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Title of Dissertation: The Consumption Effects of ARRA Tax Policies on Liquidity
Versus Non-Liquidity Constrained Consumers

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Title of Document: The Consumption Effects of ARRA Tax Policies on
Liquidity Versus Non-Liquidity Constrained Consumers
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In February 2009, Congress enacted and the President executed the American Recovery and Reinvestment Act (ARRA), also known as the “stimulus package.” The bill provided 12 major tax provisions intended for individuals, which included provisions expanding the Earned Income Tax Credit (EITC), a tax rebate for retired individuals and disabled individuals (RDTR), and distributing a general tax credit called the Making Work Pay tax credit (MWPTC) (U.S. Internal Revenue Service, 2015). This paper assesses the impacts of these three tax policies, with the main question of interest being whether each of these tax policies had an expansionary impact on consumer expenditures beyond what expenditures would have been otherwise for liquidity constrained versus non-liquidity constrained consumers.

This paper also tests tenets of consumption in a two-period model by looking at the effect of using different liquidity constraint definitions and the consumption responses to changes in income. Using the Consumer Expenditure Survey (CES) data from the Bureau of Labor Statistics (BLS), this paper examines the effect of these three tax policies on the monthly changes in total consumption expenditures, nondurable goods expenditures, and durable goods expenditures. There are models built to measure both the short-run and long-run responses from each of these tax policies with the long-run response extending for a two-month lag. Both the short- and long-run response models are measured using the fixed effect ordinary least squares (OLS) and fixed effect two-stage least squares

(2SLS) techniques with Hausman tests for exogeneity of the tax policies.

Overall, the results suggest that the expansion of the EITC, and the RDTR were ineffective counter-cyclical fiscal policies in both the short- and long-run. When significant, multiplier and marginal-propensity-to-consume (MPC) values were consistently below one. For example, the expansion of the EITC had a maximum long-run multiplier of 0.070 on the monthly change in total spending and of 0.011 on the monthly change in nondurable goods spending. Conversely, the MWPTC was a relatively effective counter-cyclical fiscal policy, when examining the significant results, with a long-run total MPC on the monthly change in total spending of 1.614 to 1.947. Liquidity constrained households receiving the tax policies had negative MPCs compared to non-liquidity constrained households, when the results were significant. For example, the MWPTC caused MPCs on the monthly change in total spending for liquidity constrained households relative to non-liquidity constrained households of negative 0.641 to negative 0.619. Across liquidity constraints, being liquidity constrained caused a negative monthly change in total spending between \$1,288 and \$1,486, for example. Most of the results across specifications were insignificant suggesting at best minimal support for liquidity constraints and changes in temporary income as important determinants of consumption.

Chapter I provides an introduction to the policies and the paper; chapter II highlights the theoretical framework used; chapter III discusses the principal related scholarly literature; chapter IV outlines the major research hypotheses, the data used for the analyses, methodologies, and models to be used for the analyses; chapter V presents the outcomes and discusses their theoretical implications; and chapter VI provides the policy implications of the results and some concluding remarks on the results overall.

*The Consumption Effects of ARRA Tax Policies on Liquidity Versus Non-Liquidity
Constrained Consumers*

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Doctor of Philosophy in Public Policy, 2017

Dissertation submitted to the Faculty of the Graduate School of the
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of the requirements for the degree of
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Dedication

I dedicate my dissertation work to my family and many friends, especially to my wife who provided infinite encouragement and support during these many stressful and tiresome years. I give a special dedication to my father and father-in-law, both of whom taught me how to succeed and persevere. I wish you could be here to see me finish this journey. Your memories and teachings will never be forgotten.

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List of Abbreviations

Abbreviation	Explanation
2SLS	Two-Stage Least Squares
ACTC	Additional Child Tax Credit
AGI	Adjusted Gross Income
AOTC	American Opportunity Tax Credit
ARRA	American Recovery and Reinvestment Act
BLS	Bureau of Labor Statistics
CBO	Congressional Budget Office
CES	Consumer Expenditure Survey
CLHS	Center for Law and Human Services
CPI	Consumer Price Index
CPS	Current Population Survey
CU	Consumer Unit
DSR	Debt Service Ratio
EGTTRA	Economic Growth and Tax Relief Reconciliation Act
EIC	Earned Income Credit
EITC	Earned Income Tax Credit
LTV	Loan-to-Value
MAGI	Modified Adjusted Gross Income
MPC	Marginal Propensity to Consume
MSA	Metropolitan Statistical Area
MWPTC	Making Work Pay Tax Credit
OLS	Ordinary Least Squares
PIH	Permanent Income Hypothesis
PSID	Panel Study of Income Dynamics
PSU	Primary Sampling Unit
PUMD	Public-Use Microdata
RDTR	Retirement and Disability Rebate
VITA	Volunteer Income Tax Assistance

I. Introduction

The American Recovery and Reinvestment Act (ARRA) was a \$787 billion bill intended to boost economic output through a combination of expansionary spending and tax policies. The bill provided 12 major tax provisions intended for individuals. These included the American Opportunity Tax Credit (AOTC); the expansion of the Earned Income Tax Credit (EITC); the expansion of the Additional Child Tax Credit (ACTC); tax credits for home energy efficiency and renewable energy purchases; expanded employer-provided tax-excluded transportation benefits; a first-time home-buyer tax credit; reduced COBRA health insurance premiums; the Making Work Pay tax credit (MWPTC); a tax rebate for retired and disabled individuals (RDTR); new-vehicle purchases sales tax and fee deductions; untaxed unemployment benefits; and a general health insurance premium tax credit (U.S. Internal Revenue Service, 2015b). This paper focuses only on the MWPTC—a general tax credit distributed to working taxpayers—(U.S. Internal Revenue Service, 2015c), the EITC expansion, and the tax rebate for retired individuals and disabled individuals on supplemental security income (RDTR).

The reason for examining these three provisions and not the other nine provisions is that the three selected here are functional windfalls of cash that do not require purchasing restrictions to receive them. For example, the AOTC requires purchasing secondary education while the first-time home-buyer tax credit requires purchasing a house. While some of the tax credits do not require specific purchases, the qualifications for receipt do necessitate certain kinds of purchases. For example, the ACTC is a refundable credit for taxpayers who claim the non-refundable child tax credit which exceeds their total tax liability (U.S. Internal Revenue Service, 2016b). So, while claiming this credit explicitly

requires having children, it implicitly necessitates child-related purchases. Another example is the expanded employer-provided tax-excluded transportation benefits. To receive these transportation benefits, recipients are essentially purchasing transportation services with their pre-tax income. Examining the aforementioned three tax provisions that lack purchasing restrictions allows for easier study of their effects on overall consumption expenditures. Studying some of these other tax provisions would be useful to determine their effects on their related consumption expenditures but not necessarily useful for their effects on general consumption.

Turning to the details of these tax provisions, the MWPTC was a two-year refundable tax credit for working individuals and households. Individuals and households had to either have wage or self-employment income to qualify. Individuals received up to \$400 a year and married taxpayers filing joint returns (i.e. households) received up to \$800 a year (U.S. Internal Revenue Service, 2015c). The credit was typically handled by employers who made automated withholding changes and was subsequently received as take-home pay (U.S. Internal Revenue Service, 2015c). However, individuals and households who did not experience changes in withholding could claim the credit on their tax returns for tax years 2009 and 2010.

Enacted in 1975, the EITC is a refundable tax credit to help working individuals and families, particularly those with children, who have low to moderate incomes. It was structured to require recipients have earned income to combat the disincentive to work from a traditional negative income tax and spur labor supply. Generally, the tax credit phases in slowly, has a moderate-length plateau, and phases out slower than it phased in. The ARRA increased the maximum credit amount for taxpayers with three or more

qualifying children (\$5,657 in tax year 2009) and increased the beginning point of the phase-out range of the credit for all joint return filing married couples regardless of the number of children (U.S. Internal Revenue Service, 2016a).

The phase-out for the credit begins at \$22,870 for married couples filing a joint return with children and completely phases out at \$43,210 for couples with one child, \$48,378 for couples with two children, and \$51,567 for couples with three or more children. For married couples with no children, the credit begins to phase out at \$13,310 and completely phases out at \$19,680 (U.S. Internal Revenue Service, 2016a). These changes were initially only for tax years 2009 and 2010 but were extended to tax years 2011 and 2012 by The Tax Relief and Job Creation Act of 2010 and further extended through tax year 2017 by The American Taxpayer Relief Act of 2012. Individuals and families claim the EITC when filing their tax returns each year.

The RDTR was a flat \$250 or \$500 tax rebate distributed to individuals and households, respectively, receiving Supplemental Security Income, Social Security (Regular & Disability) Insurance, Veterans pension, Railroad Retirement, or state government retirement (U.S. Congress, 2009). This rebate was a check mailed directly to these recipients throughout the months of May and June 2009. If an individual or household received this RDTR as well as the MWPTC, the amount of the MWPTC would be reduced by the amount of the RDTR.

All three of these provisions have the potential to increase economic output by increasing consumption spending. While these tax policies increase disposable income and overall purchasing power, it is not certain that they will increase consumption spending above what individuals and households were already planning to spend.

According to the Congressional Budget Office (CBO) (2015), the RDTR had an estimated multiplier effect on economic output of 0.2 to 1.0 and tax policies including the MWPTC and the expansion of the EITC had estimated multiplier effects on economic output of 0.3 to 1.5 and 0.4 to 2.1, respectively.¹ Given their ranges, these multiplier effects do not clarify whether these tax policies significantly increased consumption spending beyond what would have been otherwise.

Furthermore, it is uncertain that these tax policies will have homogenous effects across different populations, income levels, geographic regions, etc. CBO (2015) notes that after reviewing the responses of households it found that one-time payments were less likely to have an impact on household consumption because the payments would have a smaller effect on total long-term disposable income; and, increases in disposable income are likely to boost household consumption for lower-income households as compared to higher-income households due to lower-income households' inability to borrow to smooth consumption. These liquidity constrained populations are often studied when determining the effects of tax policies on consumption spending. Liquidity constraints are defined as the inability of households or individuals to borrow against future earnings in order to optimize consumption spending in the current period (Hubbard et al. 1986) (Zeldes, 1989) (Shea, 1995) (Engelhardt, 1996). Individuals who lack good credit or liquid assets (e.g. savings, common stocks and bonds, or U.S. savings bonds) exemplify liquidity constrained consumers.

Possible heterogeneous effects for different groups, such as liquidity constrained

¹ CBO constructed these multipliers by groupings of policies. For example, the MWPTC is measured together with all other ARRA Division B, Title 1 provisions which includes the AOTC too. Thus, the individual multiplier effect of the MWPTC is not provided by CBO.

consumers, affect the success and outcome of any expansionary fiscal policy. Given that the point of these tax policies was to boost economic output through increased consumption spending, a policy that caused no change in consumption or increased saving and/or debt repayment will be ineffective. Thus, the main reason to study the consumption effects of these policies is to determine their effectiveness and worthiness as expansionary fiscal policy aimed at increasing consumption expenditures. Studying individual ARRA tax policies provides a micro-evaluation of its effectiveness.

Policymakers have many options for anti-cyclical, expansionary fiscal policy and should have research to guide their decisions in order to pick the most effective one. Enacting a policy with the largest multiplier effect boosts output and general economic wellbeing to the greatest amount proportional to the public funds spent on the policy. Studying the consumption effects of liquidity constrained versus non-liquidity constrained consumers is extremely relevant given the nature of the latest recession and the relatively low rate of savings among U.S. consumers (U.S. Federal Reserve Bank of St. Louis, 2015).² If, for example, this research reveals that liquidity constrained households decreased spending upon receiving the policies, then these policies would be ineffective at boosting economic output through increased consumption spending. Determining the effectiveness of these policies gives policymakers knowledge on the usefulness of similar tax policies as expansionary fiscal policy.

To determine the effectiveness of these policies, this paper constructs a series of hypotheses and models to calculate the marginal-propensity-to-consume (MPC) and multiplier values from the policies. The hypotheses and models are based on the

² As of May 2015, the national savings rate was 5.1 percent.

theoretical framework of consumption in a two-period model with and without binding liquidity constraints. This framework demonstrates that liquidity constrained households should have positive MPCs out of increases to current income. Using the Consumer Expenditure Survey (CES), this paper tests the effect of the policies on liquidity constrained households, the effect of liquidity constraints on the monthly change in consumption, and the effect of the policies on the monthly change in consumption by all households. Short- and long-run response models are constructed using ordinary least squares (OLS) and two-stage least squares (2SLS). Using a Euler equation estimation technique, the policies and liquidity constraints are tested on the monthly change in total consumption expenditures, total nondurable goods expenditures, and total durable goods expenditures. The results were generally insignificant across specifications.

