Ricardian or Spender Consumers? Evidence from a Taxpayer Survey Questionnaire

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Abstract

This paper uses a unique survey questionnaire to assess the impact of the 2002 French tax cut on consumption. I find that the proportion of "spender" consumers as opposed to "Ricardian" consumers is relatively high, with 52.7 per cent of the households declaring that they consume their tax cuts. I also find evidence that the average marginal propensity to consume tax cuts (76.5%) is significantly greater than the average marginal propensity to consume temporary rises in earnings (42.4%). This result is consistent with the PIH. Furthermore, the smaller the tax cut, the greater this gap; and the higher the family earnings, the higher the marginal propensity to consume tax cuts, which invalidates the effect of liquidity constraints on consumption in that context.

Keywords: income tax cut; consumption; survey questionnaire; PIH; liquidity constraints.
JEL Numbers: E21; E67; D12; H24; H31.

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1 Introduction

May an income tax cut be considered an efficient way to encourage household consumption? This is a much-debated issue among economists. On the one hand, some claim that tax cuts come at a price, as they bring about a rise in government debt which will have to be settled by further taxes in the future. This type of anticipation may then tend to enhance people's saving rather than consumption patterns. As stated by Barro (1974), in that case, people are "Ricardian" consumers. On the other hand, others state that the impact of tax cuts on consumption is greater than is usually believed, notably because of the liquidity constraints faced by households: consumers may actually *spend* a large portion of their tax cut. In that case, they will be called "spender" consumers. Indeed, tax cuts supporters and opponents have different time horizons in mind. Consequently, as suggested by Mankiw (2000), both these realities may actually coexist: some consumers have short-term prospects while others have longer-term ones. Likewise, the impact of an income tax cut on the economy is known to be different in the short and in the long term. There may be both a favorable effect in the short term –because of a boost in demand– and a negative one in the long term. Indeed, a rise in debt means paying savers interests which will have to be repaid by means of further tax rises; these tax rises will possibly affect those very same interests whose after-tax value will thus fall. What ensues is a drop in the net interest rate, hence a drop in the accumulation of capital. Production and incomes will thus drop in the long term. Given those long-term negative effects, tax policies other than mere tax cuts on earned income are often advocated (such as reducing taxes on business or on productive capital). Moreover, if consumers anticipated a drop in their future income, they would probably not consume it as much.

In this context, gaining some understanding of the patterns along which consumers actually spend their income tax cut can shed light on a number of interesting aspects: first, it enlightens empirically the short-term impact of such tax cuts on the economy; second, it is also informative as to the ways consumers take account of the economic model as well as on the time horizon they consider to determine their consuming patterns. In that sense, macroeconomic theory may meet microeconomic heterogeneous behaviors.

Another issue concerns the test of excess sensitivity of consumption to income tax cuts. To some extent, it is assumed when using the permanent income hypothesis (PIH) that the permanence of tax cuts ensures that they will be consumed.

Indeed, if spender consumers are not constrained liquidity-wise, they may consider tax cuts as a permanent shock on their income. Hence, there might be a significant gap between people's marginal propensity to consume tax cuts on the one hand and a temporary income rise on the other hand.

In order to test the PIH and to assess the heterogeneity of consumers' behaviors as regards tax cuts, we set out the results of a household survey conducted shortly after the 2002 income tax cut in France. In line with the work of Shapiro and Slemrod (1995, 2003a, 2003b) who used survey data to explicitly ask American households how they responded to the 1992 temporary tax reduction and to the 2001 tax cut, the questionnaire yields information on people's propensity to consume tax cuts on the one hand (retrospective question) and, in an innovative way, to consume a temporary income rise on the other hand (hypothetical question). After briefly presenting the data, we assess the differences between the answers to the two questions.

2 Ricardian or spender consumers?

In the spring of 2002, the income tax cut was announced while president Chirac was campaigning to be re-elected: he promised to cut the income tax by a third over the course of his second mandate. Over that period (between 2002 and 2007), the income tax cut turned out to be half of what had been announced.

In the fall of 2002, households got an additional 2.6 billion€ in income, which corresponds to a 5 per cent income tax cut. The median household approximately derived 60€ from it, and the mean tax cut amounted to a rough 100€ . Moreover, given the progressive income tax system, households in the last income decile benefited by about two thirds of the total tax cuts, with an average 500€ for each household[1].

