share (approx. 60 percent) in the last few months of the year. The spending pattern of the Ministry of Power may be seen from figure 4. The Ministry of Railways also exhibited this pattern in some years (2001-02).

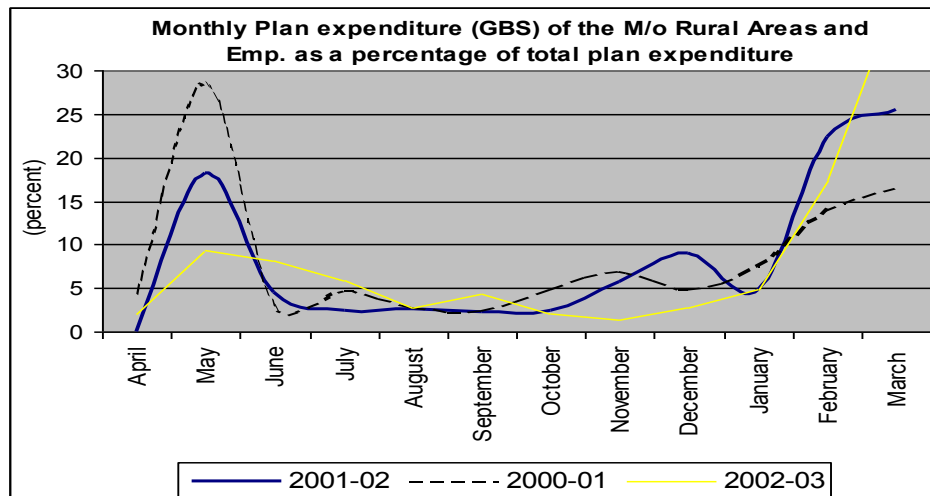
iii) The Ministry of Urban Development (Fig.3) has a pre-dominant mid-year peak in its expenditure, which makes this pattern very different from that of other ministries.

iv) Certain Ministries like Health and Family Welfare, HRD, Social Justice and empowerment and Environment and Forests have a relatively well spread out pattern of expenditure subject to the following observation.

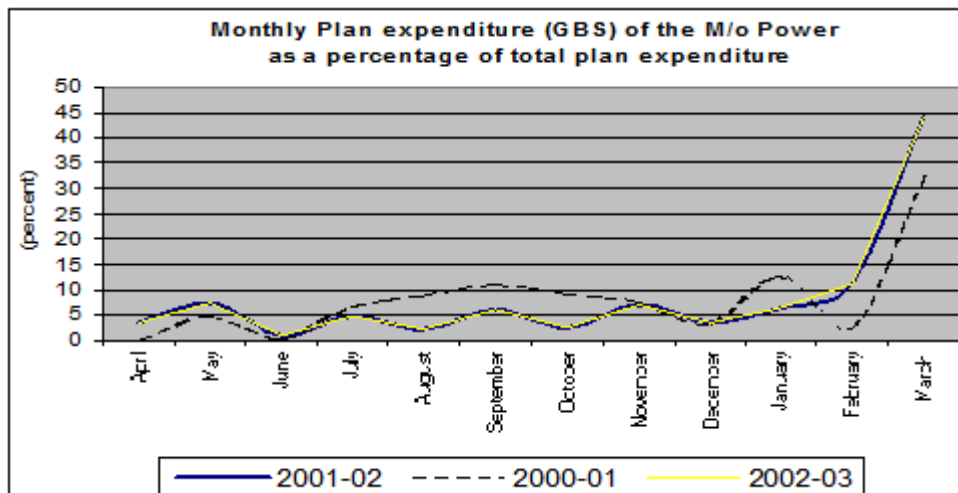
c) Regardless of the above, almost all the selected ministries exhibit bunching of expenditure in the last quarter (Refer Annexure Table 1). While the aggregate plan expenditure in the last quarter for the Centre is around 40 percent, in the case of the Ministry of Power it is as high as 60 percent.