One possible explanation for these insignificant results is that the permanent income hypothesis (PIH) predicts a significant consumption response only from permanent income changes. The MWPTC, expansion of the EITC, and the RDTR were all only temporary income changes. However, when significant the results are minimally supportive of the policies causing negative monthly changes in consumption of liquidity constrained households, of liquidity constraints causing sub-optimal consumption, of the MWPTC as an effective counter-cyclical fiscal policy, and of the expansion of the EITC and the RDTR as ineffective counter-cyclical fiscal policies.

For example, when significant the MWPTC caused the monthly change in total spending by liquidity constrained households as compared to non-liquidity constrained households to decrease with an MPC of negative 0.641 to negative 0.619. Furthermore, the RDTR caused a decrease in the monthly change in total spending by liquidity

constrained households relative to non-liquidity constrained households with an MPC of negative 0.378 to negative 0.266. The total effect from liquidity constrained households—the summation of the MPCs of the policy amount and the liquidity constraint-policy amount interaction term—are only slightly better when significant. For example, the total MPC from the MWPTC on the monthly change in total spending for liquidity constrained households is between negative 0.525 and positive 1.746; and, the monthly change in nondurable goods spending for liquidity constrained households is between negative 0.226 to positive 0.066. The generally insignificant results and the negative MPCs of liquidity constrained households as compared to non-liquidity constrained households from these tax policies suggests these types of tax policies are likely ineffective at stimulating consumption from liquidity constrained households.

The effects of liquidity constraints were also generally insignificant. However, when they were significant, they demonstrated sub-optimal consumption for liquidity constrained households. Being liquidity constrained caused a negative monthly change in total spending between \$1,288 and \$1,486 and a negative monthly change in nondurable goods spending between \$91.26 and \$188.30 a month. The handful of significant results provides minimal support for liquidity constraints being considered significant determinants of consumption and non-optimizing behavior. Policies that ease borrowing restrictions inherent to liquidity constraints may be more helpful at stimulating consumption from liquidity constrained households than cash-equivalent tax policies.

For the expansion of the EITC, and the RDTR, multiplier and MPC values were generally insignificant and when significant were below one and thus caused relatively inconsequential increases in output through increased consumption spending. While the

results of the MWPTC were generally insignificant, when significant there were relatively large and positive long-run MPCs on the monthly change in total spending. The MWPTC generated a maximum long-run MPC of 1.947 on the monthly change in total spending and of 0.155 on the monthly change in nondurable goods spending. The expansion of the EITC had a maximum multiplier on the monthly change in total spending of 0.070. Finally, the RDTR had no significant positive long-run effects on the monthly change in spending of any type.

Congress spent \$116 billion on the MWPTC, \$4.7 billion on the expansion of the EITC, and approximately \$13.5 billion for the RDTR (U.S. Congress, 2009) (U.S. Social Security Administration, 2010). If the significant results are the true effects, these allocations caused approximately an increase in the monthly change in total spending of \$226 billion from the MWPTC; approximately \$329 million in output increases from the monthly change in total expenditures from the expansion of the EITC; and, a significant long-run decrease in the monthly change in nondurable goods spending from the RDTR. The ineffectiveness of the expansion of the EITC and the RDTR suggests that Congress should consider alternative measures in future recessions. The paper overall is organized as follows: chapter II highlights the theoretical framework used for this paper; chapter III discusses the principal scholarly literature related to the topic; chapter IV outlines the major research hypotheses, the data used for the analyses, methodologies, and models to be used for the analyses; chapter V presents the outcomes and discusses their theoretical implications; and chapter VI provides the policy implications of the results and some concluding remarks on the results overall.

II. Theoretical Framework

As stated in the previous chapter, ARRA was a package of expansionary spending and tax policies intended to boost economic output. The MWPTC, EITC, and RDTR were meant to raise output through an increase in disposable household income and thus an increase in consumption expenditures. The MWPTC and the expansion of the EITC were announced for tax years 2009 and 2010 only, while the RDTR was announced for a one-time May and June 2009 distribution only. Furthermore, these policies were financed via government deficits rather than matching reductions in expenditures or matching increases in taxes. As discussed below, these tax policies have the potential to increase consumption in both current and future periods. This occurs because households can either spend the tax policies now or save them for future use. Households that are liquidity constrained are likely to have higher MPCs out of the tax policies than non-liquidity constrained households. This occurs because liquidity constrained households normally consume below the unconstrained optimal consumption bundle. However, as discussed later in the chapter, there are reasons why the tax policies might yield very small or only negligible increases in consumption.

This chapter first discusses the theoretical framework of unconstrained consumption in a two-period model and how changes to income from the tax policies studied here would theoretically alter consumption. Then, liquidity constraints are introduced in the two-period model to show how households which are constrained should have positive MPCs out of increases to current income from the policies studied here. After this, explanations of why the tax policies may have little effect on consumption are discussed. This includes discussing the PIH (Friedman, 1957) and Ricardian equivalence as laid out

in Carlin and Soskice (2006). Finally, the empirical constructions of permanent income and liquidity constraints for the models used in this paper are explained and outlined.

These discussions inform the hypotheses discussed in Chapter IV.

a. Consumption in a Two-Period Model

Consider a household that lives for only two periods and has no inheritances or bequests. Figure 1(a) below shows a household maximizing its utility by choosing an indifference curve, U , that is tangent to a budget constraint, B , at point O . Consumption in period 1 is C_1 and consumption in period 2 is C_2 . Assume also that all consumption in periods 1 and 2 is consumption of normal goods. Income in period 1 is Y_1 and income in period 2 is Y_2 ; the real interest rate is r ; and, wealth is zero in all periods. If exogenous wealth is zero, then the present value of lifetime consumption (C) is equal to the present value of lifetime income (Y) as shown in equation i. below. Point L represents when all lifetime income is consumed in period 1 as shown in equation ii. below; point K represents when all lifetime income is consumed in period 2 as shown in equation iii.

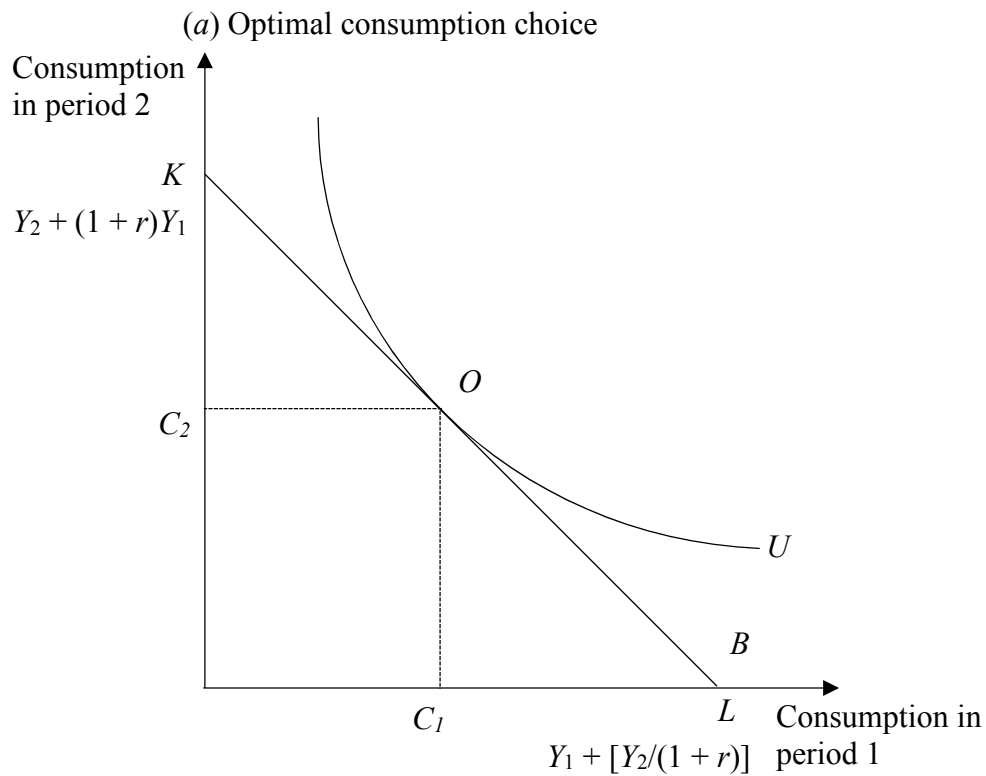
$$PV(C) = PV(Y) \tag{i.}$$

$$L = Y_1 + [Y_2/(1 + r)] \tag{ii.}$$

$$K = Y_2 + (1 + r)Y_1 \tag{iii.}$$

Assume also that households can substitute consumption freely between period 1 and period 2 at a constant rate.³ Figure 1(b) above shows the theoretical effect of an increase in income from the any of the tax policies studied here.

³ During and after the passage of ARRA, the Federal Reserve kept the target federal funds rate at approximately 0.25 percent. This made substituting consumption between present and future much easier than otherwise and heavily benefitted net-borrower households.



(b) Optimal consumption choice:
Increases in period 1 income only

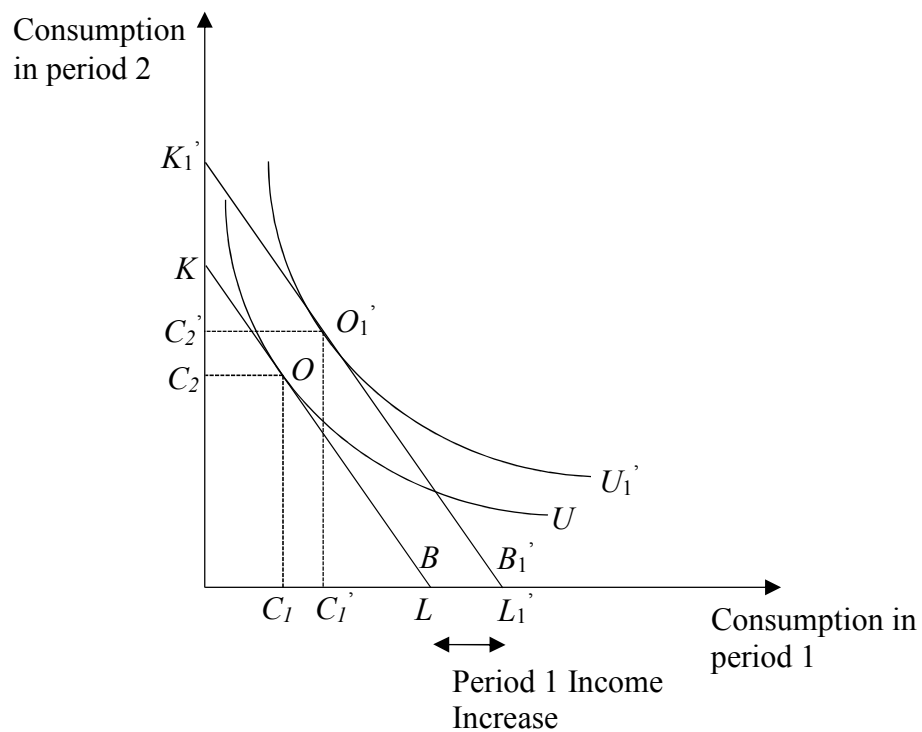


Figure 1(a) & 1(b): Consumption in a two-period model with changes in income.

In this context, I model the effects of the expansion of EITC and the RDTR from the ARRA as one-period increases in income in the form of a refundable tax credit and a cashable tax rebate check, respectively. Assume for the effect of the MWPTC, a monthly-for-ten-months decrease in tax withholding on take-home paychecks, that the ten months households received the MWPTC are aggregated into period 1 and that all months thereafter are aggregated into period 2. Thus, the effects of each tax policy on consumption in the model are the same. Note in Figure 1(b) that income increases in period 1 under any of the policies.

