

$$\ln(X_{i,t} / X_{i,t-1}) = \sum_{m=1}^{12} a_m \times MDummy(m) + \sum_{m=1}^{12} b_m \times MDummy(m) \times FY2003ADUMMY, \text{ where } X_{it} = Y_{it} \text{ or } C_{it}. \quad (1)$$

$$+ \beta Z_t + \varepsilon_{i,t}$$

The dependent variables are monthly changes in the logarithm of household head income (Y_{it}) or household consumption expenditure (C_{it}). We use both total and disaggregated consumption categories for the C_{it} regressions. Both variables are converted to real terms using the consumer price index. The independent variables consist of month dummies to capture seasonality in a normal year and interaction terms between the month dummies and a dummy variable for FY2003 and after, which takes 1 for each month after April 2003 and zero otherwise. If there was a change in monthly income/consumption patterns from FY2003 onward, the estimated coefficients on the interaction terms should be statistically significant. On the other hand, if there was no such change, these coefficients should be insignificant. In addition, we include the nominal interest rate as our control variable (Z_t). The last term is a well-behaved error term.

Column [1] of Table 3 reports the result for the income regression. The coefficients on the monthly dummies (a_m ; $m=1,2,\dots,12$) reflect income seasonality for a normal year until FY2001. The seasonality from FY2003 can be derived as the sums of the month dummy coefficients and the interaction term coefficients ($a_m + b_m$; $m=1,2,\dots,12$). As can be seen in Figure 1, the income seasonality appears to result solely from the bonus payments, and we can observe a substantial income reduction for public employees in March 2004. While in normal years, household head

monthly income used to increase in March from February by 37 percent, the interaction term for March completely offsets the increase from FY2003 by a significantly negative coefficient of 38 percent, implying that the abolition of the March bonus virtually eliminated the March income increase for public employees. The policy effect is also seen in April income. For the control years until FY2001, April income used to decline by 37 percent from March income, but the decline shrank to only 7 percent in April 2004. The estimated coefficients clearly confirm that the abolition of the March bonus in 2004 substantially affected the seasonality of public employees' household income.

Given the clear change in income seasonality for public employee households, we turn to the changes in their consumption around March 2004 (columns [2]-[7]). The significantly positive coefficients on the month dummy for March indicate that, in normal years, households consumed more in March. However, what matters for us here is whether the seasonality is associated with the income seasonality. Therefore, we focus on the coefficients on the interaction terms. If household consumption was affected by the income reduction in March, the coefficient on the March interaction term (b_3) is expected to be negative and statistically significant.

The results, shown in Table 3, seem to be consistent with this expectation. The coefficients on the March interaction term are negative and significant, implying weak consumption in March 2004. This is the case not only for aggregate consumption but also for individual consumption components except service consumption. However, conceivably, the observed pattern may be affected by our choice of control years, which include all years from FY1991 to FY2001, with varying bonus payments (Table 1). In order to address this issue, we perform alternative estimations using FY1999 and

FY2000 only as our control years. In FY1999, total bonus payments decreased by 0.3 monthly regular incomes (from FY1998) and in FY2000, by 0.2 monthly regular incomes (from FY1999) – declines that are comparable to the 0.25 monthly regular income reduction in FY2003 (from FY2002).

Table 4 reports the results for these alternative estimations. We still obtain negative coefficients on the March interaction terms. However, in the expenditure regressions, most of the coefficients become statistically insignificant. In sum, while we find that consumption in March 2004 is weak, the findings seem to be sensitive to the choice of control years. There are a number of possible explanations to account for the differences between Table 3 and Table 4. One is that the choice of the control years in Table 4 is more accurate in the sense that the change in total annual bonus income in FY1999 and FY2000 was more in line with that in FY2003 than were changes in the FY1991–FY2001 period overall (as a cursory glance at Table 1 confirms). Another possibility is that the insignificant results in Table 4 resulted from the smaller sample size. In either case, we have not yet controlled for the possibility that other factors may have affected consumption in March 2004. We address this issue in the following section.

5. Including private-sector employee households as a control group

The results discussed in the previous section confirm that there was a change in the seasonality of public employee households' consumption in March 2004 (FY2003). Although the abolition of the March bonus in 2004 seems the most obvious candidate to account for the change, we have not yet excluded other possible factors unrelated to the abolition of the March bonus that may have affected consumption patterns in that month.

To examine this issue, we use our sample of private-sector employees as a control group. If something unrelated to the abolition of the March bonus, such as macroeconomic shocks, are responsible for the changes in consumption patterns in 2004, the inclusion of the control group in our sample should alter the coefficients on the interaction terms in which we are interested.

Concretely, we extend our dataset to include the private employee group and run the following regressions to see whether our findings on excess sensitivity obtained in the previous section are affected:

$$\begin{aligned}
\ln(X_{i,t} / X_{i,t-1}) = & \sum_{m=1}^{12} a_m \times MDummy(m) \\
& + \sum_{m=1}^{12} b_m \times MDummy(m) \times PUBLIC \\
& + \sum_{m=1}^{12} c_m \times MDummy(m) \times FY2003ADUMMY \quad (2), \\
& + \sum_{m=1}^{12} d_m \times MDummy(m) \times PUBLIC \times FY2003ADUMMY \\
& + \beta Z_t + \varepsilon_{i,t}
\end{aligned}$$

where $X_{i,t} = Y_{i,t}$ or $C_{i,t}$. The variables other than *PUBLIC* are the same as those in the previous section. *PUBLIC* is a dummy variable for public employees to distinguish them from private-sector employees. $a_m + b_m$ captures the seasonality of public employees' income or consumption in a normal year, while $a_m + b_m + c_m + d_m$ captures that for FY2003 and after. In this new specifications, we are able to decompose the reduction in consumption in March 2004 into the effect of the abolition of the March bonus (d_3) and other factors affecting March 2004 consumption (c_3). As in Table 3, we first use observations for FY1991 to FY2001 to control for the normal seasonal pattern.

Table 5 reports the coefficient estimates for the income regression (column [1]) and the consumption regressions (columns [2]-[7]). The result of the income regression confirms that the income seasonality change in March 2004 took place only for public employee households. For the private employee group, the coefficient on the March dummy capturing income increases from February to March in a normal year is only 1 percent (see a_3 in column [1]), i.e., very small, while that for the public employee group is 36 percent. The coefficient on the March interaction term (c_3) is also not significant, confirming that the negative impact of the abolition of the March bonus in 2004 was specific to public employee households.

Our main interest is, of course, to see how the interaction terms between the month dummy for March and the dummy for FY 2003 and after in the consumption regressions (d_3) are affected by the inclusion of the control group. Interestingly, the results indicate that once we add the private-sector employees as our control group, the negative coefficients on the interaction term seem to halve and completely lose their statistical significance. This is true not only for the total consumption regression but also for the disaggregated consumption regressions (see columns [2]-[7] in Table 5).

Thus, what we find is consumption smoothing, which becomes much clearer if we confine our control years to FY1999 and FY2000, years with a comparable reduction in total annual bonuses. Table 6 reports the results. With FY1999 and FY2000 as the control years, the economic significance of the coefficients on the interaction term (d_3) decreased further. If we take the results of the total consumption regression (column [2]), the coefficient now shrinks to a statistically insignificant -0.01 from a statistically significant -0.11 in Table 3. Thus, it appears that the weakness in consumption in March 2004 is not attributable to the abolition of the March bonus. In

other words, our experiment at best produces very weak support for excess sensitivity, despite the fact that the predicted income change analyzed in our paper came from a one-off large-sized exogenous change.⁸

6. Summary and conclusion

Despite the large literature on consumers' response to anticipated income changes, the empirical evidence remains inconclusive. This paper exploited an ideal experiment situation to provide more persuasive evidence on consumption smoothing in response to a predictable income change – the abolition of the March bonus from March 2004 (FY2003). Using household level panel data from the *Family Income and Expenditure Survey*, we explored how the change in bonus payments altered the seasonal consumption patterns of public employees in FY2003 and after.