To analyze the short term impact of this tax cut on consumption, a questionnaire was devised and attached to the survey of the economic climate conducted monthly by the French National Statistical Office (INSEE) in May 2003. Through this recurring phone survey, 1928 households answered the special questionnaire dedicated to a retrospective consideration of the 2002 tax cuts. More particularly,

[1] Author's own computations using a representative sample of 500,000 income tax returns for 2002.

it helped determine how much each household saved in connection with the tax cut and how much of it had been consumed or saved. Other variables are available from the survey such as the households' characteristics, their view on the current state of the economy and on their own financial state.

Out of all of the surveyed households, 1242 (64.4%) declare that they pay the income tax. The French system of postponed tax payment enables one to save during the course of the year part of the sum which is then spent to pay taxes, either by monthly tax payments (for 43.6% of surveyed taxpayers), or three times a year (for 56.4%). Among those households, 655 (52.7%) state that they have spent this money on consumption while 98 (7.9%) say they have saved it; 59 (4.8%) say they have used it both for consuming and saving, while 74 (6.0%) have used it for other purposes; 356 (28.7%) do not know.

Most of the households answer that they have consumed the tax cut, while another significant share say they don't know how they have spent it. Assuming that non-responses are equally divided between the various modes, and that, for those who say they have both consumed and saved it (or used it for other purposes), half of the tax cut is actually consumed and another half is saved, then the consumption ratio of the tax cut (i.e. the proportion of the tax cut that has been consumed) amounts to 81.5 per cent. This is quite large when compared with existing figures in the literature. For instance, using the same methodology, Shapiro and Slemrod (1995) also find evidence of a large response to the 1992 US tax cut with 48 per cent of the respondents who planned to mostly spend the tax cut, while according to Shapiro and Slemrod (2003a) only 21 per cent planned to spend the 2001 US tax cut[2].

3 PIH test

In this section, I compare the answers to the previous question (retrospective question on the tax cut) with the answers to an additional question dealing with the marginal propensity to consume a temporary rise in family earnings (hypothetical question). The hypothetical question goes as follows: "If you were to receive an

[2]Note that estimated responses are even larger when considering more permanent tax cuts than those studied by Shapiro and Slemrod (1995, 2003a, 2003b) like, for instance, those of the Economic Recovery Tax Act of 1981 in the US, with marginal propensity to consume the tax cut being of around 60 to 90 per cent (Souleless, 2002).

unexpected sum of money roughly equivalent to one tenth of your income, you would choose to: a) spend it on your private consumption, b) save it, c) both save and spend it, or d) use it for other purposes?" (One tenth of the income is roughly equivalent to the tax cut itself.) Among the 1272 households which declare that they pay the income tax, 371 (29.2%) say they would spend this special amount of money on consumption, while 372 (29.3%) say they would save it; 334 (26.3%) say they would both save and spend it, while 175 (13.8%) would use it for other purposes; 20 (1.6%) do not know. Finally, among the 334 households who say they would both save and spend it, 65 (19.5%) would spend the better part of the sum and save the rest, while 99 (29.6%) would save the major part of the sum and spend the rest, and 165 of them (49.4%) would save and spend in equal proportions; 5 (1.5%) do not know.

Following Rubin's method (1976, 1987) for non-responses multiple imputation is used in order to estimate mean values of the marginal propensity to consume (MPC)[3]. In a first stage, every household declaring they would both save and spend the money is given a value: the assigned value is two thirds for households declaring they would spend the major part and saved the rest; it is one third for those declaring they would save the greater part; and it is fifty per cent if half is said to be consumed. As for the retrospective question on tax cuts, a 0.5 value is assigned to households declaring they both consume and save the tax cut. Other uses of it (such as paying debts) are categorized as saving. Then, in a second stage, the multiple imputation method is used in order to replace non responses. Table 1 presents both MPCs: a significant gap appears between the marginal propensity to consume the tax cut (76.5% on average) and the marginal propensity to consume a hypothetical rise in earnings (42.4%). This gap can be interpreted as evidence of the PIH, since the tax cut may be perceived as a permanent rise in income, while the hypothetical rise in earnings is only temporary. This gap is greater for male headed households, and increases alongside family earnings; interestingly, it also widens as the tax cut gets smaller. Furthermore, both MPCs seem to decrease with age.