Suppose that a household receiving a tax reduction from any of the policies, expressed as P , consumes all of it in period 1 such that period 1 consumption increases from L to L_1' . Now assume the household decides to consume all lifetime income in period 2 such that consumption in period 2 can be represented by K_1' . Therefore, consumption in period 2 can be increased by a maximum of $(1 + r)P$ which is equal to the future value of the policy if it is saved and earning the prevailing market interest rate. Thus, consumption increases in period 1 because more income is available and also increases in period 2 because more income can be saved. If the distribution of the tax policies occurred in period 2 rather than period 1 in Figure 1(b), then the effect would be the same: consumption increases in period 1 because more income from the future can pay for borrowing today and consumption increases in period 2 because more income is available. This demonstrates the irrelevance of the timing of changes in income on changes in consumption.

It is possible that households are unable to substitute consumption freely between period 1 and period 2 at a constant rate. Households that are unable to optimally borrow

at the prevailing interest rate to smooth consumption are considered liquidity constrained. As discussed in the next section, liquidity constrained households are still likely to increase consumption out of increases to current income; however, their consumption is still below the unconstrained optimal consumption bundle.

b. Consumption in a Two-Period Model with Liquidity Constraints

Figure 2 below shows the simple two-period model reconfigured to show how liquidity constrained households have a positive MPC out of increases in current income (for example, from the ARRA tax policies studied here). In the model, liquidity constraints are defined as a household's inability to borrow against future earnings to smooth consumption.

Normally, the unconstrained household would consume at point O with C_1 period 1 consumption and C_2 period 2 consumption. Now suppose the liquidity constraints are binding such that period 1 (2) consumption is less than or equal to period 1 (2) income. Assume again that all consumption in periods 1 and 2 is consumption of normal goods. Normally, if a household wanted to consume all of its income in period 1, point L , it could borrow against its future earnings. However, in this example, period 1 consumption, C_1' , is all of period 1 income, Y_1' , since the household cannot borrow to bring forward future income to the current period. The budget constraint kinks and is now represented by B_2 . Under B_2 , the household maximizes utility at point O' where consumption in period 2 is equal to period 2 income and is greater than unconstrained consumption in period 2; and, consumption in period 1 is less than unconstrained consumption in period 1.

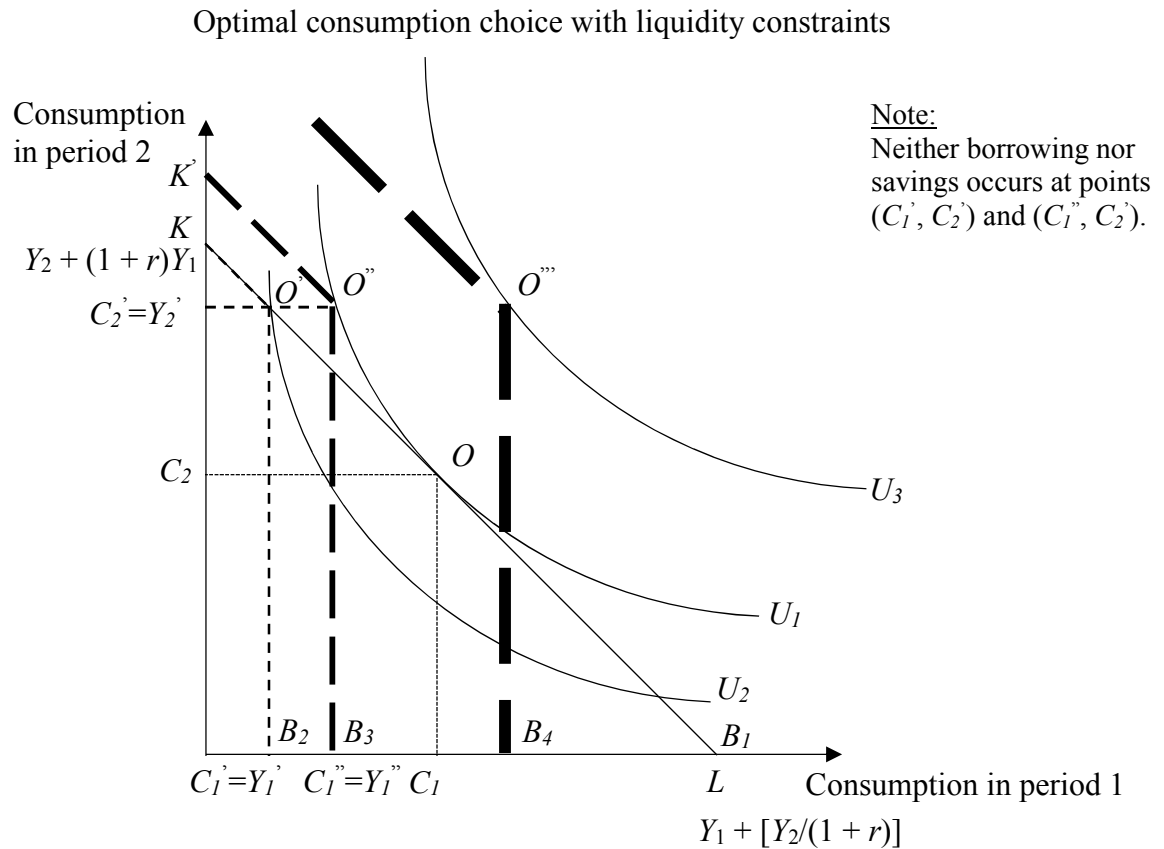


Figure 2: Consumption in a two-period model with binding liquidity constraints.

Now consider changes in Figure 2 that could occur from any of the ARRA tax policies. Any of these tax policies will cause an increase in current period income—from Y_1' to Y_1'' . The budget constraint shifts to the right from B_2 to B_3 and the household maximizes utility at point O'' , and still consumes all income at the time it is received. The entire increase in income is consumed in the current period as the household is still liquidity constrained and still has an inability to borrow against future earnings. While present consumption does increase, it still does not reach a new optimal consumption bundle. Assuming that borrowing is not constrained otherwise, the new optimal consumption bundles will be on an indifference curve higher than U_1 , for example curve U_3 .

It is possible that if a change in income from any of the policies studied here for liquidity constrained households is large enough, it will shift the budget constraint tangent to the new optimal higher indifference curve, see B_4 and U_3 above. The likelihood of this depends on the slope of a household's indifference curves. For example, if indifference curves have low slopes, or are relatively flat, then a change in income from the tax policies is more likely to cause the new budget constraint to be tangent with the new higher indifference curve. In this case, households would go from liquidity constrained and unable to borrow to achieving a utility maximizing consumption bundle. Thus, this suggests that the effectiveness of the ARRA tax policies on liquidity constrained households depends both on the size of the policies and the slopes of household indifference curves. An increase in consumption less than the increase in income from the tax policies suggests that households are choosing to save due to reaching a utility maximizing consumption bundle and thus are no longer liquidity constrained. Conversely, an increase in consumption equal to the increase in income suggests households are still liquidity constrained even after the receiving the tax policies.

In the situation without liquidity constraints, as shown in Figure 1(b), an increase in income from any of the tax policies caused an increase in consumption beyond the initial optimal amount. Whereas in Figure 2, being liquidity constrained keeps first period consumption below optimal, utility-maximizing levels and a sudden increase in income causes households to consume more in the current period to try to attain an optimal level of consumption. Overall, the discussion surrounding Figure 2 and the ARRA tax policies suggests that these tax policies should only affect consumption of liquidity constrained

households in the period in which they were received and that the change in consumption is dependent on the slopes of household indifference curves.

The next section discusses competing explanations that demonstrate the possibility that households will exhibit little to no change in consumption from receiving these tax policies. These include the PIH (Friedman, 1957) and Ricardian equivalence as laid out in Carlin and Soskice (2006). Chapter IV discusses how the changes in income from the ARRA tax policies and liquidity constraints affecting consumption are tested as well as how the PIH may temper effects on consumption.

c. The Permanent Income Hypothesis and Ricardian Equivalence

The PIH as developed by Friedman (1957) models consumption as a function of wealth, lifetime income, and borrowing ability rather than as a function of current income. The PIH focuses on using savings and borrowing as a way to smooth consumption out of uneven income and on the ineffectual response of consumption to temporary changes in income. The PIH suggests that, absent liquidity constraints, consumption is determined by the average expected income to be earned in any time period (i.e. permanent income) and only changes in expectations to (or actual changes to) average earned income, as opposed to changes in current income, will alter consumption. As mentioned in the beginning of this chapter, the MWPTC, expansion of the EITC, and the RDTR were time-limited tax cuts financed by deficits rather than matching increases in taxes or decreases in government spending. This suggests that these policies created temporary, rather than permanent, income changes that require eventual repayment via changes to future tax rates because of their deficit-financing. Given the small effect on lifetime income these tax policies should have, the PIH predicts that these policies should

have approximately no effect on consumption and thus no effect on output.

Ricardian equivalence, as discussed by Carlin and Soskice (2006), is the theory that government expansionary fiscal policies have no effect on output as the present value of any benefits the government provides are known by the recipients of the benefits to be exactly offset by an equal present value in taxes. According to Ricardian equivalence, households increase savings one-to-one with any changes in government spending, therefore creating no change in aggregate output. Thus, under Ricardian equivalence, the government is incapable of altering lifetime income and consumption with various expansionary fiscal policies. Ricardian equivalence also suggests that the ARRA tax policies should have no effect on consumption given that households need to increase savings to compensate for future higher taxes of near-equal present value.

However, as the previous section discussed, liquidity constraints change the way consumers respond to changes in income. The PIH normally assumes perfect capital markets and the ability to borrow optimally at the prevailing interest rate, such that households are always able to smooth consumption and therefore will only alter consumption in response to changes in permanent income. While the stimulus tax cuts should have no effect on non-liquidity constrained households according to the PIH, liquidity constrained households are unable to borrow optimally to smooth consumption and likely alter consumption in response to any change in current income, be it a permanent or temporary change.

Furthermore, income distributions could be relevant for understanding the effect of the tax policies studied here. For example, poorer households with zero net-savings over their lifetimes may not finance the tax policies in future higher tax rates and thus use the

policies entirely on either present or future consumption. Richer households, conversely, with non-zero net-savings may primarily finance the tax policies with future higher tax rates and may decrease consumption. As long as the burden of taxation falls on richer households, poorer households with zero net-savings should create a net-positive effect on output with increased consumption spending. Income distribution considerations suggest that even in the absence of liquidity constraints, lower-income households may still alter consumption in response to changes in temporary income if they expect to not bear (most of or all of) the tax burden later on. This also suggests that Ricardian equivalence may not hold based on the tax burden of expansionary fiscal policies. Income distribution considerations are relevant under imperfect capital markets and liquidity constraints too.

Carlin and Soskice (2006) noted that econometric models of the consumption function using aggregate data show that the behaviors expected by the PIH are often not present and that Ricardian equivalence typically does not exist. Carlin and Soskice (2006) note that in the aggregate data consumption is sensitive to predictable changes in income. This issue is important here because it suggests changes in income from announced tax policy changes can have a significant effect on consumption and output. Second, in the aggregate data consumption is excessively smooth to announced changes in permanent income, meaning consumption does not respond as much as expected or respond at all. Third, in the aggregate data borrowing does not adequately smooth consumption in response to changes in permanent income. This point suggests that capital markets are imperfect and therefore some consumers' borrowing is limited. Fourth, in the aggregate data there is incomplete Ricardian equivalence in that changes in households' and

individuals' savings rates to accommodate for future higher taxes do not completely offset changes in fiscal policy. Thus, it is reasonable to expect some positive consumption response to the temporary income changes from the ARRA tax policies studied here.⁴ Chapter IV discusses how the consumption responses from the ARRA tax policies are tested and the next section briefly discusses how permanent income and liquidity constraints are empirically constructed for the models of this paper.

d. Empirical Construction of Permanent Income and Liquidity Constraints

Carlin and Soskice (2006) note that initial empirical models of Friedman's (1957) PIH work used backward-looking expectations whereby permanent income was a weighted average of past income. However, for the models of this paper permanent income is constructed based on the works of Goodman and Kawai (1982), Goodman (1988), Ferguson et al. (2003), and Engström and Hagen (2017) in which permanent income, P , along with temporary income, T , is a regressor of current income, Y , as shown in equation xi. below:

$$Y = P + T \quad (\text{iv.}).$$

Using ordinary least-squares (OLS) for equation xi., permanent income, P , serves as the predicted value from the regression while temporary income, T , is the residual (Goodman and Kawai, 1982) (Goodman, 1988) (Ferguson et al., 2003) (Engström and Hagen, 2017).