In contrast with previous studies on anticipated income changes, which report excess sensitivity, we find only weak evidence that seasonal expenditure patterns were affected by an anticipated decrease in income, that is, the abolition of the March bonus. This result suggests that the LC/PIH broadly holds also in the case of an anticipated one-off large-sized income change and is in line with the findings of studies on large

⁸ The analysis presented here has concentrated on the consumption response in March 2004, i.e., the month that bonus was not paid for the first time. However, as described in Section 2, the bonus schedule was announced in the summer of the preceding year. A rational consumer who behaves dynamically therefore could have adjusted his or her consumption schedule already in summer 2002 in anticipation of the change. In order to examine this possibility, we replaced the dummy for FY2003 and after in regressions (1) and (2) with a dummy for FY2002. Using FY1991 and FY2000 as our control years and observations on public employees only, we found that the seasonal consumption pattern in FY2002 is different from that in a normal year; however, what we found is an *increase* (not a *decrease*) in consumption in August 2002 when the March bonus reduction was announced (see Appendix Table 1). Therefore, the hypothesis that consumers adjusted their expenditures one year ahead in anticipation of the abolition of the March bonus in 2004 seems to be rejected. This result does not change even if we add our control group of private-sector employee households (see Appendix Table 2). Consequently, we have to reconcile this insensitivity in consumption with our findings regarding the LC/PIH. The obvious explanation is that the change in the distribution of bonus payments within a year across months had only a very limited impact on the level of lifetime income for public-sector employee households.

and regular income movements, such as Browning and Collado (2001) and Hsieh (2003).

It could be argued that our finding is inconsistent with Johnson, Parker and Souleles's (2006) study, which is the most recent representative work to observe excess sensitivity, based on an analysis of the 2001 tax rebates in the U.S.. However, it is important to point out that the value of the tax rebate in 2001 was US\$300 or US\$600, while that of the March bonus before its abolition exceeded US\$1,000. We therefore suspect that the difference between our findings and those of Johnston, Parker and Souleles (2006) comes from the different sizes of the anticipated income change. In other words, even in the case where a policy change is a one-off, consumers are rational in the sense that they optimally adjust their consumption if the anticipated income change is relatively large. We conclude that the consumption smoothing predicted by the LC/PIH is a good approximation of actual consumer behavior.

REFERENCES

- Akerlof, George A. (2007). "The Missing Motivation in Macroeconomics," *American Economic Review*, vol.97(1), pp.5-36.
- Browning, Martin and Dolores Collado (2001). "The Response of Expenditures to Anticipated Income Changes: Panel Data Estimates," *American Economic Review*, vol.91(3), pp.681-692.
- Campbell, John Y., and N. Gregory Mankiw (1989). "Consumption, Income, and Interest Rates: Reinterpreting the Time Series Evidence," *NBER Macroeconomics Annual*, vol.4: pp.185-216.
- Hsieh, Chang-Tai. (2003). "Do Consumers React to Anticipated Income Changes? Evidence from the Alaska Permanent Fund," *American Economic Review*, vol.93(1), pp.397-405.
- Hori, Masahiro and Satoshi Shimizutani (2003). "Micro Data Studies on Japanese Household Consumption," *ESRI Discussion Paper Series No.15*, Economic and Social Research Institute, Cabinet Office, Tokyo, Japan.
- Johnson, David S., Jonathan A. Parker and Nicholas S. Souleles (2006). "Household Expenditure and the Income Tax Rebates of 2001," *American Economic Review*, vol.96(5), pp.1589-1610.
- Parker, Jonathan A. (1999). "The Reaction of Household Consumption to Predictable Changes in Social Security Taxes." *American Economic Review*, vol.89(4), pp.959-73.
- Paxson, Christina H, (1993). "Consumption and Income Seasonality in Thailand," *Journal of Political Economy*, vol.101(1), pp.39-72.
- Shapiro, Matthew D. and Joel Slemrod (1995). "Consumer Response to the Timing of

- Income: Evidence from a Change in Tax Withholding." *American Economic Review*, vol.85(1), pp.274-283.
- Shapiro, Matthew D. and Joel Slemrod (2003). "Consumer Response to Tax Rebates," *American Economic Review*, vol.93(1), pp.381-396.
- Shea, John. (1995) "Union Contracts and the Life-Cycle/Permanent-Income Hypothesis," *American Economic Review*, vol.85(1), pp.186-200.
- Souleles, Nicholas S. (1999). "The Response of Household Consumption to Income Tax Refunds," *American Economic Review*, vol.89(4), pp.947-58.
- Souleles, Nicholas S. (2002). "Consumer Response to the Reagan Tax Cuts," *Journal of Public Economics*, vol.85(1), pp.99-120.
- Wilcox, David W. (1989) "Social Security Benefits, Consumption Expenditure, and the Life Cycle Hypothesis." *Journal of Political Economy*, vol.97(2), pp.288-304.

**Table 1 Bonus Payments for Public Employees in Japan
(Ratio to Monthly Regular Income)**

	June	December	March	Total
FY1990	2.20	2.60	0.55	5.35
FY1991	2.20	2.70	0.55	5.45
FY1992	2.20	2.70	0.55	5.45
FY1993	2.20	2.60	0.50	5.30
FY1994	2.20	2.50	0.50	5.20
FY1995	2.20	2.50	0.50	5.20
FY1996	2.20	2.50	0.50	5.20
FY1997	2.20	2.50	0.55	5.25
FY1998	2.20	2.50	0.55	5.25
FY1999	2.20	2.25	0.50	4.95
FY2000	2.05	2.15	0.55	4.75
FY2001	2.05	2.10	0.55	4.70
FY2002	2.05	2.10	0.50	4.65
FY2003	2.05	2.15	0.00	4.20
FY2004	2.10	2.30	0.00	4.40

Source: National Personnel Authority.

Notes: June, December, and March correspond to the bonus payment months.

The figures in the table are the sums of the term-end allowance (*kimatsu teate*) and the diligence allowance (*kinben teate*).

Table 2 Basic Statistics (1991-2004)

	Total Sample		With-Bonus Private Sample		With-Bonus Public Sample	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
All Months						
Public Bonus Household Dummy	0.40	0.49	0.00	0.00	1.00	0.00
Private Bonus Household Dummy	0.60	0.49	1.00	0.00	0.00	0.00
Ratio of Bonus Income to Regular Income	0.36	0.85	0.36	0.89	0.38	0.80
Bonus Income	169,367	421,854	167,465	450,054	172,254	375,008
Total Consumption	302,834	201,233	302,570	200,410	303,236	202,480
Durable Consumption	19,956	112,125	18,999	111,765	21,408	112,655
Semi-Durable Consumption	38,992	45,706	38,581	45,589	39,616	45,877
Non-Durable Consumption	116,474	43,660	115,192	43,148	118,420	44,355
Service Consumption	127,413	122,363	129,798	121,883	123,792	123,003
Household Head Monthly Income	632,700	472,093	627,391	503,528	640,758	419,787
Household Head Occupation: Private Office Worker Dummy	0.60	0.49	1.00	0.00	0.00	0.00
Household Head Occupation: Public Office Worker Dummy	0.40	0.49	0.00	0.00	1.00	0.00
Household Head Age	41.72	8.88	41.18	8.90	42.53	8.79
Sex of Household Head	0.97	0.17	0.98	0.16	0.96	0.19
Size of Household	3.59	1.08	3.58	1.05	3.60	1.11
Monthly Income (Annual Income in Previous Year divided by 12)	64.14	22.51	64.37	23.98	63.78	20.06
Number of Observations	63,106		38,043		25,063	
March						
Public Bonus Household Dummy	0.36	0.48	0.00	0.00	1.00	0.00
Private Bonus Household Dummy	0.64	0.48	1.00	0.00	0.00	0.00
Ratio of Bonus Income to Regular Income	0.15	0.23	0.00	0.00	0.43	0.16
Bonus Income	69,706	106,003	0	0	193,646	84,933
Total Consumption	319,028	210,547	310,449	209,506	334,283	211,579
Durable Consumption	22,707	111,207	21,191	109,871	25,402	113,522
Semi-Durable Consumption	44,007	53,665	41,202	49,323	48,994	60,314
Non-Durable Consumption	120,213	42,416	117,447	41,182	125,132	44,109
Service Consumption	132,102	129,273	130,610	130,189	134,755	127,617
Household Head Monthly Income	525,470	199,598	451,741	165,548	656,565	187,367
Household Head Occupation: Private Office Worker Dummy	0.64	0.48	1.00	0.00	0.00	0.00
Household Head Occupation: Public Office Worker Dummy	0.36	0.48	0.00	0.00	1.00	0.00
Household Head Age	41.55	8.86	41.13	8.93	42.29	8.69
Sex of Household Head	0.97	0.17	0.97	0.16	0.96	0.20
Size of Household	3.60	1.07	3.59	1.05	3.63	1.12
Monthly Income (Annual Income in Previous Year divided by 12)	63.59	22.49	63.63	23.96	63.52	19.61
Number of Observations	5,670		3,629		2,041	
June						
Public Bonus Household Dummy	0.47	0.50	0.00	0.00	1.00	0.00
Private Bonus Household Dummy	0.53	0.50	1.00	0.00	0.00	0.00
Ratio of Bonus Income to Regular Income	2.14	0.62	2.25	0.77	2.01	0.36
Bonus Income	1,004,864	468,436	1,086,269	573,974	911,434	277,351
Total Consumption	303,045	205,743	310,375	205,151	294,631	206,149
Durable Consumption	26,399	140,018	27,034	137,463	25,669	142,923
Semi-Durable Consumption	39,904	46,940	42,053	46,094	37,437	47,785
Non-Durable Consumption	112,363	42,035	111,806	42,020	113,002	42,053
Service Consumption	124,380	105,070	129,482	103,139	118,523	106,968
Household Head Monthly Income	1,476,053	590,979	1,567,509	707,113	1,371,088	394,673
Household Head Occupation: Private Office Worker Dummy	0.53	0.50	1.00	0.00	0.00	0.00
Household Head Occupation: Public Office Worker Dummy	0.47	0.50	0.00	0.00	1.00	0.00
Household Head Age	41.55	8.91	40.70	8.83	42.52	8.91
Sex of Household Head	0.97	0.17	0.98	0.15	0.96	0.20
Size of Household	3.59	1.08	3.58	1.05	3.60	1.12
Monthly Income (Annual Income in Previous Year divided by 12)	65.02	22.47	66.04	24.54	63.85	19.77
Number of Observations	4,493		2,401		2,092	
December						
Public Bonus Household Dummy	0.35	0.48	0.00	0.00	1.00	0.00
Private Bonus Household Dummy	0.65	0.48	1.00	0.00	0.00	0.00
Ratio of Bonus Income to Regular Income	2.26	0.74	2.27	0.86	2.25	0.47
Bonus Income	1,041,827	503,728	1,048,988	578,814	1,028,716	323,630
Total Consumption	382,319	237,210	377,071	231,919	391,928	246,375
Durable Consumption	32,021	131,771	30,111	129,250	35,520	136,230
Semi-Durable Consumption	60,217	60,482	58,343	58,088	63,648	64,510
Non-Durable Consumption	148,786	58,497	146,484	57,970	153,000	59,233
Service Consumption	141,295	132,509	142,133	132,389	139,760	132,751
Household Head Monthly Income	1,516,109	624,444	1,509,395	701,540	1,528,401	450,190
Household Head Occupation: Private Office Worker Dummy	0.65	0.48	1.00	0.00	0.00	0.00
Household Head Occupation: Public Office Worker Dummy	0.35	0.48	0.00	0.00	1.00	0.00
Household Head Age	41.91	8.84	41.60	8.89	42.46	8.73
Sex of Household Head	0.97	0.17	0.97	0.16	0.96	0.19
Size of Household	3.58	1.07	3.57	1.05	3.59	1.12
Monthly Income (Annual Income in Previous Year divided by 12)	63.77	22.69	63.61	23.85	64.06	20.40
Number of Observations	5,546		3,587		1,959	