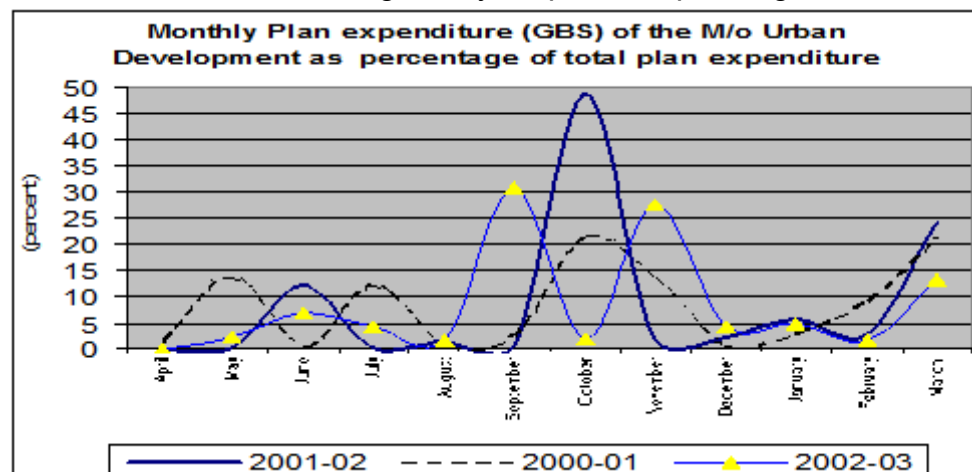
**Figure 3**  
Monthly Expenditure of Ministry of Rural Development exhibiting a 'U' shaped expenditure curve



**Figure 4**  
Monthly Expenditure Pattern of Ministry of Power that shows high proportion of expenditure towards the end of the year



**Figure 5**  
Monthly Expenditure pattern of Ministry of Urban Development Showing mid- year peak in spending



**Different factors at play:** The variations in expenditure patterns across different ministries suggest that there may be specific factors that determine the expenditure pattern for each Ministry. Going into the details of specific factors is beyond the scope of this paper. However, it may be worthwhile to enumerate a few factors that deserve further investigation.

*a) The timing of release of funds to States for 'Centrally sponsored schemes' may have a role in determining the phasing of expenditure especially in the case of Ministry of Rural Development. In other words, the structuring of schemes and the pattern of release of funds lead to seasonality and bunching of expenditure.*

*b) Departments with a larger share of capital expenditure are likely to show greater bunching towards the end of the year. It may, therefore, be useful to segregate the phasing of Capital and Revenue Expenditure, while analyzing the causes in further detail. However, monthly data on plan expenditure released by the Office of Controller General of Accounts (used in this note) does not enable us to draw any further conclusions on this account.*

*c) Closely related to the above is the impact of timing of 'clearances' of new plan schemes on the phasing of expenditure. There is, however, no published information available on how many new schemes are cleared on a monthly basis by the different appraisal committees like the 'Standing Finance Committee', 'Expenditure Finance Committee', 'Public Investment Board' or the 'Committee on Non Plan Expenditure' and on the time lag in actual expenditure.*

*d) In certain cases the Revised Estimates (RE) substantially exceeds the Budget estimates. As a consequence, the year-end bunching of expenditure gets further exaggerated (Refer row 7c of Annexure 1).*

It is possible that relative importance of each of these factors may vary across spending departments. Furthermore, many Central Ministries and Departments transfer funds to implementing agencies<sup>2</sup> functioning under them or to the State Governments. Therefore bunching of expenditure of the Central Ministries need not necessarily correspond to bunching of final expenditure. Nevertheless, identifying underlying dominant cause of bunching for a particular ministry or a department is the first step towards understanding whether bunching is due to serious problems like lack of capacity to absorb funds or slow decision-making, or, is of no particular consequence.

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<sup>2</sup> *Termed in official parlance as autonomous, attached or subordinate offices*

**Phasing of Expenditure and Receipts:** The phasing of expenditure cannot be considered to be totally independent of the pattern of receipts of the Centre. By definition, the phasing of both Expenditure and Receipts has to be identical on the aggregate. However, the components of each do not necessarily follow the same pattern (as already seen on the expenditure side). A comparison of the main components of Receipts and Expenditure is given in Table 3.