Permanent income, P , is function of human wealth, H , and nonhuman wealth, N , where

⁴ Although these issues exist when looking at the aggregate data, Carlin and Soskice (2006) point out that studies that use microeconomic data, model changes in preferences due to number of adults and children, and test for the intertemporal optimization condition—such as Blundell, Browning, and Meghir (1994) and Attanasio and Weber (1995)—show these issues do not exist; and thus, the PIH is generally confirmed and temporary income changes should have no effect on consumption. The models for this paper use microeconomic data, model changes in preferences, and test for the intertemporal optimization condition. Thus, the results for this paper should not provide evidence supporting the issues found in the aggregate data and should show no effect on consumption from temporary income changes.

human wealth is determined by education, E , age, A , and training or work experience, T , and nonhuman wealth is the summation of the values of checking accounts, savings accounts, common stocks and bonds, and U.S. Saving Bonds. (Goodman and Kawai, 1982) (Goodman, 1988) (Ferguson et al., 2003) (Engström and Hagen, 2017). Thus, equation xi. can be rewritten as equation xii. below:

$$Y = \beta_1 E + \beta_2 A + \beta_3 T + \beta_4 N + T \quad (\text{v}).$$

This approach was chosen over using averages of past income as it accounts for human and nonhuman capital investments that ultimately determine long-term earnings potential.

Liquidity constraints are constructed in two ways for the econometric models used in this paper. The first uses liquid assets with a threshold level and the second uses debt-to-income ratios with a threshold level. Liquidity constraints determined by total liquid assets under a threshold dollar amount are based on the work of Hubbard et al. (1986), Zeldes (1989), Shea (1995), Engelhardt (1996), and Johnson et al. (2004). Total liquid assets are equivalent to nonhuman wealth of permanent income as discussed above. Households are considered liquidity constrained if they have zero liquid assets. This is similar to the empirical construction of liquidity constraints from Zeldes (1989), who found liquidity constrained households with zero liquid assets had a significant consumption response from changes in income as compared to non-liquidity constrained households with positive liquid assets.⁵ This approach was chosen as it comports with the framework of Figure 2 in that liquidity constrained households consume all of current income with no savings.

The use of borrowing limits as liquidity constraints is based on the work of Agarwal

⁵ A fuller discussion of Zeldes (1989) is in Chapter III.

et al. (2007) and this paper modifies Agarwal et al.'s (2007) approach by using debt-to-income ratios above a threshold level rather than credit card credit limits.⁶ The liquidity constraint is operationalized as a binary variable that reflects the existence of a ratio of total current consumer debt to total current income above a threshold ratio. Consumer debt is the summation of personal credit debt (e.g. credit cards), mortgages, home equity loans, and owned vehicle loans. Given available data, the threshold ratio of debt-to-income is based on the level of the debt service ratio (DSR) divided by the average percent of non-zero monthly debt-repayment to non-zero monthly total consumer debt.⁷ The DSR is the ratio of monthly required debt repayment to monthly income. The use of the DSR with liquidity constraints is based on the work of Ludvigson (1999), Carroll (2001), Quercia, McCarthy, and Wachter (2003), Johnson and Li (2010), and the U.S. Consumer Financial Protection Bureau (2016). Liquidity constrained households are thus those with a debt-to-income ratio above the ratio of a 30 percent DSR and the average percent of non-zero monthly debt-repayment to non-zero monthly total consumer debt. This second approach was chosen because it very directly measures the effect of limits on borrowing which are central to the theoretical conception of liquidity constraints. The next chapter discusses the findings of related previous literature which, along with the framework constructed here, informs the hypotheses discussed in Chapter IV.

⁶ A fuller discussion of Agarwal et al. (2007) is in Chapter III.

⁷ The Consumer Expenditure Survey (CES)—the source of the data used in this paper—does not collect required debt repayment and thus the DSR itself cannot be estimated. The CES does collect actual debt repayments; however, CUs may not necessarily make their required monthly debt repayments but their total debt load still exists regardless. Thus, the average percent of non-zero monthly debt-repayment to non-zero monthly total consumer debt may not equate to required monthly debt repayments but it is a useful approximation of what people pay monthly given the data available, and does not run into issues of trying to use actual monthly debt repayment as an approximation for required monthly debt repayments.

III. Literature Review

The previous chapter discussed the theoretical framework of consumption in a two-period model with and without liquidity constraints while demonstrating the effect of changes in current income on consumption and outlining the empirical construction of liquidity constraints and permanent income. This chapter discusses relevant scholarly literature that tests the empirical effects of liquidity constraints and changes in current income from tax cuts on consumption spending. There are four sections each discussing a different collection of prior research. The first section details the effectiveness of ARRA on increasing output. The second section examines how liquidity constraints generally affect consumption. The third section examines how tax cuts influence consumption spending generally and how tax cuts influence consumption spending of liquidity constrained households. Finally, the fourth section discusses specific effects of the EITC on consumption spending and limitations of research on the EITC's effect on consumption. The research demonstrates varying effectiveness of ARRA, liquidity constraints are generally an important determinant of consumption, and tax rebates generally and the EITC specifically should cause some positive MPC.

a. Effectiveness of ARRA Tax Policies

This section briefly examines the existing literature on the effectiveness of ARRA in raising national output. Romer and Bernstein (2009) released the first report concerning ARRA prior to President Obama's inauguration. They estimated output multipliers using the Federal Reserve's FRB/US model as well as leading private-sector forecast models, such as Macroeconomic Advisers. The authors assumed that households treated the tax credits as permanent in determining their short-run spending. Romer and Bernstein's

(2009) multiplier estimates for ARRA tax policies in 2009 was 0.43 and 0.85 in 2010.⁸

Multiplier values of less than one demonstrate for every dollar of government expenditure, new output generated is less than one dollar. Multiplier values of one demonstrate new output generated is equal to the change in government expenditures. Finally, multiplier values of greater than one demonstrate new output generated is greater than one dollar for every dollar of government expenditures. Romer and Bernstein's (2009) results demonstrate that ARRA tax policies had a positive effect on output, albeit smaller than theoretically desired. Furthermore, Auerbach et al. (2011) notes that an implication of multipliers below 1.0 is that some net crowding-out of components of GDP other than the component measured by the multiplier occurs.

The Congressional Budget Office (2015) has conducted an updated evaluation of ARRA tax policies and their multipliers. The RDTR had an estimated multiplier effect on economic output of 0.2 to 1.0 and tax policies including the MWPTC and the expansion of the EITC had estimated multiplier effects on economic output of 0.3 to 1.5 and 0.4 to 2.1, respectively (U.S. Congressional Budget Office, 2015).⁹ Other findings included that one-time payments were less likely to have an impact on household consumption because the payments will have a smaller effect on total long-term disposable income; and, increases in disposable income are likely to boost household consumption more for lower-income households as compared to higher-income households due to lower-income households' inability to borrow to smooth consumption (U.S. Congressional Budget

⁸ These multipliers are the average of each quarterly multiplier for the given years.

⁹ CBO (2015) constructed these multipliers by groupings of policies. For example, the MWPTC is measured together with all other ARRA Division B, Title 1 provisions which includes the American Opportunity Tax Credit too. Thus the individual multiplier effect of the MWPTC is not provided by CBO.

Office, 2015).¹⁰ Adams and Gangnes (2010) found similar results to CBO (2015) regarding the multiplier effect of personal tax policies in ARRA. To estimate the multiplier effect of the tax policies of ARRA for individuals and households, they used a policy simulation of an approximate 1 percentage point reduction in the effective average Federal personal income tax rate.¹¹ Adams and Gangnes (2010) found that the change in personal tax policies in ARRA would have had an estimated multiplier effect on economic output of 0.6 in 2009 and 1.1 in 2010.

Zandi and Blinder (2010) use the Moody's Analytics model of the U.S. economy to measure how different types of tax cuts will stimulate the economy. The authors created a "bang for the buck measure" (Zandi and Blinder, 2010: 16) which is estimated by the one-year dollar change in GDP for a given dollar reduction in federal tax revenue. For refundable lump-sum tax rebates and credits (similar to the EITC and the RDTR), the authors found a value of 1.22. For a job tax credit (generically similar to the MWPTC), the value is 1.30. Based on their model results, the authors conclude ARRA tax policies of similar structure would have a modest multiplier effect on output, concurring with the findings from Adams and Gangnes (2010) and CBO (2015).

Some research suggests a more pessimistic effect of ARRA tax policies. Cogan et al. (2010) used Smets and Wouters' (2007) new Keynesian model to simulate the U.S. economy under ARRA. Cogan et al. (2010) found a multiplier effect on output due to ARRA tax policies to be 0.19. Drautzburg and Uhlig (2011) also used Smets and

¹⁰ One possible concern with a large increase in government spending is the possibility of higher interest rates due to crowding-out of loanable funds. CBO (2015) notes that such crowding out can discourage consumption spending on durable goods (e.g. cars). However, the Federal Reserve's policies of extremely low interest rates made this an irrelevant concern when examining the effectiveness of ARRA in the years of its implementation (Congressional Budget Office, 2015).

¹¹ Although this simulation differs significantly from the specific policy mechanisms being studied, it helps to illustrate behavioral effects from a sudden increase in disposable income due to a change in tax policy.

Wouters' (2007) new Keynesian model to find short-run (i.e. one year) multiplier effects of ARRA transfers (i.e. direct outlays or tax transfers) to liquidity constrained individuals. They found an output multiplier effect of 0.54 for liquidity constrained individuals receiving ARRA transfers.¹² Taylor (2011) used data from the Bureau of Economic Analysis' "Personal Income and Output" and found a negligible and statistically insignificant effect on consumption due to the tax rebates and temporary transfers of ARRA.¹³ Feyrer and Sacerdote (2011) look at the output multiplier effect of ARRA transfers (excluding tax transfers) to low income individuals and find an effect estimate of 1.088, though it is statistically insignificant. Though the effect is statistically insignificant and focused on expenditures targeting low-income individuals rather than tax policies, Feyrer and Sacerdote (2011) note it is the largest of the output multipliers and conclude that transfers directed at low-income individuals (who as noted below are typically liquidity constrained) have the greatest relative economic benefit.

Sahm, Shapiro, and Slemrod (2012) looked specifically at the MWPTC's likely effect on spending. Using the University of Michigan's Survey of Consumers, the authors found that 13 percent of recipients said the tax credit would be used to mostly increase spending. This outcome is problematic in that it does not track actual consumption expenditures in response to receiving the tax credit. It is useful, however, in providing possible justifications for any relatively low MPC coefficients: recipients were not planning on using it to increase spending so not doing so aligns with predispositions

¹² This was assuming that 25 percent of the population was liquidity constrained, or "rule of thumb" as called by the authors, and that these individuals received 25 percent of all ARRA transfers. For a more complete discussion on their sensitivity analysis regarding liquidity constrained individuals see pages 28 to 30 of Drautzberg and Uhlin (2011).

¹³ Taylor (2011) is discussed in greater detail below.

gathered from this survey. The research generally illustrates that regardless of which point-estimate of multiplier effects of ARRA tax policies is considered the multiplier effects are generally low to moderate in size and suggest that any specific tax policy should have similar multipliers.

b. Liquidity Constraints and Consumption

Carlin and Soskice note that prior to Hall (1979), empirical models of Friedman's (1957) consumption function used backward-looking expectations to formulate permanent income as a weighted average of past income. Hall (1979) changed this approach by modeling consumption as a random walk in which the previous period's consumption was the best predictor of current consumption and all right-hand variables are considered exogenous, a priori. Hall's (1979) approach theorized that households' and individuals' previous period consumption (and all periods of consumption) captures all known information about permanent income. Only a random error, such as a recession, would cause a change in consumption in the current period. Changes in government fiscal policy are examples of new information captured by the random error. However, the PIH suggests only changes to permanent income will produce a change in permanent consumption.

To test his random-walk hypothesis, Hall (1979) added lagged income to the consumption equation. Hall's (1979) results support his hypothesis by demonstrating that lagged income has insignificant predictive power for current consumption; however, lagged consumption and lagged wealth (measured by stock prices) had modest predictive power for current consumption and consumption for the succeeding few quarters. Although Hall (1979) found a variable other than lagged consumption

with modest predictive power of consumption, he attributes its statistical and practical significance to the lag between changes in permanent income and changes in consumption rather than to any structural significance it may have on current consumption. He says his results suggest that consumption should be treated as exogenous beyond the succeeding few quarters and that only lagged consumption predicts current consumption.