Table 3 Seasonality of Household Head Income and Consumption: Public Employees Only, FY1991-FY2001 vs. FY2003-

	[1]	[2]	[3]	[4]	[5]	[6]	[7]								
	Household Head Income	Total Consumption	Consumption Excluding Durables	Durable Consumption	Semi-Durable Consumption	Non-Durable Consumption	Service Consumption								
January	a1	-1.186	(0.003) ***	-0.322	(0.010) ***	-0.301	(0.008) ***	-0.375	(0.101) ***	-0.479	(0.027) ***	-0.328	(0.006) ***	-0.215	(0.015) ***
February	a2	0.009	(0.003) ***	-0.061	(0.010) ***	-0.061	(0.009) ***	0.036	(0.131) ***	-0.373	(0.028) ***	0.006	(0.006) ***	-0.069	(0.016) ***
March	a3	0.373	(0.003) ***	0.199	(0.011) ***	0.189	(0.009) ***	0.355	(0.129) ***	0.505	(0.030) ***	0.098	(0.006) ***	0.203	(0.016) ***
April	a4	-0.374	(0.004) ***	-0.090	(0.011) ***	-0.039	(0.010) ***	-0.334	(0.128) ***	-0.127	(0.031) ***	-0.060	(0.007) ***	-0.052	(0.017) ***
May	a5	-0.006	(0.004) ***	-0.038	(0.011) ***	-0.039	(0.010) ***	0.107	(0.134) *	-0.056	(0.031) *	0.001	(0.007) ***	-0.055	(0.017) ***
June	a6	1.109	(0.003) ***	-0.017	(0.011) ***	-0.025	(0.010) ***	0.261	(0.134) *	-0.009	(0.030) ***	-0.046	(0.006) ***	-0.032	(0.017) *
July	a7	-1.098	(0.003) ***	0.143	(0.011) ***	0.124	(0.009) ***	0.267	(0.122) ***	0.235	(0.030) ***	0.071	(0.006) ***	0.129	(0.016) ***
August	a8	0.036	(0.004) ***	-0.106	(0.012) ***	-0.079	(0.010) ***	-0.423	(0.131) ***	-0.440	(0.032) ***	-0.024	(0.007) ***	-0.044	(0.018) ***
September	a9	-0.039	(0.003) ***	-0.112	(0.011) ***	-0.108	(0.010) ***	0.161	(0.131) ***	-0.116	(0.030) ***	-0.067	(0.006) ***	-0.163	(0.017) ***
October	a10	0.035	(0.003) ***	0.034	(0.011) ***	0.039	(0.009) ***	0.144	(0.138) *	0.219	(0.029) ***	0.005	(0.006) ***	0.041	(0.016) **
November	a11	-0.005	(0.003) ***	-0.011	(0.011) ***	-0.018	(0.009) *	0.251	(0.134) *	0.053	(0.030) *	-0.018	(0.006) ***	-0.025	(0.017) **
December	a12	1.204	(0.003) ***	0.330	(0.011) ***	0.307	(0.009) ***	0.578	(0.110) ***	0.579	(0.030) ***	0.321	(0.006) ***	0.186	(0.017) **
January x FY2003&2004	b1	0.143	(0.012) ***	0.088	(0.039) **	0.124	(0.034) ***	-0.094	(0.353) ***	0.210	(0.106) **	0.096	(0.023) ***	0.065	(0.059) **
February x FY2003&2004	b2	-0.002	(0.013) ***	0.025	(0.042) ***	0.022	(0.036) ***	0.301	(0.468) ***	0.109	(0.117) ***	-0.014	(0.025) ***	0.033	(0.064) **
March x FY2003&2004	b3	-0.383	(0.013) ***	-0.113	(0.042) ***	-0.113	(0.037) ***	-1.015	(0.475) **	-0.309	(0.118) ***	-0.075	(0.025) ***	-0.073	(0.065) **
April x FY2003&2004	b4	0.302	(0.011) ***	0.040	(0.033) ***	0.034	(0.029) ***	0.740	(0.356) **	0.121	(0.093) **	-0.019	(0.020) ***	0.034	(0.051) **
May x FY2003&2004	b5	-0.031	(0.010) ***	-0.011	(0.033) ***	-0.015	(0.029) ***	-0.269	(0.337) ***	-0.039	(0.091) **	0.028	(0.019) ***	-0.037	(0.050) **
June x FY2003&2004	b6	-0.020	(0.010) **	-0.020	(0.032) ***	-0.017	(0.028) ***	-0.123	(0.361) ***	-0.060	(0.088) **	0.000	(0.019) ***	-0.015	(0.049) **
July x FY2003&2004	b7	0.023	(0.010) **	-0.081	(0.031) ***	-0.041	(0.027) ***	-0.467	(0.305) ***	0.006	(0.085) **	-0.006	(0.018) ***	-0.080	(0.047) *
August x FY2003&2004	b8	-0.026	(0.011) ***	0.099	(0.033) ***	0.051	(0.029) *	0.259	(0.332) ***	0.088	(0.092) **	0.025	(0.020) ***	0.062	(0.051) **
September x FY2003&2004	b9	0.030	(0.010) ***	0.028	(0.032) ***	0.057	(0.028) **	-0.684	(0.332) **	-0.036	(0.090) **	0.011	(0.019) ***	0.077	(0.050) **
October x FY2003&2004	b10	0.022	(0.011) ***	-0.029	(0.035) ***	-0.021	(0.030) ***	-0.164	(0.394) ***	0.034	(0.097) **	0.029	(0.020) ***	-0.071	(0.054) **
November x FY2003&2004	b11	-0.030	(0.012) ***	-0.027	(0.038) ***	-0.007	(0.034) ***	-0.240	(0.442) ***	0.006	(0.106) ***	-0.004	(0.023) ***	0.043	(0.059) **
December x FY2003&2004	b12	-0.152	(0.013) ***	-0.047	(0.042) ***	-0.101	(0.036) ***	0.164	(0.429) ***	-0.252	(0.116) ***	-0.060	(0.025) ***	-0.072	(0.064) **
F test: ai=0 for all i		44556.0 ***		255.3 ***		290.8 ***		7.1 ***		133.0 ***		579.6 ***		61.9 ***	
F test: bi=0 for all i		162.0 ***		2.8 ***		3.6 ***		1.5 ***		1.7 *		3.4 ***		1.2	
Adj. R-squared		0.961		0.119		0.132		0.014		0.066		0.236		0.031	
Root MSE		0.140		0.442		0.384		2.418		1.212		0.259		0.680	
Number of observations		23567		23567		23563		5290		23159		23567		23563	