In order to test the PIH more formally, the following two equations can be estimated:

$$MPC_{iH} = earn_i\alpha_H + age_i\gamma_H + z_i\varphi_H + \varepsilon_{iH} \quad (1)$$

[3]Non responses for both the hypothetical and the retrospective questions are jointly replaced by imputation with SAS release 9.1 using an arbitrary missing data pattern.

$$MPC_{iR} = earn_i \alpha_R + age_i \gamma_R + z_i \varphi_R + \varepsilon_{iR} \quad (2)$$

where MPC_{iJ} is the household's i marginal propensity to consume, with $J = H$ for the hypothetical question and $J = R$ for the retrospective question, $earn_i$ is family earnings, age_i is the age of the head of the household, z_i is a vector of other individual and household characteristics, and the ε_{iR} and ε_{iH} are normally distributed with means zero. On the one hand, the permanent income hypothesis implies that $MPC_H < MPC_R$. And indeed, the Wald test for the difference between both consumption ratios is significant at less than a 5 per cent level even when considering the adjusted values of MPCs computed from Table 2. What is more, regressions results in Table 2 are consistent with the life-cycle hypothesis, since households headed by older individuals appear to consume a larger share of the tax cut. On the other hand, lower income households who are more likely to be liquidity-constrained also appear to save a larger share of the tax cut. Though this result is not consistent with economic theory, it is in line with previous results in Shapiro and Slemrod (2003a).

In equations (1") and (2"), further explanatory variables are added in order to take other saving motives into account. For instance, car, housing and equipment goods purchases may be linked to precautionary saving motives; indeed, those households who plan to purchase durable goods are less likely to be involved in precautionary saving, so that they may consume a greater share of the tax cut. However, though most of the estimated coefficients bear the expected sign in the regressions, they are not significant.

Finally, Table 3 presents regression estimates according to the size of the tax cut (households who did not answer this question were dropped from the sample). Interestingly, the difference between consumption ratios appears to be significant mainly for smaller tax cuts. This is mostly due to the fact that higher-income households consume a larger share of the tax cut.

4 Conclusion

There is a lack of consensus about the effects of tax cuts upon consumption. One of the reasons is that time series can not be easily used to study such particular events. In this paper, a unique survey questionnaire is used in order to assess the impact of the 2002 French tax cut on consumption. Though there are limitations

to this questionnaire that does not reveal when households actually spend their tax cuts, interesting results can be drawn from the proposed methodology. Firstly, in consistency with the permanent income hypothesis, the marginal propensity to consume tax cuts appears to be significantly larger than the marginal propensity to consume a temporary rise in earnings. Secondly, in consistency with the life-cycle hypothesis, households headed by older individuals appear to consume a larger share of the tax cut. Finally, contrary to what is conventionally believed, there is evidence that lower-income households save a larger proportion of the tax cut, all the more so when the tax cut is small.

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Table 1. Marginal propensity to consume a temporary rise in income (hypothetical question) and marginal propensity to consume the tax cut (retrospective question)

	Hypothetical		Retrospective		
	Mean	**Std**	**Mean**	**Std**	**N**
Overall	0.4239	0.0122	0.7651	0.0129	1242
Female head	0.4511	0.0276	0.7645	0.0283	265
Male head	0.4166	0.0136	0.7726	0.0130	977
Married	0.4102	0.0147	0.7584	0.0157	828
Unmarried	0.4520	0.0217	0.7878	0.0208	414
Age < 35	0.4347	0.0281	0.7289	0.0359	200
Age 35-45	0.4355	0.0244	0.8068	0.0252	290
Age 45-55	0.4198	0.0269	0.8070	0.0295	252
Age 55-65	0.4016	0.0295	0.7637	0.0307	235
Age > 65	0.4305	0.0283	0.7160	0.0282	265
Mensual income < 1000€	0.4047	0.0351	0.6592	0.0538	171
Mensual income: 1000€ to 1500€	0.4903	0.0372	0.7252	0.0427	148
Mensual income: 1500€ to 3000€	0.4252	0.0186	0.7900	0.0175	535
Mensual income > 3000€	0.4070	0.0207	0.7955	0.0214	388
Family size = 1	0.4767	0.0291	0.7708	0.0312	236
Family size = 2	0.4303	0.0206	0.7724	0.0223	472
Family size = 3	0.4008	0.0273	0.7211	0.0307	226
Family size > 3	0.3946	0.0226	0.7994	0.0271	308
Tax cut < 50€	0.4487	0.0236	0.8653	0.0183	363
Tax cut: 50-100€	0.4784	0.0278	0.7931	0.0246	249
Tax cut > 100€	0.3771	0.0305	0.5857	0.0344	170

Source: Author's own computation using May 2003 French monthly conjuncture survey and multiple imputation techniques.