Many authors, such as Hubbard et al. (1986), Zeldes (1989), Campbell and Mankiw (1991), Shea (1995), and Engelhardt (1996), found that other variables, such as liquidity constraints, are important for determining current consumption; and, by extension, that viewing consumption as a random walk may be too strict of an interpretation. Hubbard et al. (1986) examined how consumption functions are affected by liquidity constraints. The authors simulate how the aggregated MPC would respond to a temporary tax cut given certain degrees of liquidity constraints on consumers. Hubbard et al. (1986) operationally defines liquidity constrained consumers as individuals with low wages who cannot borrow against future high wages, who have no non-human capital assets (wealth), and whose initial desired consumption exceeds initial wages. Under infinite-horizon and finite-horizon models, the authors measure a five-year tax cut financed with a tax-increase scheduled either twenty or ten years out from the time of tax cut. Infinite-horizon models assume that consumers consider bequests (i.e. heirs) when making their own consumption decisions while finite-horizon models assume consumers consider only their own lives when making their consumption decisions.

The authors' results generally demonstrated that aggregate MPC increases with the

degree of liquidity constraint in response to sudden unexpected increases in income (i.e. a temporary tax cut). For example, a five-year tax cut using a finite-horizon model with 20 percent of the population liquidity constrained and financed with a tax-increase scheduled ten years later created 0.222 and 0.135 MPCs from a lump-sum tax cut and non-lump-sum tax cut, respectively. A five-year tax cut using a finite-horizon model with 25 percent of the population liquidity constrained and financed with a 10-year delay created MPCs of 0.270 and 0.166 from a lump-sum tax cut and non-lump-sum tax cut, respectively. Hubbard et al. (1986) also generally found that aggregate MPC increases relative to using a lump-sum tax cut over a non-lump-sum tax cut, to financing twenty years from the tax cut rather than ten years, and to using a finite-horizon model over an infinite-horizon model. The authors draw three conclusions from their results: first, aggregate changes in the MPC result primarily from capital market imperfections rather than changes in the planning horizon (infinite versus finite); second, distribution features of the tax cuts are important when liquidity constraints are considered; and third, liquidity constrained consumers are largely unaffected by changing saving incentives and will respond aggressively to net-of-tax income changes (Hubbard et al., 1986).

Zeldes (1989) tests levels of liquid assets that cause sub-optimal consumption by liquidity constrained households. Zeldes (1989) used data from the Panel Study of Income Dynamics (PSID) from the Survey Research Center at the University of Michigan. He split observations into two groups according to the availability of liquid assets. To address the sensitivity of the results to the definition of liquidity constrained, he constructed a basic split and an extreme split for creating the two groups. The basic split of liquid assets separated people into the non-liquid group if they had less than or

equal to two months' worth of (average) income in liquid non-housing wealth and into the liquid group if they had more than two months' worth of (average) income in liquid non-housing wealth. Under the extreme split of liquid assets, non-liquid groups were those with zero current liquid non-housing wealth and liquid groups were those with more than six months' worth of average income as liquid non-housing wealth (Zeldes, 1989: 329). Zeldes (1989) looked at the behaviors of both groups through use of Euler equation estimation and developed a Lagrange multiplier that was associated with the effect of liquidity constraints.

Zeldes' (1989) Lagrange multiplier should be strictly positive if liquidity constraints exist and is equal to the portion of consumption growth unexplained by his Euler equations. Euler equations are a set of first-order conditions designed to optimize utility subject to consumption and wealth constraints. Typical Euler equations regress the change in the natural log of consumption on important theoretical covariates such as the interest rate, household composition (to capture life-cycle preferences), labor supply, and others. The Euler equation estimation technique was first pioneered by Hall (1979) and expanded on by others, for example Mankiw (1981), Hansen and Singleton (1983), and by Shapiro (1984) who first used the approach on consumption panel data. Zeldes (1989) notes that any of his results that do violate the Euler equation structure created by Hall (1979) and others would indicate the presence of liquidity constraints, and vice versa.

Although Zeldes (1989) remarks that his results are not always robust across testing variations and sample selection procedures, his results generally support that liquidity constraints affect changes in consumption spending for individuals who are extremely liquidity constrained. Groups with no liquid assets had a positive Lagrange multiplier

associated with liquidity constraints on average and appropriately had results violating the Euler equation structure. When using a basic split of liquid assets, the change in consumption was measured at 1.7 percent but was insignificant; when using an extreme split of liquid assets, the change in consumption was measured at 4.3 percent and was significant (Zeldes, 1989). Thus, Zeldes' (1989) work suggests that liquidity constraints are a significant determinant and necessary assumption of consumption but only when constrained households have zero liquid assets.

Shea (1995) models consumer myopia and liquidity constraints with an OLS regression model of the change in consumption (Δc_t) with regression coefficients (λ_1 and λ_2 , respectively linked as follows) on the interactions between instances of positive income growth (POS_t) and the change in income ($\Delta \hat{y}_t$), and between instances of negative income growth (NEG_t) and the change in income ($\Delta \hat{y}_t$). Shea's (1995) model is shown by the following equation:

$$\Delta c_t = \mu + \lambda_1(POS_t)(\Delta \hat{y}_t) + \lambda_2(NEG_t)(\Delta \hat{y}_t) + \beta \hat{r}_t + e_t.$$

Shea (1995) notes that under myopia consumption tracks with current income. Thus, Shea (1995) hypothesizes that if myopia determines consumption, consumption should respond equally to positive and negative instances of income growth. Therefore, λ_1 and λ_2 should be equivalent. Alternatively, Shea (1995) hypothesizes that under liquidity constraints consumption should respond more from instances of positive income growth than from instances of negative income growth. Thus, λ_1 is statistically significant and greater than λ_2 : in other words, the change in consumption during instances of expected income growth is significantly positive and greater than the change in consumption during instances of expected income decline. Shea (1995) used a macroeconomic Euler

equation and quarterly data from 1956 to 1988 from the National Income and Product Accounts database to measure changes in consumption. Shea (1995) found that consumption responds more to instances of negative income growth.

Shea's (1995) results do not support his hypotheses and suggest some framework other than myopia or liquidity constraints as explanations for changes in consumption spending. Shea suggests that the loss aversion model developed by Bowman, Minehart, and Rabin (1993) more appropriately explains his findings. By using a macroeconomic model of consumption rather than a microeconomic model, Shea (1995) fails to capture changes in preferences that helped strengthen econometric arguments in favor of the PIH.¹⁴ Furthermore, given that Shea (1995) uses quarterly data from 1956 to 1988, his data only contains 129 observations which limits the statistical power. While possible that liquidity constraints may not explain aggregate consumption behavior over a 30-plus year period (e.g. 1956 to 1988), liquidity constraints may be useful in explaining changes in consumption to fiscal policies over a shorter-term.

Jappelli and Pagano (1989) look at the relationship between changes in consumption and levels of consumer debt to determine if and/or when liquidity constraints explain those changes. The authors provide a detailed analysis of both supply side and demand side factors of consumer debt and how those factors affect changes in consumption. On the supply side, they found the difference between borrowing and lending rates held very little explanatory power for changes in consumption whereas indicators of rationing, such as saving for a down-payment for a home, held a strong correlation with changes in consumption. On the demand side, the authors found tax incentives provided no

¹⁴ See Blundell, Browning, and Meghir (1994) and Attanasio and Weber (1995).

explanatory evidence about changes in consumption. Overall, they concluded that liquidity constraints explain changes in consumption where levels of consumer debt are low and therefore changes in consumption can be high. These results conform with Stiglitz and Weiss' (1981) theory of credit rationing by banks that reduces household borrowing and thus would cause low levels of debt.

In a follow-up to their 1989 work, Jappelli and Pagano (1994) use an overlapping-generations model to examine the effect of liquidity constraints on consumption. To assess the effects of liquidity constraints, they compute the effect of the maximum loan-to-value (LTV) ratio on household saving and consumption.¹⁵ As discussed in their 1989 work, Jappelli and Pagano (1994) note saving for a down-payment for a mortgage loan or any other personal consumer loan acts as a liquidity constraint in that lacking greater access to more credit forces consumers to reduce consumption to save for that down payment. A higher level of liquidity constraint (i.e. a larger down-payment target amount) will decrease the LTV ratio because the loan amount is inversely related with a down-payment. For example, out of a given purchase price, the larger the down payment the smaller the amount borrowed. Jappelli and Pagano's (1994) results demonstrated that lower LTV ratios contributed to higher savings rates and subsequently lower levels of consumption; and, therefore, liquidity constraints as borrowing limits generally decrease consumption.

Engelhardt (1996) similarly examines the presence of liquidity constraints on consumption using the housing and mortgage markets, particularly looking at how a down-payment on a mortgage (usually 5 to 20 percent of the purchase price of the house)

¹⁵ Loan-to-value ratio is the ratio of the amount of a loan to the value of the asset.

acts as a liquidity constraint on households. Engelhardt (1996) examines consumption for first-time home-buyers and reasons they must keep consumption and borrowing low in order to save for the down payment. Given that the down payment is a well-defined liquidity constraint, Engelhardt (1996) hypothesizes when it no longer binds additional consumption should happen. Engelhardt (1996) uses directly observable home purchases to estimate the effect of the down payment as a liquidity constraint and the expected additional consumption growth that follows its non-binding state change.

Similar to Zeldes (1989), Engelhardt (1996) used an Euler equation estimation and developed a LaGrange multiplier that was associated with the effect of liquidity constraints. If the LaGrange multiplier is positive, the Euler equation is violated and suggests the liquidity constraint is binding and effective (Engelhardt, 1996). Using consumption data from the PSID, Engelhardt (1996) examines changes in consumption for first-time buyer households in years they do and do not purchase a home. Engelhardt (1996) found that households consumed 5.3 percent more in years they purchased a home compared to years they did not purchase a home (significant at the 5 percent level). He also found that the two-year rate of real consumption growth is approximately 22 percent higher if a home was purchased in that two-year period than otherwise (significant at the 5 percent level). Engelhardt's (1996) results support his hypothesis that a down payment acts as a liquidity constraint and depresses consumption in years where households are saving for a down payment. Overall his findings are consistent with those of Jappelli and Pagano (1989, 1994) and Zeldes (1989).

c. Liquidity Constraints and Tax Rebates

Given the capital market imperfections for low-wage individuals discussed in

Hubbard et al. (1986), individuals with low wages/low incomes and little-to-no liquid non-human non-housing wealth will be considered liquidity constrained when discussing the effects of legislated tax rebates. The standard methodological approach to measuring behavioral responses to tax changes is to use aggregate consumption data and look for changes in behavior around the implementation date of tax policy changes: see Modigliani et al. (1977), Blinder (1978), Poterba (1988), Parker (1999), Souleles (1999, 2002), and Stephens (2003), for example. Authors can adopt other methodological approaches, however. For example, Shapiro and Slemrod (2003a, 2003b, 2009) and Sahm, Shapiro and Slemrod (2010) used survey data instead of aggregate consumption data. Shapiro and Slemrod (2003a, 2009) note that their estimates of MPC are remarkably similar to estimates derived from expenditure data.¹⁶ These works are discussed in more detail below.

Shapiro and Slemrod (2003a, 2003b) used survey responses to the University of Michigan Survey Research Center's Monthly Survey (known as Survey of Consumers) which was compartmentalized into three distinct surveys. The first was conducted from August to October 2001, which overlapped or shortly followed the mailing of tax rebates of the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) to the majority of American earners, and had a sample of 1,506. The survey's main question regarding the 2001 tax rebate asked respondents to answer whether the rebate will most likely lead to either increased spending, increased saving, or increased debt repayment. The second survey was conducted in March and April of 2002 and was a retrospective survey

¹⁶ The CES, while a dataset of quantitative spending, does ask participants to record their spending over (usually) the past 6 months. Participants answers may be based on memory rather than sales receipt or other forms of bookkeeping and thus presents a similar data collection process to surveys.

regarding how the tax rebate was used. The second survey had a sample of 1,002 with 405 participants of the second survey being re-surveyed from the first survey of 2001. The survey's main question regarding the tax rebates asked participants how they used the rebate: mostly increased spending, mostly increased saving, or mostly increased debt repayment. The third survey asked about a hypothetical, temporary rebate and was conducted in mid-September to mid-October of 2001. In response to the 9/11 terrorist attacks, the University of Michigan Survey Research Center administered a new survey, called "How America Responds", to measure shifts in social, political, economic, and psychological attitudes following the attacks (Shapiro & Slemrod, 2003b). The sample size for this survey was 752. The survey asked how a hypothetical \$1,000 federal tax rebate would influence economic behavior by either most likely increasing spending, increasing saving, or increasing debt repayment.