Table 4 Seasonality of Household Head Income and Consumption: Public Employees Only, FY1999-FY2000 vs. FY2003-

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Household Head Income	Total Consumption	Consumption Excluding Durables	Durable Consumption	Semi-Durable Consumption	Non-Durable Consumption	Service Consumption
January	-1.160 (0.010) ***	-0.270 (0.033) ***	-0.244 (0.028) ***	-0.075 (0.330)	-0.387 (0.091) ***	-0.263 (0.019) ***	-0.145 (0.049) ***
February	-0.010 (0.009)	-0.063 (0.031) **	-0.058 (0.027) **	0.194 (0.380)	-0.371 (0.087) ***	-0.021 (0.018)	-0.037 (0.047) ***
March	0.301 (0.009) ***	0.131 (0.032) ***	0.140 (0.024) ***	0.215 (0.348)	0.385 (0.087) ***	0.073 (0.018) ***	0.150 (0.047) ***
April	-0.346 (0.008) ***	-0.105 (0.028) ***	-0.079 (0.024) ***	-0.458 (0.302)	-0.004 (0.078)	-0.029 (0.016) *	-0.103 (0.042) **
May	-0.014 (0.008) *	-0.049 (0.028) *	-0.058 (0.024) **	0.275 (0.308)	-0.113 (0.077)	-0.010 (0.016)	-0.082 (0.041) **
June	1.083 (0.008) ***	-0.025 (0.027)	-0.032 (0.023)	0.672 (0.328) **	-0.024 (0.075)	-0.066 (0.015) ***	-0.024 (0.040)
July	-1.097 (0.008) ***	0.142 (0.027) ***	0.116 (0.023) **	0.186 (0.296)	0.215 (0.074) **	0.064 (0.015) ***	0.146 (0.040) ***
August	-0.010 (0.009)	-0.131 (0.032) ***	-0.090 (0.027) ***	-1.176 (0.336) ***	-0.447 (0.087) ***	-0.045 (0.018) **	-0.045 (0.047)
September	-0.017 (0.010) *	-0.128 (0.034) ***	-0.108 (0.029) ***	0.174 (0.354)	-0.083 (0.095) ***	-0.065 (0.019) ***	-0.181 (0.051) ***
October	0.039 (0.010) ***	0.027 (0.032)	0.032 (0.028)	0.623 (0.393)	0.257 (0.090) ***	-0.017 (0.018)	0.068 (0.048)
November	-0.044 (0.010) ***	-0.023 (0.035)	-0.026 (0.030)	0.484 (0.403)	0.150 (0.095)	-0.024 (0.020)	-0.054 (0.051)
December	1.140 (0.012)	0.221 (0.039)	0.211 (0.033)	0.341 (0.414)	0.364 (0.108)	0.251 (0.022)	0.121 (0.058)
January x FY2003&2004	0.115 (0.014) ***	0.035 (0.049)	0.066 (0.042)	-0.389 (0.464)	0.118 (0.134)	0.030 (0.028)	-0.005 (0.072)
February x FY2003&2004	0.015 (0.015)	0.024 (0.050)	0.017 (0.043)	0.151 (0.577)	0.106 (0.139)	0.012 (0.028)	0.001 (0.074)
March x FY2003&2004	-0.312 (0.015) ***	-0.046 (0.051)	-0.064 (0.043)	-0.869 (0.568)	-0.191 (0.141)	-0.051 (0.029) *	-0.019 (0.075)
April x FY2003&2004	0.272 (0.012) **	0.054 (0.041)	0.037 (0.035)	0.871 (0.443) *	-0.003 (0.115)	-0.051 (0.024) **	0.085 (0.061)
May x FY2003&2004	-0.023 (0.012) *	-0.001 (0.041)	0.003 (0.035)	-0.432 (0.433)	0.018 (0.113)	0.039 (0.023) *	-0.010 (0.061)
June x FY2003&2004	0.005 (0.012)	-0.014 (0.039)	-0.011 (0.034)	-0.529 (0.464)	-0.046 (0.109)	0.020 (0.022)	-0.023 (0.058)
July x FY2003&2004	0.020 (0.011) *	-0.082 (0.038) **	-0.035 (0.033)	-0.379 (0.400)	0.025 (0.106)	0.001 (0.022)	-0.097 (0.057) *
August x FY2003&2004	0.017 (0.013)	0.122 (0.043) ***	0.061 (0.037) *	1.021 (0.441) **	0.093 (0.119)	0.045 (0.024) *	0.064 (0.064)
September x FY2003&2004	0.006 (0.013)	0.041 (0.044)	0.055 (0.038)	-0.688 (0.455)	-0.071 (0.123)	0.009 (0.025)	0.095 (0.066)
October x FY2003&2004	0.017 (0.013)	-0.023 (0.045)	-0.015 (0.039)	-0.638 (0.531)	-0.005 (0.126)	0.050 (0.026) *	-0.098 (0.067)
November x FY2003&2004	0.008 (0.015)	-0.016 (0.050)	0.000 (0.043)	-0.470 (0.578)	-0.091 (0.137)	0.001 (0.028)	0.072 (0.073)
December x FY2003&2004	-0.089 (0.016)	0.061 (0.055)	-0.006 (0.047)	0.407 (0.575)	-0.038 (0.132)	0.009 (0.031)	-0.007 (0.081)
F test: ai=0 for all i	8265.7 ***	28.2 ***	31.6 ***	2.9 ***	15.8 ***	66.4 ***	8.3
F test: bi=0 for all i	92.9 ***	1.6 *	1.1	1.9 **	0.5	1.7 *	1.1
Adj. R-squared	0.963	0.071	0.075	0.016	0.040	0.162	0.018
Root MSE	0.129	0.435	0.372	2.412	1.194	0.247	0.643
Number of observations	5652	5652	5649	1471	5559	5652	5652

Table 5 Seasonality of Household Head Income and Consumption: With Control Group, FY1991-FY2001 vs. FY2003-