**Table 3**  
**Quarterly phasing of Receipts and Expenditure of the Centre**  
*(Figures in percent)*

<b>Phasing of Revenue</b>					
	Year/Qtr	Q1	Q2	Q3	Q4
<b>Revenue Receipts</b>	2000-01	15.8	27.3	25.8	31.1
	2001-02	10.7	28.4	26.4	34.6
<b>Capital Receipts</b>	2000-01	20.1	15.4	18.7	45.8
	2001-02	27.8	14.3	22.5	35.3
<b>Phasing of Expenditure</b>					
	Year/Qtr	Q1	Q2	Q3	Q4
<b>Total Non-Plan Expenditure of the Centre</b>	2000-01	16.3	23.7	21.2	34.8
	2001-02	18.3	23.1	25.0	33.6
<b>Total Plan Expenditure of the Centre</b>	2000-01	22.6	20.6	18.2	38.6
	2001-02	17.7	20.1	24.0	38.2
<i>Of which Plan Exp. Of Central Depts.</i>	2000-01	18.0	20.0	17.9	44.1
	2001-02	15.4	18.0	25.3	41.3
<b>Total Receipts &amp; Total Expenditure</b>	<b>2000-01</b>	<b>17.5</b>	<b>22.4</b>	<b>22.9</b>	<b>37.1</b>
	<b>2001-02</b>	<b>18.1</b>	<b>22.3</b>	<b>24.7</b>	<b>34.9</b>

The phasing of the receipts side shows that both revenue and capital receipts are also bunched towards the last quarter. The revenue receipts in taxes include income tax and corporate tax is determined by the due dates for payment of such taxes as prescribed by the CBDT. On the other hand payment of indirect taxes is linked to the scale of commercial activity and the transaction in goods at different points of time. Borrowings constitute a major component of capital receipts. The timing of government borrowing during the year is predominantly determined by the liquidity conditions in the market. On account of these factors, the control of the government over the phasing of timing of its receipts is only partial. The government has to therefore finance temporary mismatches between the total expenditure and receipts through the 'ways and means' 'advances'.

The limited point being made above is that expenditure management of the government is closely intertwined with the problem of short-term macroeconomic management of revenues and its phasing. As such, policy-induced changes in the phasing of one (of the components) would necessarily entail changes in the other.

**Observations:** This paper shows that the phenomenon of bunching of expenditure of Ministries and Department of the Government needs to be viewed against the backdrop of the phasing of expenditure. The simple graphical analysis has shown that there are considerable variations in the phasing of plan expenditure over the months and quarters between different departments. These variations arise on account of the differences in the pattern of release of funds. The phasing also appears to be contingent on the type of programmes, schemes, and projects being implemented or funded by them. The proportion of Revenue and Capital expenditure in different ministries is likely to have a bearing on the phasing of expenditure. Furthermore, expenditure management of the government is intertwined with the problem of macroeconomic management of revenues and its phasing. Policy-induced changes in the phasing of one of the components would necessarily entail changes in the other.

An important objective of the expenditure management in the Government (within the time frame of a year) is that funds are utilized according to a well-conceived plan for the stated purpose or programme. It is hard to accept that bunching of expenditure is an outcome of deliberate intent. At the same time, mere reiteration of the need to avoid rush of expenditure may not be a very fruitful approach in dealing with the problem. The paper points to the need to examine the factors that underlie bunching in order to achieve higher efficiency in public expenditure.