Shapiro and Slemrod (2003b) note that in the first survey, 21.8 percent of households said the tax rebate would lead to increased spending; the second retrospective survey reported that 24.9 percent of households said the tax rebate would lead to increased spending; and the third survey, on a hypothetical rebate, reported that 16.6 percent of households said the tax rebate would lead to increased spending.¹⁷ Furthermore, the authors found no significantly higher spending rates among low-income households in the first survey; and, stated that the results of the third survey measuring the response to a temporary, hypothetical rebate were consistent with economic theory given that there were no accompanying income tax cuts (Shapiro & Slemrod, 2003b).¹⁸

¹⁷ Of those individuals who participated in both the first and second surveys, 28.1 percent reported the tax rebate lead to mostly increased spending (Shapiro & Slemrod, 2003b).

¹⁸ Shapiro and Slemrod (2003a) divided survey participants into income brackets and found the share of responses indicating increased spending was lowest in the three lowest income brackets. Brackets were \$0

Shapiro and Slemrod (2009) and Sahm, Shapiro and Slemrod (2010) examined how the tax rebate of the Economic Stimulus Act of 2008 was used by recipients. Again, the authors used survey responses from a survey rider to the University of Michigan Survey Research Center's Monthly Survey.¹⁹ The survey rider was included each month from February through June 2008 and asked whether the tax rebate from the Economic Stimulus Act would lead to either mostly increased spending, mostly increased saving, or mostly increased debt repayment.²⁰ They found that only 19.8 percent of respondents said the tax rebate would lead to increased spending with an estimated MPC of 0.33 from the tax rebate. Shapiro and Slemrod (2009) and Sahm, Shapiro and Slemrod (2010) found, similarly to Shapiro and Slemrod (2003a), that reported increases in spending were lower among lower-income brackets compared to higher income brackets. For example, only 20 percent of individuals with incomes \$20,000 and under reported mostly increased spending whereas 26 percent of individuals with incomes over \$75,000 reported mostly increased spending.²¹

In addition to the initial survey rider data from the University of Michigan's Survey of Consumers, Shapiro and Slemrod (2009) used November to December 2008 survey

to \$20,000, \$20,001 to \$35,000, \$35,001 to \$50,000, \$50,000 to \$75,000, and more than \$75,000. The bottom income bracket had the lowest share of reporting increased spending with just 17.6 percent (Shapiro & Slemrod, 2003a). Conversely, in the top two brackets 27.0 and 24.1 percent, respectively, responded they were most likely to increase spending (Shapiro & Slemrod, 2003a). Furthermore, the authors found a 3.4 percentage point difference in increased spending between those with stock ownership and those without stocks. Overall, the survey results demonstrated that those households with lower income and wealth were more likely to save than spend than compared to higher income and wealth households.

¹⁹ Concerning the survey methodology, each month 300 new respondents are selected by random digit dial and 200 respondents are re-interviewed from six months earlier (Shapiro and Slemrod, 2009).

²⁰ The tax rebates were primarily received in May and June 2008. The authors found no significant differences between responses provided prior-to and during rebate reception.

²¹ Individuals who did not own stock reported mostly increased spending at a 20 percent rate and individuals who owned stock reported mostly increased spending at 22 percent rate with the high brackets of stock ownership (\$100,001 to \$250,000 and more than \$250,000) reporting mostly increased spending rates of 25 and 39 percent, respectively (Sahm, Shapiro & Slemrod, 2010).

data that provided retrospective reporting of the 2008 Economic Stimulus Act tax rebate usage. The survey asked respondents whether the rebate (if received) led to mostly increased spending, increased saving, or increased debt repayment.²² While the November-December survey data reported 22 percent mostly increased spending, Shapiro and Slemrod (2009) found no significant difference between the percentages of mostly increased spending from the November-December and February-June data; and, their MPC was consistent at 0.33.²³ Additionally, they found that 36 percent of individuals mostly spent the rebate within a few weeks of receipt and 50 percent of individuals mostly spent the rebate within one to three months of receipt. Thus, Shapiro and Slemrod (2009) and Sahm, Shapiro and Slemrod (2010) concluded that the rebate had a non-trivial effect on aggregate spending in the second and third quarters of 2008.²⁴ Broda and Parker (2008) found similar results to Shapiro and Slemrod (2009) and Sahm, Shapiro and Slemrod (2010) concerning the 2008 tax rebate. The authors used supplemental survey data from the AC Nielsen Homescan household-expenditure data and found significant effects on non-durable consumption spending from the rebate. Broda and Parker (2008) found spending increased by six percent on average for low income households and by 3.5 percent on average for all households. Furthermore, their results on the timing of how the rebate was spent is consistent with Shapiro and Slemrod (2009) and Sahm, Shapiro

²² Approximately 40 percent of the November-December sample participated and answered survey questions in May and June. Repeat participants were tested for test-retest reliability and no significant aggregate differences were detected between May-June and November-December answers (Shapiro and Slemrod, 2009).

²³ Unlike Shapiro and Slemrod (2003a, 2003b), Sahm, Shapiro and Slemrod (2010) found the spending distribution by income and wealth (as measured by stockownership) had a mostly increased spending distribution with a “modest U-shape” with lower income and wealth groups having slightly higher spending percentages than middle income and wealth groups, but lower than the highest income group and higher wealth groups (Sahm, Shapiro and Slemrod, 2010: pg. 16)

²⁴ Sahm, Shapiro and Slemrod’s (2010) evidence suggest that the tax rebate of 2008 simply pushed the sharp decline in aggregate spending in 2008 from the second to third quarter.

and Slemrod (2010).

Taylor (2011) used data from the Bureau of Economic Analysis' "Personal Income and Output" released in 2001 and 2008 and a satellite quarterly account on ARRA in 2009 to analyze the impact on consumer expenditures in response to the tax rebates and temporary transfers of the 2001, 2008, and 2009 stimulus packages. He found a negligible and statistically insignificant effect on consumption due to the tax rebates and temporary transfers of the aforementioned stimulus packages. While his results suggest no effect on overall consumption, his methodological approach is flawed compared to the standard methodological approach discussed earlier. For example, Taylor (2011) creates a cross-section of observations rather than panels of observations around the policy implementation. Taylor (2011) aggregates the 2001, 2008, and 2009 stimulus package payments into one variable instead of separate variables and looks at their effect on consumption across quarter one of 2000 to quarter one of 2011. This approach prevents measuring the effect of each specific stimulus on consumption.

Like Shapiro and Slemrod (2009), Taylor's (2011) methodology differs in some ways from the standard methodological approach and does not examine the impacts on liquidity constrained individuals. Taylor's (2011) results are dissimilar to others using expenditure data: see Agarwal et al. (2007), Bertrand and Morse (2009), Johnson et al. (2004), Shapiro and Slemrod (2003a, 2003b), Shapiro and Slemrod (2009), Sahm, Shapiro, and Slemrod (2010), Stephens (2003), and Souleles (2002). However, Taylor's methodology is similar, for example, to those of Shapiro and Slemrod (2003), Johnson et al. (2004), and Parker et al. (2011) in that he uses micro data to examine the direct impact of stimulus package tax rebates and transfers without imposing a parametric model

structure. This is advantageous for Taylor (2011) and other authors who do so because it minimizes the problems associated with predictive models/simulations that impose assumptions about consumer behaviors, the degree of consumption smoothing, crowding out, etc. For example, Romer and Bernstein (2009) and Cogan et al. (2010) used simulations to predict the effect of the ARRA but found different multiplier effects: 1.5 and 0.5, respectively.

Agarwal et al. (2007) examine if borrowing limits act as significant liquidity constraints and test this by using panel data of credit card accounts to examine how the 2001 tax rebate influenced credit card payments, spending, and debt levels. Debt levels are defined as interest-incurring balances that roll over from month-to-month. The authors used a proprietary data set from a large financial institution that contains a representative sample of 75,000 credit card accounts open as of June 2000 followed monthly for 24 months.²⁵ The authors hypothesize that individuals who are liquidity constrained by high utilization rates, defined as the percent of monthly credit balance to credit limit, will see larger increases in credit card spending versus payments following the tax rebate whereas individuals who are not liquidity constrained (those with high credit limits) will see larger increases in credit card payments versus spending. Gross and Souleles (2001) found that individuals with credit card monthly balances starting near their credit limits are more likely liquidity constrained than otherwise and thus strengthen Agarwal et al.'s (2007) liquidity constraint operationalization.

Individuals with a greater than 90 percent utilization rate increased credit card spending by \$332.80 because of the 2001 tax rebate as compared to \$19.70 for

²⁵ The authors do not disclose the name of the financial institution.

individuals with 1 to 50 percent utilization rate. When dividing credit limits into three groups—less than or equal to \$7,000, \$7,000 to \$10,500, and greater than \$10,500—the group with the lowest credit limit increased credit spending on average by \$141.00 and increased payments on average by \$41.20 because of the 2001 tax rebate; the group with the highest credit limit increased credit spending on average by \$39.70 and increased payments on average by \$193.20 because of the 2001 tax rebate. Overall, their results support their hypothesis and suggest that households that would smooth consumption by borrowing more cannot because of borrowing limits imposed by their creditors.

Bertrand and Morse (2009) found results similar to Agarwal et al. (2007) in that liquidity constrained consumers used tax rebates to make small increases to repaying debt. Bertrand and Morse (2009) looked at payday loan borrowers rather than credit card users and examined the 2008 instead of the 2001 tax rebates. Payday loan borrowers are liquidity constrained because of a lack of traditional borrowing options or because of borrowing limits on traditional borrowing options. Bertrand and Morse (2009) conducted a survey and field experiment with a large national payday lending chain between May 19 and June 14, 2008. Consenting participants answered a short paper survey and provided a complete loan transaction history.²⁶

Overall loan amounts only shrink by \$36.24 and \$40.07 in the pay period in which payday loan borrowers received their 2008 tax rebates and in the following pay period from which they received their 2008 tax rebates, respectively, (both values were statistically significant). In pay periods beyond the first one after receipt of the rebate , overall loan amounts only shrunk by approximately \$25 (though this value was

²⁶ The median yearly income for participants was approximately \$27,084 and the median (mean) loan value is \$299 (\$325) in 2008 dollars.

statistically insignificant). Compared to an average loan of \$325, these amounts represent a decline of approximately eight to 12 percent in total payday loan borrowing after receipt of the 2008 tax rebate. Bertrand and Morse (2009) also found some evidence that the 2008 tax rebates relaxed liquidity constraints of payday loan borrowers.²⁷ Payday loan consumers were six and 5.3 percentage points less likely to take-up a payday loan in the pay period in which they received their 2008 tax rebates and in the following pay period from which they received their 2008 tax rebates, respectively (both values were statistically significant).

Johnson et al. (2004) used the Consumer Expenditure Survey (CES) and a special section of questions regarding how the 2001 tax rebate was spent to measure the change in consumption caused by the 2001 tax rebate. The authors of the 2001 law worked with the Bureau of Labor Statistics (BLS) and other government agencies to insert a special module of questions asking about the rebate. The questions asked about the timing and amount of the rebate received by participants. Johnson et al. (2004) compare changes in consumption due to the rebate by comparing the expenditures of households that received the rebate at different times. Given that the timings of the mailings of the rebates were based on the second-to-last digit of individuals' social security numbers, the date at which households received a rebate is randomly assigned. Therefore, the receipt of (and thus spending of) the tax rebate is uncorrelated with other macroeconomic events.