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Household Head Income	Total Consumption	Consumption Excluding Durables	Durable Consumption	Semi-Durable Consumption	Non-Durable Consumption	Service Consumption
January	-1.176	-0.280	-0.2617	-0.242	-0.493	-0.301	-0.155
February	0.001	-0.068	-0.0624	-0.001	-0.347	0.006	-0.091
March	0.003	-0.003	-0.0024	0.074	0.021	0.006	0.116
April	0.007	-0.035	-0.0436	-0.038	-0.090	-0.075	0.013
May	0.004	-0.004	-0.0192	-0.204	-0.033	0.012	-0.022
June	1.180	0.017	-0.0057	0.417	0.124	-0.042	-0.042
July	1.166	0.004	0.0481	0.000	0.113	0.037	0.065
August	0.003	-0.100	-0.0774	-0.568	0.126	-0.039	-0.014
September	0.003	-0.069	-0.0726	0.009	-0.102	-0.049	-0.112
October	0.008	0.035	0.0385	0.073	0.123	-0.049	0.017
November	-0.007	-0.014	-0.0172	-0.051	0.114	0.009	-0.017
December	1.175	0.273	0.3357	0.465	0.087	0.294	0.118
January x Public	-0.009	-0.042	-0.0395	-0.005	0.123	-0.027	-0.061
February x Public	0.009	0.007	0.0016	0.024	-0.162	0.000	0.023
March x Public	0.364	0.007	0.0678	0.011	0.163	0.023	0.088
April x Public	-0.380	-0.035	-0.0309	-0.291	-0.037	-0.007	-0.065
May x Public	-0.008	-0.014	-0.0193	0.297	0.176	-0.011	-0.031
June x Public	-0.070	-0.006	-0.0194	-0.169	0.180	-0.003	0.012
July x Public	0.069	0.032	0.0758	0.253	0.163	0.034	0.062
August x Public	-0.042	-0.006	-0.0011	-0.066	0.180	0.015	-0.029
September x Public	0.028	-0.001	0.0035	0.076	-0.013	-0.018	-0.049
October x Public	0.003	-0.001	0.0005	0.183	0.177	-0.004	0.026
November x Public	0.003	0.013	-0.0009	0.112	0.168	0.008	-0.006
December x Public	0.031	0.037	0.0517	0.103	0.138	0.027	0.070
January x FY2003&FY2004	0.158	0.109	0.0922	-0.417	0.314	0.117	0.029
February x FY2003&FY2004	-0.015	0.012	0.0070	0.154	0.380	0.005	0.032
March x FY2003&FY2004	0.003	-0.045	-0.0400	-0.322	0.403	-0.051	-0.015
April x FY2003&FY2004	0.008	-0.010	-0.0112	0.184	0.291	-0.001	-0.031
May x FY2003&FY2004	-0.016	-0.003	0.0047	0.609	0.343	0.088	-0.009
June x FY2003&FY2004	-0.132	-0.011	-0.0458	0.116	0.324	0.007	-0.009
July x FY2003&FY2004	0.096	-0.019	0.0422	-0.469	0.324	-0.005	-0.003
August x FY2003&FY2004	-0.008	0.012	0.0401	0.046	0.328	0.035	0.013
September x FY2003&FY2004	-0.012	-0.002	0.0092	-0.064	0.331	-0.002	0.040
October x FY2003&FY2004	0.011	-0.016	-0.0242	0.624	0.323	-0.011	-0.053
November x FY2003&FY2004	-0.003	0.042	0.0334	-0.277	0.359	0.009	0.112
December x FY2003&FY2004	-0.150	-0.099	-0.0809	-0.319	0.348	-0.076	-0.080
January x Public x FY2003&FY2004	-0.016	-0.021	0.0315	0.067	0.473	-0.021	0.035
February x Public x FY2003&FY2004	0.012	0.017	0.0149	0.160	0.604	-0.019	0.000
March x Public x FY2003&FY2004	-0.387	-0.068	-0.0728	-0.479	0.624	-0.023	-0.039
April x Public x FY2003&FY2004	0.293	0.051	0.0446	0.371	0.460	-0.019	0.067
May x Public x FY2003&FY2004	-0.016	-0.008	-0.0204	-0.923	0.481	0.045	-0.030
June x Public x FY2003&FY2004	0.112	-0.001	0.0290	-0.227	0.485	-0.007	-0.017
July x Public x FY2003&FY2004	-0.074	-0.062	-0.0338	0.015	0.445	-0.001	-0.078
August x Public x FY2003&FY2004	-0.020	0.029	0.0108	0.234	0.462	-0.014	0.048
September x Public x FY2003&FY2004	0.041	0.030	0.0174	-0.610	0.463	0.013	0.035
October x Public x FY2003&FY2004	0.011	-0.013	0.0031	-0.778	0.510	0.040	-0.037
November x Public x FY2003&FY2004	-0.028	-0.009	-0.0410	0.297	0.571	-0.015	-0.070
December x Public x FY2003&FY2004	-0.003	0.032	-0.0208	0.394	0.574	0.016	0.007
F test: a=0 for all i	43721.0	298.4	333.9	6.8	192.1	879.1	48.14
F test: b=0 for all i	866.4	10.9	10.7	1.2	5.6	5.4	6.21
F test: c=0 for all i	47.5	3.0	3.0	1.3	2.1	6.6	1.01
F test: d=0 for all i	61.2	0.8	1.1	1.0	1.1	0.7	0.48
Adj. R-squared	0.941	0.105	0.115	0.012	0.064	0.235	0.022
Root MSE	0.174	0.438	0.386	2.432	1.256	0.671	0.471
Number of observations	59466	59466	59466	12642	38374	59466	59466

Table 6 Seasonality of Household Head Income and Consumption: With Control Group, FY1999-FY2000 vs. FY2003-

	Household Head Income		Total Consumption		Consumption Excluding Durables		Durable Consumption		Semi-Durable Consumption		Non-Durable Consumption		Service Consumption								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]														
January	a1	-1.115	(0.089)	***	-0.213	(0.023)	***	-0.196	(0.020)	***	0.011	(0.281)	-0.302	(0.067)	***	-0.258	(0.014)	***	-0.130	(0.034)	***
February	a2	0.002	(0.089)	***	-0.067	(0.023)	***	-0.074	(0.020)	***	0.067	(0.307)	-0.318	(0.065)	***	-0.005	(0.013)	***	-0.076	(0.033)	***
March	a3	0.007	(0.089)	***	0.126	(0.023)	***	0.103	(0.020)	***	0.129	(0.296)	0.291	(0.066)	***	0.053	(0.013)	***	0.119	(0.034)	***
April	a4	0.002	(0.088)	***	-0.064	(0.022)	***	-0.049	(0.019)	**	0.277	(0.281)	-0.104	(0.063)	***	-0.052	(0.013)	***	0.004	(0.032)	***
May	a5	-0.015	(0.089)	***	-0.032	(0.023)	***	-0.030	(0.020)	**	-0.245	(0.285)	0.048	(0.065)	***	-0.015	(0.013)	***	-0.045	(0.033)	***
June	a6	1.154	(0.010)	***	-0.016	(0.025)	***	-0.030	(0.022)	**	0.637	(0.307)	0.094	(0.072)	***	-0.055	(0.015)	***	-0.056	(0.037)	***
July	a7	-1.120	(0.089)	***	0.030	(0.025)	**	0.044	(0.022)	**	0.218	(0.272)	-0.026	(0.070)	***	0.049	(0.014)	***	0.072	(0.036)	**
August	a8	-0.006	(0.011)	***	-0.113	(0.028)	***	-0.075	(0.024)	***	-0.574	(0.323)	-0.473	(0.079)	***	-0.010	(0.016)	***	-0.037	(0.041)	***
September	a9	0.015	(0.010)	***	-0.020	(0.027)	***	-0.038	(0.024)	**	0.395	(0.339)	-0.033	(0.078)	***	-0.050	(0.016)	***	-0.032	(0.040)	***
October	a10	0.015	(0.010)	***	0.013	(0.026)	***	0.015	(0.023)	**	-0.204	(0.320)	0.360	(0.074)	***	-0.018	(0.015)	***	-0.012	(0.038)	***
November	a11	-0.021	(0.010)	**	-0.019	(0.026)	***	-0.035	(0.022)	**	0.332	(0.312)	-0.065	(0.073)	***	-0.027	(0.015)	***	-0.009	(0.038)	***
December	a12	1.094	(0.011)	***	0.212	(0.028)	***	0.190	(0.024)	***	0.515	(0.316)	0.451	(0.079)	***	0.279	(0.016)	***	0.049	(0.040)	***
January x Public	b1	-0.033	(0.011)	***	-0.047	(0.029)	***	-0.049	(0.026)	*	-0.052	(0.318)	-0.079	(0.083)	***	0.004	(0.017)	***	-0.027	(0.043)	***
February x Public	b2	-0.002	(0.012)	***	0.013	(0.031)	***	0.015	(0.027)	**	0.159	(0.412)	-0.048	(0.089)	***	-0.012	(0.018)	***	0.029	(0.046)	***
March x Public	b3	0.302	(0.013)	***	0.012	(0.034)	***	0.036	(0.030)	***	0.111	(0.415)	0.098	(0.098)	***	0.026	(0.020)	***	0.023	(0.050)	***
April x Public	b4	-0.342	(0.013)	***	-0.057	(0.033)	***	-0.030	(0.029)	**	-0.718	(0.394)	0.105	(0.096)	***	0.027	(0.019)	***	-0.112	(0.049)	***
May x Public	b5	0.006	(0.013)	***	-0.012	(0.034)	***	-0.028	(0.030)	**	0.534	(0.402)	-0.159	(0.097)	***	0.008	(0.020)	***	-0.044	(0.050)	***
June x Public	b6	-0.066	(0.013)	***	-0.004	(0.035)	***	-0.003	(0.031)	**	0.051	(0.435)	-0.115	(0.100)	***	-0.009	(0.020)	***	0.028	(0.051)	***
July x Public	b7	0.029	(0.013)	**	0.097	(0.034)	***	0.072	(0.029)	**	-0.013	(0.378)	0.244	(0.096)	**	0.019	(0.020)	***	0.068	(0.049)	***
August x Public	b8	0.005	(0.014)	***	-0.011	(0.037)	***	-0.016	(0.032)	**	-0.574	(0.409)	0.030	(0.105)	***	-0.029	(0.021)	***	-0.016	(0.051)	***
September x Public	b9	-0.020	(0.013)	***	-0.098	(0.035)	***	-0.071	(0.030)	**	-0.187	(0.418)	-0.044	(0.100)	***	-0.007	(0.020)	***	-0.160	(0.051)	***
October x Public	b10	0.035	(0.012)	***	0.024	(0.032)	***	0.016	(0.028)	**	0.861	(0.424)	-0.097	(0.092)	***	0.009	(0.019)	***	0.069	(0.047)	***
November x Public	b11	-0.011	(0.012)	***	0.007	(0.032)	***	0.008	(0.028)	**	0.139	(0.413)	0.221	(0.092)	**	0.012	(0.019)	***	-0.057	(0.047)	***
December x Public	b12	0.061	(0.012)	***	0.023	(0.032)	***	0.019	(0.028)	**	-0.126	(0.338)	-0.079	(0.091)	***	-0.018	(0.019)	***	0.057	(0.047)	***
January x FY2003&FY2004	c1	0.097	(0.013)	***	0.042	(0.035)	***	0.026	(0.031)	***	-0.532	(0.414)	-0.030	(0.101)	***	0.074	(0.021)	***	0.004	(0.052)	***
February x FY2003&FY2004	c2	-0.016	(0.014)	***	0.006	(0.036)	***	0.017	(0.032)	***	0.099	(0.478)	-0.085	(0.104)	***	0.015	(0.021)	***	0.015	(0.055)	***
March x FY2003&FY2004	c3	0.005	(0.014)	***	-0.059	(0.038)	***	-0.022	(0.033)	***	-0.569	(0.493)	0.000	(0.110)	***	-0.029	(0.022)	***	-0.019	(0.056)	***
April x FY2003&FY2004	c4	0.013	(0.012)	***	-0.002	(0.032)	***	-0.007	(0.028)	***	-0.142	(0.392)	-0.002	(0.092)	***	-0.016	(0.019)	***	-0.025	(0.047)	***
May x FY2003&FY2004	c5	0.003	(0.013)	***	0.005	(0.033)	***	0.015	(0.029)	**	0.715	(0.432)	0.002	(0.094)	***	0.010	(0.019)	***	0.011	(0.048)	***
June x FY2003&FY2004	c6	-0.106	(0.014)	***	0.014	(0.036)	***	-0.023	(0.031)	**	-0.096	(0.431)	-0.115	(0.102)	***	0.018	(0.021)	***	0.014	(0.052)	***
July x FY2003&FY2004	c7	0.049	(0.015)	***	-0.025	(0.035)	***	0.046	(0.031)	**	-0.676	(0.410)	0.143	(0.099)	***	-0.017	(0.020)	***	-0.008	(0.051)	***
August x FY2003&FY2004	c8	0.003	(0.015)	***	0.081	(0.039)	***	0.036	(0.034)	***	0.266	(0.442)	0.211	(0.111)	***	0.006	(0.022)	***	0.035	(0.057)	***
September x FY2003&FY2004	c9	-0.024	(0.014)	***	-0.052	(0.038)	***	-0.027	(0.033)	***	-0.370	(0.449)	-0.114	(0.108)	***	-0.001	(0.022)	***	-0.041	(0.055)	***
October x FY2003&FY2004	c10	0.004	(0.014)	***	0.006	(0.038)	***	-0.002	(0.035)	***	0.784	(0.440)	-0.244	(0.108)	***	0.015	(0.022)	***	-0.007	(0.055)	***
November x FY2003&FY2004	c11	0.011	(0.014)	***	0.046	(0.038)	***	0.051	(0.033)	***	-0.775	(0.467)	0.087	(0.109)	***	0.009	(0.022)	***	0.103	(0.056)	***
December x FY2003&FY2004	c12	-0.069	(0.015)	***	-0.038	(0.040)	***	-0.016	(0.035)	***	-0.360	(0.461)	0.038	(0.115)	***	-0.062	(0.024)	***	-0.012	(0.059)	***