Table 2. Regression of marginal propensity to consume on income and other covariates

	without multiple imputation		with multiple imputation			
	Hypo (1)	**Retro (2)**	**Hypo (1')**	**Retro (2')**	**Hypo (1")**	**Retro (2")**
Male head	-0.0039	0.0054	-0.0084	0.0187	-0.0070	0.0199
	0.0345	*0.0378*	*0.0342*	*0.0336*	*0.0342*	*0.0336*
Married	-0.0140	-0.0341	-0.0128	-0.0412	-0.0146	-0.0404
	0.0325	*0.0357*	*0.0324*	*0.0344*	*0.0324*	*0.0344*
Age	0.0049	0.0104*	0.0051	0.0107**	0.0056	0.0108**
	0.0054	*0.0058*	*0.0054*	*0.0050*	*0.0054*	*0.0050*
Age2/100	-0.0055	-0.0101*	-0.0056	-0.0099**	-0.0060	-0.0101**
	0.0050	*0.0054*	*0.0049*	*0.0047*	*0.0049*	*0.0047*
Mensual income: 1000€ to 1500€	0.0779	0.0450	0.0813	0.0585	0.0796	0.0575
	0.0494	*0.0551*	*0.0498*	*0.0491*	*0.0498*	*0.0491*
Mensual income: 1500€ to 3000€	0.0225	0.0917**	0.0271	0.1161***	0.0233	0.1135**
	0.0397	*0.0448*	*0.0409*	*0.0431*	*0.0411*	*0.0434*
Mensual income > 3000€	0.0193	0.1074**	0.0236	0.1214**	0.0202	0.1259**
	0.0426	*0.0485*	*0.0437*	*0.0494*	*0.0442*	*0.0491*
Log(household size)	-0.0576*	-0.0174	-0.0560*	-0.0125	-0.0608*	-0.0184
	0.0326	*0.0358*	*0.0323*	*0.0383*	*0.0325*	*0.0379*
Equipement goods purchase within the last year					-0.0414	-0.0076
					0.0263	*0.0261*
Order new car					-0.0318	0.1251
					0.1239	*0.1328*
Intend to purchase equipment goods within the next year					0.0258	0.0301
					0.0296	*0.0318*
Intend to purchase housing with the next year					0.0545	0.0753*
					0.0378	*0.0407*
Intend to purchase car within the next year					-0.0305	-0.0607
					0.0525	*0.0555*
Number of observations	1218	886	1242	1242	1242	1242

Source: Author's own computation using May 2003 French monthly conjuncture survey and multiple imputation techniques. Note: Standard error in italics.*significant at 10% level; **significant at 5% level; ***significant at 1% level.

Table 3. Regression of marginal propensity to consume on income and other covariates according to the size of the tax cut

	Tax cut < 50€		Tax cut: 50-100€		Tax cut > 100€	
	Hypo	**Retro**	**Hypo**	**Retro**	**Hypo**	**Retro**
	(1)	**(2)**	**(1')**	**(2')**	**(1")**	**(2")**
Male head	0.0431	0.0286	-0.0651	0.0774	-0.0989	-0.0849
	0.0628	*0.0475*	*0.0835*	*0.0732*	*0.0914*	*0.1052*
Married	0.0075	0.0157	0.0878	0.0186	-0.1153	-0.1437
	0.0622	*0.0485*	*0.0784*	*0.0692*	*0.0785*	*0.0942*
Age	0.0090	0.0096	-0.0120	0.0078	0.0032	0.0096
	0.0101	*0.0075*	*0.0123*	*0.0109*	*0.0133*	*0.0151*
Age2/100	-0.0101	-0.0102	0.0114	-0.0078	-0.0048	-0.0076
	0.0092	*0.0068*	*0.0114*	*0.0101*	*0.0126*	*0.0142*
Mensual income: 1000€ to 1500€	0.1733**	0.1889***	-0.0710	-0.0387	-0.2844*	-0.0963
	0.0843	*0.0641*	*0.1310*	*0.1199*	*0.1524*	*0.1718*
Mensual income: 1500€ to 3000€	0.0227	0.1328**	-0.0893	0.1991*	-0.1125	0.1433
	0.0719	*0.0555*	*0.1105*	*0.1034*	*0.1241*	*0.1407*
Mensual income > 3000€	0.0352	0.2034***	-0.1838	0.1627	0.0580	0.2669*
	0.0818	*0.0664*	*0.1180*	*0.1146*	*0.1212*	*0.1367*
Log(household size)	-0.0389	0.0046	-0.1186	-0.1257*	-0.0711	0.0525
	0.0592	*0.0451*	*0.0774*	*0.0703*	*0.0831*	*0.0942*
Number of observations	375		253		173	

Source: Author's own computation using May 2003 French monthly conjuncture survey and multiple imputation techniques. Note: Standard error in italics.*significant at 10% level; **significant at 5% level; ***significant at 1% level.