Johnson et al. (2004) found that in the three-month period following rebate receipt,

²⁷ The authors also found evidence of instant-gratification consumers—those who report increasing payday borrowing upon receipt of the 2008 tax rebate on vacations, dining-out, entertainment, gifts, apparel, or electronics—increasing payday loan amounts by \$45 to \$50 in the pay period in which they received their 2008 tax rebates and in the following pay period from which they received their 2008 tax rebates. These same consumers were found to have increased overall borrowing by \$43 after the receipt of the tax rebate (Bertrand and Morse, 2009). However, the authors note that these results were statistically insignificant.

spending on nondurable goods increased by approximately 37 percent of the rebate amount (a statistically significant result). To check for robustness, Johnson et al. (2004) changed the functional form: the results were similar in both statistical significance and magnitude. When controlling only for households that received a rebate, Johnson et al. (2004) found spending on nondurable goods increased by 24.7 percent of the rebate received. Furthermore, Johnson et al. (2004) tested whether liquidity constrained consumers increased their spending from the rebate more than non-liquidity constrained individuals. They used age, family income before taxes, and liquid assets (the sum of checking and saving account balances) to measure liquidity constraints and equally split households into three groups, low, high, and intermediate or baseline, with the baseline group serving as the reference group.²⁸ For family income testing, the low group refers to households with family income less than \$34,299; the high group refers to households with family income greater than \$69,000; and the baseline group refers to households with incomes between \$34,299 and \$69,000. Households in the low group spent 63 percentage points more of their tax rebates on nondurable goods than the baseline group: a statistically significant estimate. High group households had no statistically significant difference from the baseline group.

For liquid-asset testing, the low group refers to households with liquid assets less than \$1,000; the high group refers to households with liquid assets greater than \$8,000; and the baseline group refers to households with liquid assets between \$1,000 and \$8,000.

²⁸ Testing age as a liquidity constraint was done because young households tend to have low liquid wealth and high income growth (Jappelli, 1990) (Jappelli et al., 1998). For age testing, the low group refers to households with earners younger than 40; the high group refers to households with earners older than 55; and the baseline group refers to households with earners between the ages of 40 and 55. Johnson et al. (2004) found no statistically significant results when using age as a liquidity constraint.

Households in the low group spent 87.6 percentage points more of their tax rebates (a statistically significant result) on nondurable goods compared to the baseline group. Households in the high group had no statistically significant difference from the baseline group. Overall, Johnson et al.'s (2004) results confirm that liquidity constrained individuals are more likely to use tax rebates on consumption spending than non-liquidity constrained individuals and conform with the results of Agarwal et al. (2007) and Bertrand and Morse (2009).

Stephens (2003) examines household responses to the receipt of Social Security checks and uses the CES Diary Survey to estimate changes in household consumption around the check arrival date.²⁹ Important categories of spending in the Diary Survey include food, gasoline, and personal care items. Stephens (2003) focused the analysis on the 14 days before and after receipt of Social Security checks. For all consumer units receiving Social Security checks, the probability of making any unplanned expenditures within six days after check receipt increased by 1.6 percentage points (significant at a one-percent level); for consumer units deriving 70 percent or more of their income from Social Security the probability of making any unplanned expenditures up to six days after check receipt increased by 2.3 percentage points (significant at the one-percent level) (Stephens, 2003). Stephens (2003) asserts that because the Social Security checks are a “frequent, constant, normal income stream,” households have ample opportunity to plan spending so that their monthly spending does not correlate with the receipt of the checks and be consistent with the PIH (Stephens, 2003: 419). However, his findings suggest some non-optimizing behavior, not necessarily being liquidity constrained, explain the

²⁹ The Diary Survey uses two consecutive one-week questionnaires to gather information on daily expenditures.

outcomes given his results of a burst in spending immediately after the check arrives.

Souleles (2002) tested household responses to the second and third phases of the Reagan tax cuts of the 1980s. These phases of the tax cuts were announced well in advance of their enactment. Given this, Souleles (2002) suggests that based on the PIH the consumption response should be rather muted. Souleles (2002) used CES data from 1982 and 1983 and used variables measuring the amount of federal income tax withheld from each paycheck in the process of measuring consumption responses. Souleles (2002) found an MPC on nondurable goods of 0.66 (significant at the five-percent level). His results were consistent when changing model specification, suggesting robustness. Souleles (2002) says given these results and the predictable and announced nature of the Reagan tax cuts, the PIH does not appropriately explain the spending behaviors—in agreement with Stephens (2003). Furthermore, Souleles (2002) found no significant consumption response from the bottom income quintile—similar to Shapiro and Slemrod (2003a, 2003b, 2009) and Sahm, Shapiro, and Slemrod (2010)—which he says suggests liquidity constraints do not explain spending behaviors either.

d. Expansions of the Earned Income Tax Credit (EITC)

Much of the research on the EITC focuses on labor supply effects: see Liebman (1998), Meyer and Rosenbaum (1999), and Meyer (2010), for example. However, given that the broad intent of the ARRA's tax policy for individual households and consumers was to increase consumption spending, this section focuses on how EITC reforms affect

consumption spending by EITC recipients.^{30,31}

Smeeding et al. (2000) sampled 7,000 Chicago area households that filed free tax returns with the Center for Law and Human Services (CLHS) in the winter and spring 1998 to assess the impact the EITC had on these households. Their effective sample size was 826 taxpayers who received both a federal tax refund and the EITC as part of that refund. At the 25th percentile of refund receipt, the EITC was about 70 percent of the total refund. Thus, it would still be the main source of potential spending changes even though it is not completely separated from other refund sources (Smeeding et al., 2000).

Respondents were asked to detail their expenditures, their assets, and their ability to make certain expenditures absent assistance from the EITC. Expenditures included paying bills, purchasing goods and services, and saving. The authors divided all uses of the EITC for expenditures into two categories: improving social mobility (e.g. purchasing a car, paying tuition, housing) and “making ends meet” (e.g. paying routine bills, purchasing food).

Smeeding et al. (2000) reasonably conclude their sample is generally liquidity constrained based on Edin (1998) and Loprest (1999) who highlight how welfare recipients are generally liquidity constrained. Smeeding et al. (2000) suggest that although their sample contains individuals who have more positive formal earnings than welfare recipients, they anticipate their sample being very similar to welfare recipients given that most are single parents with prior receipt of welfare. Given that Smeeding et

³⁰ Although a positive labor supply effect from a change in EITC is helpful for growing an economy, the immediate need of the economy in the midst of the 2008-2009 recession was not more workers. Quite the contrary, employers were shedding workers at an alarming rate.

³¹ Given the changes to the EITC by the ARRA, a possible hypothesis to test in future research is the consumption response of those recipients who file jointly as a married couple or who file jointly as a married couple with three or more qualifying children. Furthermore, another possible hypothesis to test in future research is the consumption response of those recipients with incomes around the poverty line who also meet the previous criteria. Liebman (1998) notes the effects of the EITC are concentrated around the poverty line.

al.'s (2000) sample is generally liquidity constrained, the authors hypothesize that the EITC should increase unplanned consumption expenditures.

Smeeding et al. (2000) used logistic regressions and reported odds ratios instead of coefficients. The authors found that recipients of the EITC are more than 1.24 times more likely (significant at the 5 percent level) to have a social mobility use for a portion of their refund than non-EITC receiving recipients. The authors found a statistically insignificant odds ratio for a "making-ends-meet" use of recipients' refunds. Improving social mobility included expenditures on general savings, paying off bank loans, car payments, credit card bills, medical bills, purchasing or repairing a car, sharing money with family members, fixing up a home, moving expenses, tuition/school expenses, child care bills, and paying off personal loans. Thus, Smeeding et al.'s (2000) results suggest limited support for their hypothesis that the EITC represents an opportunity for unplanned consumption. While some categories of social mobility spending, such as purchasing a car, fixing up a home, or paying tuition/school expenses, are generally consumption expenditures, many of the other categories represent either debt servicing or savings. By not separating the categories of social mobility spending, their results do not convincingly demonstrate increased unplanned consumption expenditures from the EITC.

Simpson et al. (2010) analyzed survey data collected through the Madison County (a rural county in upstate New York) Volunteer Income Tax Assistance (VITA) program for tax years 2002 to 2004. This program offers free tax return preparation to low-income workers. The authors studied the responses of 282 EITC recipients and used a methodology similar to Smeeding et al. (2000) in that they looked at how EITC recipients were going to use their refunds. The authors created three categories of planned spending:

basic needs, debt repayment, and purchase of durable goods. Basic need spending includes spending on rent, utilities, groceries, medical bills, and clothing. Debt repayment spending includes spending on credit card bills, car payments, and bank, student or personal loans. Durable goods purchases include spending on automobiles and household appliances. The authors found that 64.2 percent of recipients stated basic needs spending would be an intended use of their refund; 49.6 percent of recipients stated debt repayment would be an intended use of their refund; and 26.6 percent of recipients stated durable goods purchases would be an intended use of their refund.³²

Simpson et al.'s (2010) results share similar weaknesses to Smeeding et al. (2000). Primarily, their results do not provide strong evidence that the EITC increases unplanned consumption. While the purchase of durable goods may be considered unplanned consumption, it is the smallest first-priority spending item among the sample.³³ Like the recipients in Smeeding et al. (2000), Simpson et al.'s (2010) sample participants seem more likely to pay bills. Furthermore, their results only examine the spending intentions of EITC recipients rather than actual spending.

Barrow and McGranahan (2000) explored the effect of the EITC on consumption using data from the CES from 1982 through 1996. The authors impute EITC eligibility and payments based on information concerning children, earnings, and household structure. This imputation is done because the CES did not ask any direct questions relating to EITC status. The authors look at three different categories: total expenditures, durable goods expenditures, and nondurable goods expenditures. Durable goods

³² The percentages add up to greater than 100 percent because these categories are not mutually exclusive.

³³ Barrow and McGranahan (2000) note that durable goods consumption is typically unplanned and/or irregular consumption given that most consumers spend less on durable goods per month but durable goods expenditures have higher standard deviations across months.

expenditures consist of purchases of household furnishings and equipment, televisions and other home electronics, and vehicle purchases. Nondurable goods expenditures include purchases of food, clothing, and entertainment. The following purchases are included in total expenditures but in neither durable nor nondurable expenditures: health care, education, shelter, utilities, vehicle finance charges, vehicle insurance, and other household operations. The authors are particularly interested in the difference in durable goods expenditures between EITC recipients and non-EITC recipients.

Given that most consumers spend less on durable goods per month but durable goods expenditures have higher standard deviations across months, the authors treat durable goods consumption as unplanned and/or irregular consumption. They also are primarily interested in the differences in the months of February through April because February is the modal month of EITC refund receipt with March and April as the other most common months of EITC refund receipt.³⁴ The authors found that durable goods expenditures were 5 percent, 0.2 percent, and 2.6 percent higher for EITC recipients versus non-EITC recipients in the months of February, March, and April, respectively (significant at the 5 percent level). Their results provide stronger evidence than Smeeding et al.'s (2000) or Simpson et al.'s (2010) results that the EITC induces unplanned consumption spending among EITC recipients as compared to non-EITC recipients.

Gao, Kaushal, and Waldfogel (2009) used data from the CES (1994 to 2004), selected a sample of single mothers as a proxy for EITC recipients, and measured their consumption responses to increases in the EITC. Aside from using single mothers as an EITC proxy rather than imputation, their study differs from Barrow and McGranahan

³⁴ This result is confirmed by Gao, Kaushal, and Waldfogel (2009).

(2000) in that it includes levels of family debt, detailed expenditure patterns, and analysis by education groups. Using OLS regression, the authors find no statistically significant effects on consumption expenditures overall from the EITC. However, the authors found that the effect of receiving the EITC in February increased consumption expenditures by 9.7 percent (significant at the 5 percent level) and increased durable goods expenditures by 5.7 percent (significant at the 5 percent level). Their results are similar to Barrow and McGranahan (2000) in that the receipt of the EITC caused an immediate increase in durable goods expenditures. It is possible that differences in methodology between the two studies discussed above account for the differences in results.

Mendenhall et al. (2012) visited selected non-profit and for-profit tax preparation sites in Boston and Central Illinois at random intervals and invited all who filed an Earned Income Credit (EIC) schedule to participate in a survey focusing on their planned uses of the refund. Of all the households asked to participate only 194 households (79 in Central Illinois and 115 in Boston) participated in in-depth interviews that collected data on actual spending of the refund, amount saved, monthly and post-refund expenditures and other things (Mendenhall et al., 2012: 13). The authors found that 45.59 percent of the total refund of EITC recipients was spent on current consumption, 19.07 percent was spent on asset building (e.g. savings, education, home purchase or improvement), and 35.78 percent was spent on debt servicing (e.g. bills, credit card and other debt). Mendenhall et al.'s (2012) results represent much stronger evidence that the EITC increases consumption expenditures as compared to Smeeding et al.'s (2000) and Simpson et al.'s (2010) results. However, there are limitations to this and other studies.