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# Annex 1

## Quarterly Expenditure pattern of Selected Ministries/ Departments

Sl. No.	Ministry/ Dept.	Year	BE	RE	Actual Expenditure (AE)	RE / BE	AE / BE	Percentage of Actual Expenditure incurred			
			Figures in Rs. Crore			(%)	(%)	Q1	Q2	Q3	Q4
1a	Agriculture	2000-01	2930	2507	2464	86	84	24	27	18	32
1b	Agriculture	2001-02	2954	2894	2682	98	91	32	16	16	37
1c	Agriculture	2002-03	3242	2632	2632	81	81	18	30	17	36
2a	HRD	2000-01	6910	6300	6174	91	89	20	19	18	43
2b	HRD	2001-02	7570	7220	7187	95	95	14	27	22	37
2c	HRD	2002-03	9225	8327	8327	90	90	15	19	26	39
3a	Environment and forests	2000-01	850	610	608	72	71	12	24	20	45
3b	Environment and forests	2001-02	800	900	892	113	112	12	32	20	36
3c	Environment and forests	2002-03	990	940	940	95	95	16	31	20	33
4a	Health	2000-01	4920	4478	4330	91	88	21	21	20	38
4b	<b>Health</b>	<b>2001-02</b>	<b>5780</b>	<b>5140</b>	<b>5023</b>	<b>89</b>	<b>87</b>	<b>25</b>	<b>16</b>	<b>40</b>	<b>19</b>
4c	Health	2002-03	6630	5671	5671	86	86	10	31	19	40
5a	Power	2000-01	2641	2706	2284	102	86	5.3	27	20	48
5b	Power	2001-02	2828	3650	3039	129	107	12	13	13	62
5c	Power	2002-03	3300	2600	2600	79	79	12	13	13	62
6a	Railways	2000-01	3291	3540	3269	108	99	25	25	25	25
6b	Railways	2001-02	3540	5138	5533	145	156	16	14	18	52
6c	Railways	2002-03	5390	5740	5740	106	106	17	22	32	30
7a	Rural Development	2000-01	9760	9270	8868	95	91	36	9.8	17	38
7b	Rural Development	2001-02	9765	13567	13452	139	138	23	7.3	17	53
7c	Rural Development	2002-03	13670	18376	18376	134	134	20	13	6.1	61
8a	Science and technology	2000-01	842	829	806	99	96	31	14	23	32
8b	Science and technology	2001-02	945	925	908	98	96	33	15	19	33
8c	Science and technology	2002-03	1290	1142	1142	89	89	20	24	15	41
9a	Social Justice and Empowerment	2000-01	1350	1173	1114	87	83	3.5	28	18	51
9b	Social Justice and Empowerment	2001-02	1332	1240	1211	93	91	4.6	32	19	45
9c	Social Justice and Empowerment	2002-03	1410	1225	1225	87	87	17	8.1	29	46
10a	Urban Development	2000-01	1180	934	923	79	78	16	15	36	33
10b	Urban Development	2001-02	1205	1938	1909	161	158	12	2.4	53	33
10c	<b>Urban Development</b>	<b>2002-03</b>	<b>1525</b>	<b>2768</b>	<b>2768</b>	<b>182</b>	<b>182</b>	<b>9.4</b>	<b>37</b>	<b>34</b>	<b>20</b>
<b>All Central Ministries and Dept</b>											
I	<b>2000-01</b>		51276	48269	47369	94	92	18	20	18	44
II	<b>2001-02</b>		59456	60276	59605	101	100	15	18	25	41
III	<b>2002-03</b>		66871	68219	68219	102	102	14	20	18	49