January x Public x FY2003&FY2004	d1	0.008	(0.021)	-0.016	(0.054)	0.041	(0.047)	0.111	(0.564)	0.142	(0.154)	-0.051	(0.031)	0.002	(0.079)
February x Public x FY2003&FY2004	d2	0.023	(0.022)	0.011	(0.058)	0.001	(0.051)	0.024	(0.723)	0.187	(0.167)	-0.008	(0.034)	-0.007	(0.085)
March x Public x FY2003&FY2004	d3	-0.325	(0.023)	-0.012	(0.061)	-0.041	(0.053)	-0.323	(0.742)	-0.195	(0.176)	-0.027	(0.035)	0.006	(0.089)
April x Public x FY2003&FY2004	d4	0.255	(0.019)	0.052	(0.051)	0.044	(0.045)	0.999	(0.590)	-0.004	(0.146)	-0.038	(0.030)	0.114	(0.075)
May x Public x FY2003&FY2004	d5	-0.030	(0.020)	-0.010	(0.051)	-0.012	(0.045)	-1.160	(0.609)	0.014	(0.147)	0.025	(0.030)	-0.017	(0.075)
June x Public x FY2003&FY2004	d6	0.107	(0.020)	-0.031	(0.052)	0.012	(0.046)	-0.447	(0.634)	0.067	(0.149)	-0.001	(0.030)	-0.033	(0.076)
July x Public x FY2003&FY2004	d7	-0.034	(0.019)	-0.062	(0.051)	-0.080	(0.044)	0.282	(0.567)	-0.120	(0.144)	0.014	(0.029)	-0.084	(0.074)
August x Public x FY2003&FY2004	d8	0.007	(0.021)	0.034	(0.055)	0.026	(0.048)	0.731	(0.601)	-0.121	(0.157)	0.033	(0.032)	0.035	(0.081)
September x Public x FY2003&FY2004	d9	0.020	(0.020)	0.084	(0.053)	0.083	(0.047)	-0.347	(0.604)	0.039	(0.152)	0.003	(0.031)	0.146	(0.078)
October x Public x FY2003&FY2004	d10	0.004	(0.020)	-0.038	(0.054)	-0.012	(0.047)	-1.455	(0.647)	0.235	(0.154)	0.027	(0.031)	-0.081	(0.078)
November x Public x FY2003&FY2004	d11	-0.014	(0.021)	-0.072	(0.056)	-0.030	(0.049)	0.270	(0.694)	-0.183	(0.160)	-0.017	(0.032)	-0.020	(0.082)
December x Public x FY2003&FY2004	d12	-0.033	(0.023)	0.087	(0.059)	0.012	(0.032)	0.722	(0.644)	-0.083	(0.169)	0.061	(0.034)	0.019	(0.087)
F test: a1=0 for all i		6574.0	***	28.4	***	30.0	***	1.5		19.8	***	107.5	***	4.8	***
F test: b1=0 for all i		111.8	***	1.8	**	1.7	*	1.0		1.8	**	0.8		2.0	**
F test: c1=0 for all i		14.2	***	1.1	**	0.8		1.4		1.5	***	2.5	***	0.5	
F test: d1=0 for all i		34.0	***	0.9	*	0.9		1.3		0.7		0.9		0.7	
Adj. R-squared		0.939		0.059		0.063		0.010		0.039		0.163		0.013	
Root MSE		0.164		0.432		0.378		2.484		1.223		0.251		0.632	
Number of observations		13675		13675		13666		3267		13416		13675		13674	

Figure 1

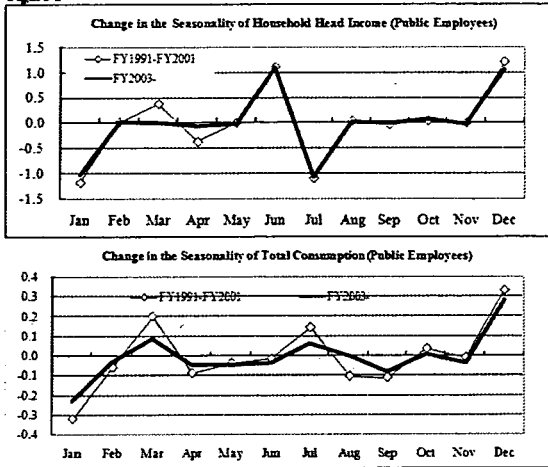


Figure 3

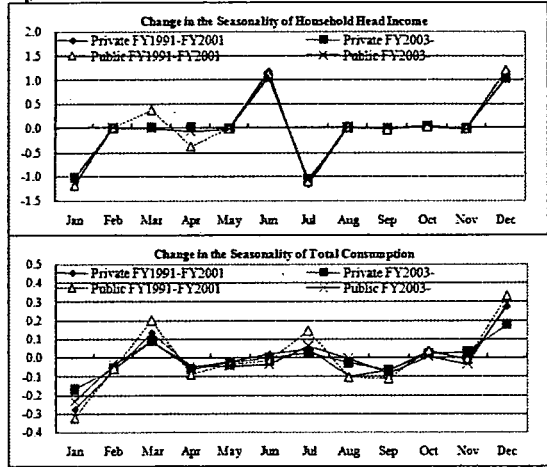


Figure 2

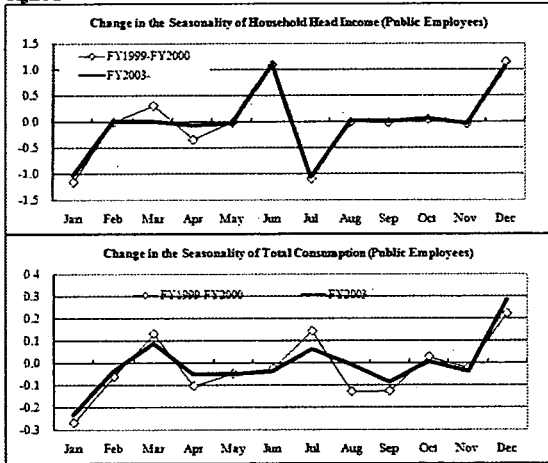
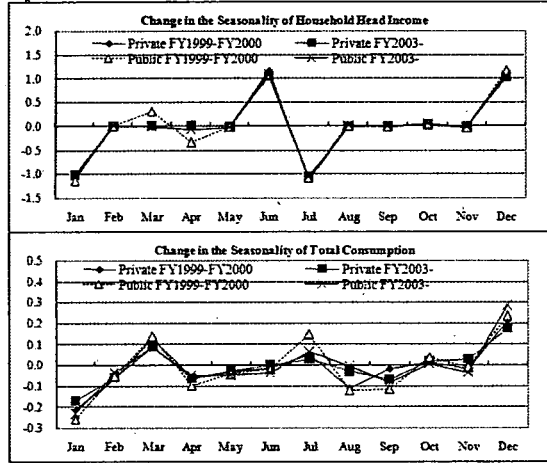
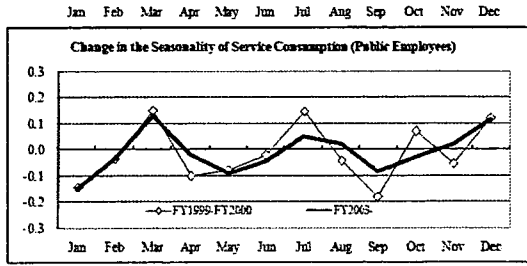
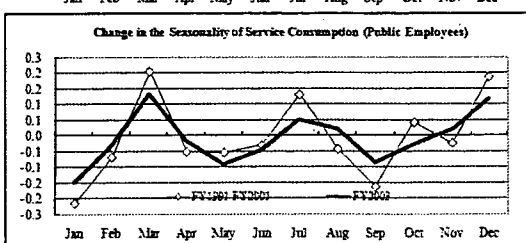
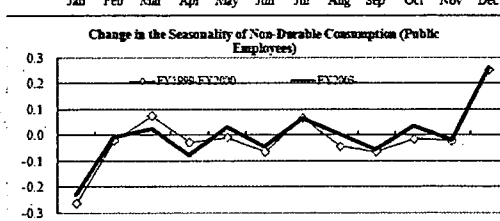
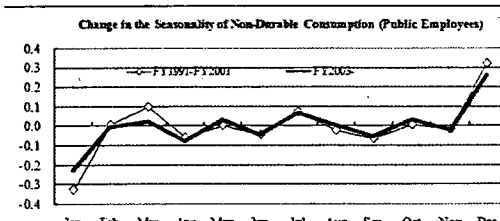
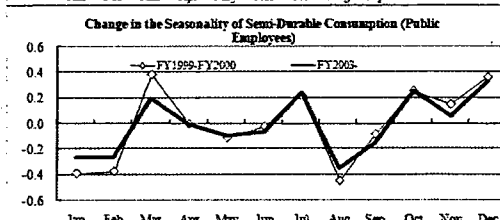
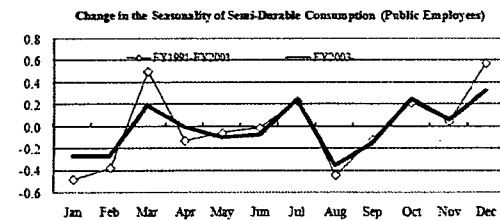
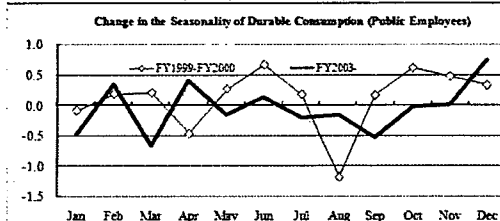
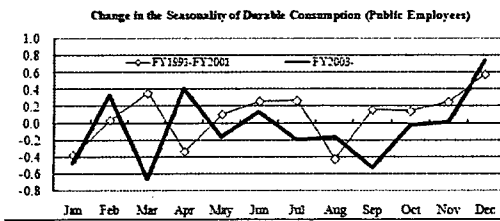
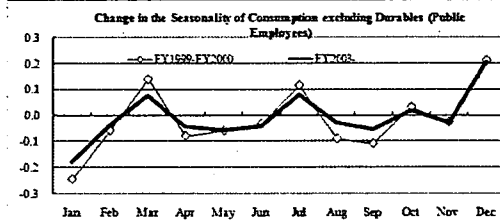
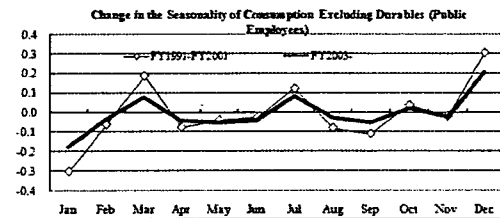
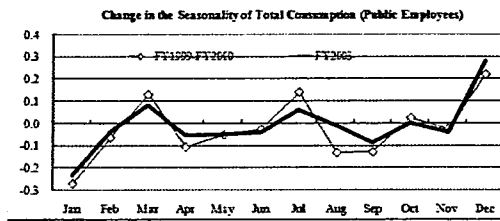
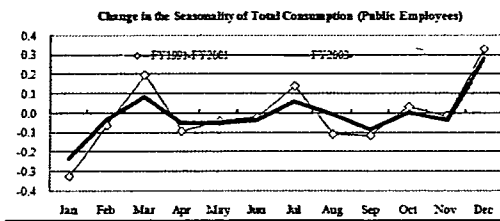
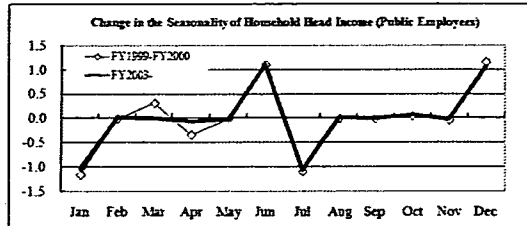
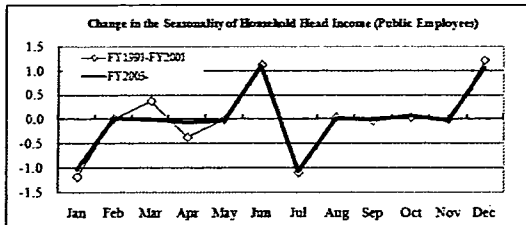
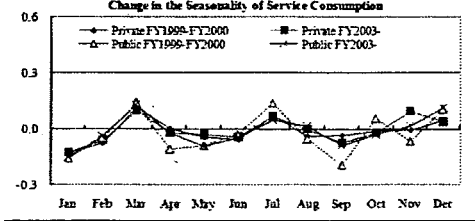
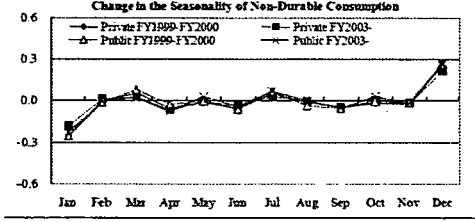
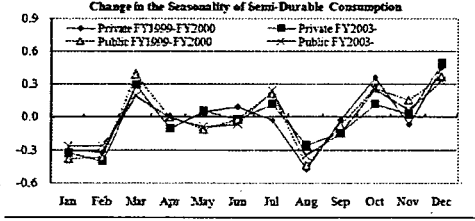
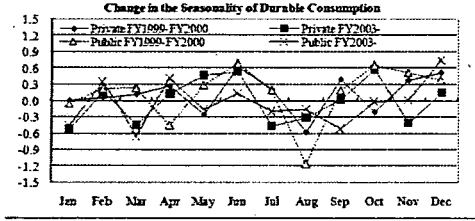
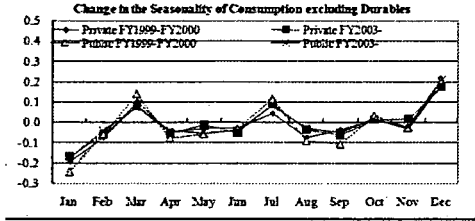
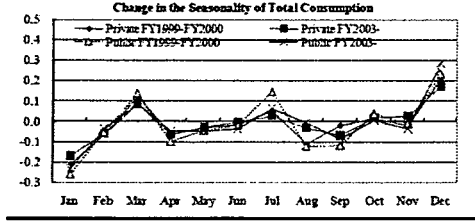
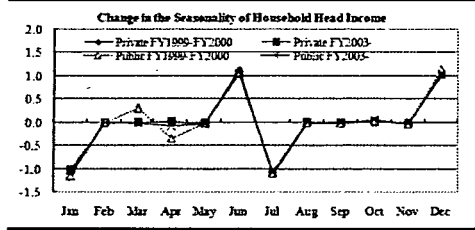
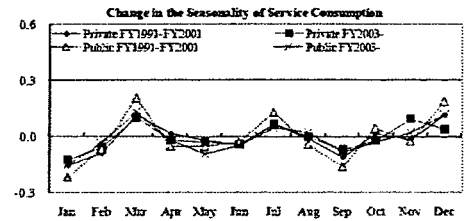
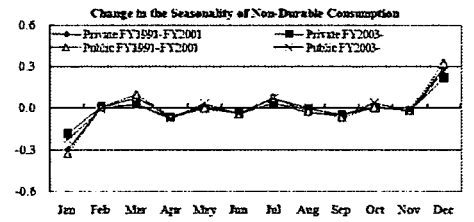
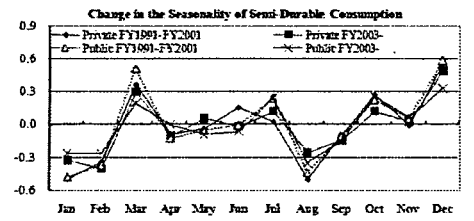
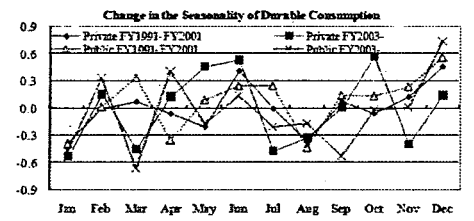
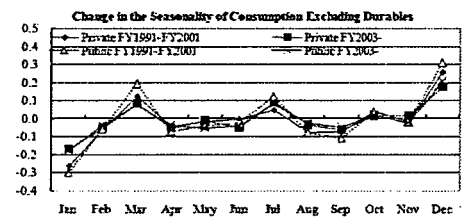
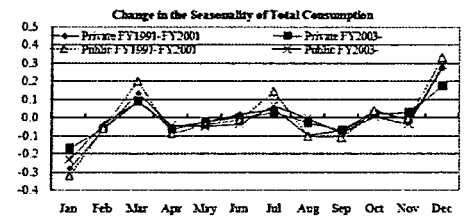
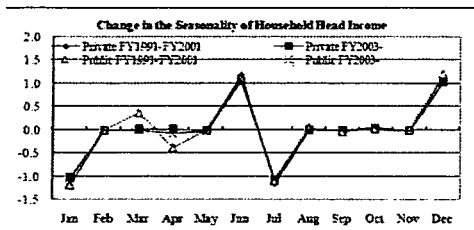