## Annex 2

### Monthly Phasing of Plan Expenditure of Central Ministries and Depts.

Sl. No.	Ministry / Dept.	April	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
<b>2000-01</b>														
1	Agriculture	4.4	4.4	14.7	6.4	2.1	18.2	1.6	8.5	8.0	4.6	7.5	19.7	100
2	Environment and forests	1.6	2.4	8.0	14.2	3.0	6.4	11.3	5.1	3.1	13.2	12.8	19.1	100
3	Health	0.9	7.0	12.9	2.8	10.7	7.9	14.4	2.3	3.0	10.9	4.7	22.5	100
4	Education	0.5	11.8	7.6	4.5	8.0	6.2	10.2	5.6	2.5	11.8	7.0	24.4	100
5	Power	0.0	4.8	0.5	6.8	8.9	11.2	9.3	7.7	3.2	12.8	2.6	32.1	100
6	Rural Development	4.3	28.5	3.0	4.7	2.8	2.4	4.8	7.0	4.9	7.4	13.9	16.4	100
7	Science and technology	2.6	8.8	19.2	5.6	4.3	4.5	8.8	11.9	2.7	4.4	5.5	21.8	100
8	Railways	7.9	2.3	14.9	8.4	8.4	8.4	8.4	5.3	11.5	0.7	4.6	19.2	100
9	Urban Development	1.5	13.9	0.6	11.9	0.8	2.6	21.6	13.5	0.8	2.8	9.1	20.9	100
10	Social Justice and Empowerment	0.2	0.6	2.7	2.4	1.8	24.0	1.6	7.4	8.7	6.4	23.1	21.2	100
	<b>Grant total (All Depts.)</b>	<b>2.1</b>	<b>9.7</b>	<b>6.2</b>	<b>4.2</b>	<b>9.2</b>	<b>6.6</b>	<b>7.3</b>	<b>5.3</b>	<b>5.2</b>	<b>8.0</b>	<b>8.0</b>	<b>28.2</b>	<b>100</b>
<b>2001-02</b>														
1	Agriculture	4.0	3.2	24.8	4.6	5.5	5.4	2.7	10.0	3.1	2.9	8.5	25.2	100
2	Environment and forests	0.8	5.1	6.4	17.9	2.2	11.6	8.2	5.4	6.6	22.4	3.7	9.7	100
3	Health	4.4	6.0	14.8	6.4	4.2	5.3	18.1	5.6	16.0	3.8	3.9	11.6	100
4	Education	1.0	8.7	4.5	11.4	6.7	8.7	8.9	2.5	10.2	9.3	8.7	19.4	100
5	Power	3.5	7.4	1.0	4.6	2.3	6.0	2.5	6.9	3.6	6.4	11.3	44.3	100
6	Rural Development	0.0	18.3	4.6	2.4	2.7	2.2	2.4	5.8	9.1	4.8	22.4	25.4	100
7	Science and technology	3.2	8.2	21.0	5.2	5.8	4.1	4.9	11.0	3.5	3.4	5.4	24.3	100
8	Railways	5.3	0.5	10.2	5.3	1.4	6.9	7.7	5.3	5.3	5.3	12.3	34.4	100
9	Urban Development	0.0	0.2	12.2	0.4	1.4	0.6	48.6	1.8	2.2	5.6	2.9	24.1	100
10	Social Justice and Empowerment	0.1	1.4	3.2	12.0	9.3	10.6	5.5	8.6	4.6	8.4	19.3	17.1	100
	<b>Grant total (All Depts.)</b>	<b>1.6</b>	<b>7.3</b>	<b>6.5</b>	<b>5.5</b>	<b>5.7</b>	<b>6.8</b>	<b>8.4</b>	<b>5.5</b>	<b>11.4</b>	<b>6.3</b>	<b>11.8</b>	<b>23.2</b>	<b>100</b>
<b>2002-03</b>														
1	Agriculture	0.2	2.2	15.1	19.0	9.2	1.8	11.1	1.5	3.9	8.4	7.6	19.9	100
2	Environment and forests	7.7	3.3	5.0	9.7	5.4	16.2	4.0	7.5	8.2	8.9	10.7	13.4	100
3	Health	0.8	7.7	2.0	19.1	5.4	6.0	12.3	2.0	4.7	3.5	9.6	27.0	100
4	HRD	0.0	3.6	11.7	8.5	5.7	5.2	7.6	9.9	8.6	8.2	9.4	21.6	100
5	Power	3.5	7.4	1.0	4.6	2.3	6.0	2.5	6.9	3.6	6.4	11.3	44.3	100
6	Rural Development	2.1	9.3	8.1	5.9	2.8	4.4	2.0	1.4	2.7	4.9	17.6	38.8	100
7	Science and technology	2.3	10.1	7.1	17.9	2.3	4.1	4.4	2.6	8.3	7.0	7.6	26.2	100
8	Railways	4.9	3.5	8.8	14.0	-2.7	10.2	15.9	7.8	7.8	7.8	11.0	10.8	100
9	Urban Development	0.1	2.4	6.9	4.3	1.7	30.7	2.1	27.5	4.3	4.9	1.6	13.3	100
10	Social Justice and Empowerment	0.0	5.4	11.4	2.9	3.9	1.2	14.7	4.9	9.1	14.1	3.7	28.5	100
	<b>Grant total (All Depts.)</b>	<b>1.68</b>	<b>5.1</b>	<b>6.8</b>	<b>9.3</b>	<b>4</b>	<b>6.7</b>	<b>6.8</b>	<b>5.8</b>	<b>5.3</b>	<b>12</b>	<b>10</b>	<b>25.7</b>	<b>100</b>