Figure 4







Appendix Table 1 Seasonality of Household Head Income and Consumption: Public Employees Only, FY1991-FY2001 vs. FY2002 (the year of the announcement)

	Household Head Income		Total Consumption		Consumption Excluding Durables		Durable Consumption		Semi-Durable Consumption		Non-Durable Consumption		Service Consumption	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)							
January	-1.186 (0.003)	-0.322 (0.010)	-0.301 (0.008)	-0.375 (0.102)	-0.479 (0.027)	-0.328 (0.006)	-0.215 (0.015)							
February	0.009 (0.003)	-0.061 (0.010)	-0.061 (0.009)	0.036 (0.131)	-0.373 (0.028)	0.006 (0.006)	-0.069 (0.016)							
March	0.373 (0.003)	0.199 (0.011)	0.189 (0.009)	0.355 (0.129)	0.505 (0.030)	0.098 (0.006)	0.203 (0.017)							
April	-0.374 (0.004)	-0.090 (0.011)	-0.075 (0.010)	-0.334 (0.129)	-0.127 (0.031)	-0.060 (0.007)	-0.052 (0.017)							
May	-0.006 (0.004)	-0.038 (0.011)	-0.039 (0.010)	0.107 (0.135)	-0.056 (0.031)	0.001 (0.007)	-0.055 (0.017)							
June	1.109 (0.003)	-0.017 (0.011)	-0.025 (0.009)	0.261 (0.122)	-0.009 (0.030)	-0.046 (0.006)	-0.032 (0.017)							
July	-1.098 (0.003)	0.143 (0.011)	0.124 (0.009)	0.267 (0.122)	0.235 (0.030)	0.071 (0.006)	0.129 (0.017)							
August	0.036 (0.004)	-0.106 (0.012)	-0.079 (0.010)	-0.423 (0.132)	-0.440 (0.032)	-0.024 (0.007)	-0.044 (0.018)							
September	-0.039 (0.003)	-0.112 (0.011)	-0.108 (0.010)	0.161 (0.132)	-0.116 (0.030)	-0.067 (0.006)	-0.163 (0.017)							
October	0.035 (0.003)	0.034 (0.011)	0.039 (0.009)	0.144 (0.139)	0.219 (0.029)	0.005 (0.006)	0.041 (0.016)							
November	-0.005 (0.003)	-0.011 (0.011)	-0.018 (0.009)	0.251 (0.114)	0.053 (0.030)	-0.018 (0.006)	-0.025 (0.017)							
December	1.204 (0.003)	0.330 (0.011)	0.307 (0.009)	0.578 (0.111)	0.579 (0.030)	0.321 (0.006)	0.186 (0.017)							
January x FY2002	0.117 (0.013)	0.170 (0.041)	0.145 (0.035)	0.353 (0.429)	0.245 (0.113)	0.092 (0.024)	0.153 (0.063)							
February x FY2002	0.001 (0.013)	-0.050 (0.043)	-0.045 (0.037)	-0.434 (0.494)	-0.090 (0.119)	-0.036 (0.025)	-0.041 (0.066)							
March x FY2002	-0.183 (0.015)	-0.051 (0.047)	0.023 (0.041)	-0.012 (0.512)	0.038 (0.130)	0.047 (0.028)	-0.036 (0.072)							
April x FY2002	-0.016 (0.013)	-0.020 (0.042)	-0.018 (0.037)	0.688 (0.425)	-0.121 (0.116)	-0.027 (0.025)	0.022 (0.063)							
May x FY2002	-0.004 (0.013)	-0.025 (0.041)	0.003 (0.036)	-0.344 (0.444)	-0.040 (0.113)	0.027 (0.024)	-0.004 (0.063)							
June x FY2002	-0.065 (0.012)	0.042 (0.040)	0.044 (0.034)	-0.101 (0.444)	0.193 (0.110)	0.031 (0.023)	0.052 (0.061)							
July x FY2002	0.041 (0.012)	-0.057 (0.037)	-0.065 (0.032)	0.077 (0.365)	-0.099 (0.103)	-0.075 (0.022)	-0.033 (0.057)							
August x FY2002	-0.047 (0.013)	0.083 (0.041)	0.100 (0.036)	0.066 (0.393)	0.053 (0.113)	0.070 (0.024)	0.103 (0.064)							
September x FY2002	0.045 (0.012)	0.002 (0.039)	0.013 (0.034)	-0.065 (0.478)	0.021 (0.107)	-0.024 (0.023)	0.050 (0.060)							
October x FY2002	0.027 (0.012)	-0.037 (0.039)	-0.028 (0.034)	-0.255 (0.525)	-0.137 (0.107)	-0.056 (0.023)	0.004 (0.060)							
November x FY2002	-0.035 (0.013)	0.107 (0.041)	0.055 (0.036)	0.661 (0.478)	0.199 (0.114)	0.034 (0.024)	0.070 (0.064)							
December x FY2002	-0.117 (0.014)	-0.185 (0.044)	-0.146 (0.039)	-1.118 (0.425)	-0.367 (0.123)	-0.049 (0.026)	-0.184 (0.069)							
F test: $\alpha=0$ for all i	45188.01 ***	255.75 ***	291.12 ***	7.05 ***	133.38 ***	573.87 ***	61.69 ***							
F test: $\beta=0$ for all i	35.64 ***	4.44 ***	4.15 ***	1.16	2.04 **	4.96 ***	1.62 *							
Adj. R-squared	0.962	0.120	0.135	0.014	0.068	0.239	0.031							
Root NISE	0.139	0.441	0.384	2.429	1.211	0.261	0.681							
Number of observations	22981	22981	22980	5098	22583	22981	22979							