Mendenhall et al. (2012) note that much of the literature about the EITC and

consumption spending focuses on how recipients plan to allocate their refunds rather than how much recipients actually spend on those allocations: see Smeeding et al. (2000), Spader et al. (2005), and Rhine et al. (2006), for example. Rhine et al. (2006) note that only a small portion of EITC recipients use non-profit tax preparers despite many studies relying on samples of EITC recipients who use non-profit tax preparers. This creates a sample selection bias in that this portion of EITC recipients who use non-profit tax preparers may exhibit certain heterogeneities when compared to all other EITC recipients. Gao, Kaushal, and Waldfogel (2009) used data from the CES (1994 to 2004), selected a sample of single mothers as a proxy for EITC recipients, and measured their consumption responses to increases in the EITC. While an intriguing design, it lacks the precision of the imputation method used by Barrow and McGranahan (2000) but is not limited by a few locations as with Smeeding et al. (2000), Spader et al. (2005), Rhine et al. (2006), and Mendenhall et al. (2012). Still, the research may not be perfect but does help capture to some extent the consumption behaviors of EITC recipients.

Overall, there are issues and inconsistencies across the literature on the interaction between consumption decisions, liquidity constraints, and tax rebates and credits. For example, Shea's (1995) research suggests that liquidity constraints are not the primary behavior driving spending patterns. Conversely, Zeldes' (1989), Jappelli's and Pagano's (1994), and Engelhardt's (1996) research suggest the opposite: that liquidity constraints significantly influence spending behaviors. Souleles' (2002), Shapiro's and Slemrod's (2003a, 2003b, 2009) and Stephens' (2003) research suggest that being liquidity constrained does not induce more consumption spending than otherwise. Shapiro's and Slemrod's (2003a, 2003b) work concluded that the 2001 tax rebates generally lead to

higher rates of saving among lower income individuals, thus making them ineffective policy tools for boosting short-term consumption spending. Conversely, Johnson et al. (2004), Agarwal et al. (2007), Elmendorf and Furman (2008), Bertrand and Morse (2009), and the Congressional Budget Office (2015) conclude that liquidity constrained households have a higher MPC out of tax rebates than unconstrained households.

The following chapter discusses how these issues are tested in this paper. Particularly, this paper examines the effects of ARRA tax policies on liquidity constrained versus non-liquidity constrained households, the effects of liquidity constraints on consumption generally, and the effects of the ARRA tax policies on consumption by all households. The models developed for this paper follow the standard methodological approach to measuring behavioral responses to tax changes discussed in this chapter and used by Modigliani et al. (1977), Blinder (1978), Poterba (1988), Parker (1999), Souleles (1999, 2002), and Stephens (2003). Household consumption data is used and sample frames focus on changes in behavior around the implementation dates of the ARRA tax policies.

IV. Research Design

One reason tax rebates and credits are issued is to incentivize consumers to spend more than they would have otherwise. Using the methodology of Barrow and McGranahan (2000), Souleles (2002), Johnson et al. (2004), and Simpson et al. (2010), this paper examines each tax policy's effect on the monthly change in total consumption expenditures, total nondurable goods expenditures, and total durable goods expenditures of liquidity and non-liquidity constrained households. The primary research hypotheses are:

1. The MPCs from the ARRA tax policies on the monthly change in expenditures of liquidity constrained households are larger than those of non-liquidity constrained households.
2. Liquidity constrained households, defined by zero liquid assets, have negative monthly changes in consumption compared to non-liquidity constrained households.
3. Liquidity constrained households, defined by sufficiently high debt-to-income ratios, have negative monthly changes in consumption compared to non-liquidity constrained households.
4. The ARRA tax policies generated positive MPCs for all households on the monthly change in expenditures.

This paper adds to the discussion on the effectiveness of ARRA by providing MPCs of all households from the three tax policies, MPCs of liquidity constrained households from the policies, and basic multiplier estimates and changes in output of all households from the policies and of liquidity constrained households from the policies. Multiplier

effect estimates are derived using the transfer payment multiplier (Carlin and Soskice, 2006).³⁵ Furthermore, the results provide evidence of the effects of liquidity constraints on the monthly change in consumption. If the coefficients of liquidity constraints are generally statistically significant, this suggests that liquidity constraints help explain spending behaviors by households with non-optimal consumption rather than some other non-optimizing behavior as suggested by Campbell and Mankiw (1991), Shea (1995), or Stephens (2003). Understanding the purchasing behaviors of liquidity constrained households also improves the targeting and forecasting of future similar policies and gives opportunities for policymakers to enact complimentary policies that benefit liquidity constrained households. For example, Edin (1998) and Loprest (1999) note that welfare recipients are generally liquidity constrained. Thus, if liquidity constrained households have positive MPCs out of the tax reductions, then policymakers could combine the policies with other expansionary policies aimed at welfare recipients (e.g. child care credits) to boost economic output from this population.

There are three reasons why studying the effect on the monthly change in all three spending categories is important. First, understanding if each policy had an overall significant exogenous effect on the monthly change in total consumption expenditures is important both for determining the success of ARRA generally and each tax policy in particular. Determining if each policy has a significant effect helps policymakers ascertain if similar policies are worth considering for future expansionary fiscal policies. Beyond the economic benefit of the tax policies themselves, policymakers receive a

³⁵ The multipliers calculated from the MPCs are not based on the assumption that every individual or firm in the chain of purchases has the same MPC as the households examined here. Rather, these MPCs calculate an estimated multiplier effect from the final purchases made by households alone.

political benefit by giving tax expenditures to groups (Kraft and Furlong, 2012). Second, examining the effect of each policy on the monthly change in nondurable goods versus durable goods expenditures helps improve the targeting of the policies, improves forecasts of consumption spending, and provides evidence of purchasing behaviors of recipients of the policies. It is possible that only certain purchases, or certain purchases from certain groups, have sensitivity to changes in current income. For example, recipients of the EITC are lower-income households that may use a windfall of cash to purchase large, expensive items, like furniture, a washing machine or a car (i.e. durable goods), that they have been delaying purchasing because of the large upfront cost. Understanding purchasing behaviors induced by the policies allows policymakers to more accurately predict which sectors of the economy would be boosted by future similar policies and enact other future complimentary policies. Third, examining the effect of each policy on the monthly change in these three consumption categories helps boost understanding of the size of future similar policies. For example, if any of the tax policies demonstrates generally statistically significant effects on the monthly change in any type of expenditure but has relatively low practical significance (e.g. an MPC of 0.005), then policymakers may want to consider alternative policy tools for stimulating consumption.

Hypothesis 1 is based on the theoretical framework displayed in Figure 2 of Chapter II which shows liquidity constrained households have positive MPCs out of increases in current income. Carlin and Soskice (2006) note the sensitivity of consumption to predictable changes in income present in the aggregate data. Given that the ARRA tax policies studied here were predictable (and temporary) changes in income announced prior to implementation, acceptance of hypothesis 1 means the same is true in the

microeconomic data. Support for hypothesis 1 is generally significant and positive MPCs out of the tax reductions from liquidity constrained households. Although the PIH as discussed in Chapter II predicts temporary income changes should produce no consumption response that prediction operates under the assumption of perfect capital markets and no liquidity constraints. Therefore, a positive consumption response from liquidity constrained households as discussed in the theoretical framework of and displayed in Figure 2 of Chapter II is reasonable to expect.

Hypotheses 2 and 3 are also based on the theoretical framework in Figure 2 of Chapter II. However, these hypotheses are based on the construct that liquidity constrained households normally consume below the optimal consumption bundle. Thus, given the framework laid out in Chapter II, the coefficients of liquidity constraints should be negative, indicating consumption below the optimal level for those households.

Hypothesis 4 is based on the theoretical framework of Figure 1(b) in Chapter II in which consumption should increase in response to an increase in income. Unlike for hypothesis 1, the PIH more likely explains any insignificant consumption response from the ARRA tax policies studied here as they were only changes in temporary income and thus should cause no change in consumption according to the PIH. As mentioned above, Carlin and Soskice (2006) note that consumption is sensitive to predictable income changes in the aggregate data. Given that the ARRA tax policies were predictable income changes, it is likely there will be some significant consumption response from their receipt. Furthermore, likely unequal tax burdens across the income distribution also make it unlikely that Ricardian equivalence will hold. Carlin and Soskice (2006) note changes in households' and individuals' savings rates in the aggregate data do not completely

offset changes in fiscal policy. Accepting hypothesis 4 means consumption is sensitive to predictable income changes and that changes in households' and individuals' savings rates do not completely offset changes in fiscal policy in the microeconomic data as well as the aggregate data. Hypothesis 4 will be supported by the results if the MPCs from the tax policies on households are generally significant and positive.

For all hypotheses, the results have greater validity because of ARRA being a policy shock and a quasi-experiment of sorts. Each of the three policies were exogenous positive shocks to household income. In this case, those who are liquidity constrained or affected by the policies comprise the treatment group and those who are not liquidity constrained or not affected by the policies comprise the comparison group. The assignment to the treatment condition was partially controlled by Congress and partially exogenous. Partial control was exerted by Congress when it decided who qualifies to receive the tax breaks. Assignment was partially exogenous because liquidity constraints were determined prior to the implementation of these policies, and, due to practical and financial constraints cannot typically be changed instantaneously. The quasi-experimental design of these policy shocks allows for the MPCs and coefficients to have increased external validity and to have some generalizability to the effect of similar tax policies on liquidity constrained households and on households generally. However, the unique nature of the recession may limit the generalizability of the results.

a. Model Specifications

1. Short-Run Response

Equation 1 represents the specification for the short-run response of consumption to the tax policies and liquidity constraints and is used to test all four hypotheses:

$$dC_{i,t} = \alpha_{i,t} + \sum \beta_1 \text{MONTH}_j + \beta_2' \mathbf{X}_{i,t-1} + \beta_3 \text{Policy}_{i,t} + \beta_4 \text{Lq.Constraint}_{i,t} + \beta_5 Y_{i,t} + \varepsilon_{i,t} \quad (1).$$

In these equations, $dC_{i,t}$ is the level or log change in consumption expenditures for household i in month t . MONTH_j are a series of indicator variables for every month in the study period that control for seasonality and other macroeconomic factors. One month-indicator variable is omitted in every regression model. $\mathbf{X}$ represents a vector of variables (permanent income, the age of the household head and the changes in the number of adults and children) to control for changes in spending preferences in the previous month from t . Age is modeled as a quadratic to capture the presumed rising then falling of consumption by age. The model assumes that individuals have increasing consumption through mid-adulthood due to acquiring a certain quantity of goods and services. After a point, whether due to obtaining most needed and wanted goods and services over the course of a lifetime or children becoming financially independent, the model assumes consumption will fall with age. The number of adults and children should be positively related with spending as more people in a household necessitates at least more spending on necessities and likely more spending on luxuries.

$\text{Policy}_{i,t}$ is the dollar amount of the tax cut or savings received by household i in month t . $\text{Lq.Constraint}_{i,t}$ is the indicator variable if household i is liquidity constrained in month t . $Y_{i,t}$ is the interaction term of the dollar amount of the tax policy received and the indicator variable of being liquidity constrained for household i in month t . Finally $\alpha_{i,t}$ is a household-specific fixed effect for household i in month t .

Equation 1 is estimated using an Euler estimation technique similar to Hall (1979) and in line with the previous literature: see Zeldes (1989), Lusardi (1996), Parker (1999),

Souleles (1999, 2002), and Johnson et al. (2004). The control variables (i.e. month dummies and preference variables) and timing specifications are based on Souleles (2002) and Johnson et al. (2004) both of which focus on the sensitivity of consumption to stimulus-related tax policies.

The coefficient β_3 measures the MPC out of the tax cut and is the causal effect of the tax policy receipt on the monthly change in consumption; its statistical significance addresses hypothesis 4. This is the coefficient most relevant for policymakers. The coefficient β_3 provides the average MPC of consumers out of a tax cut and thus can be used to find the expected multiplier value of these tax policies. If β_3 is generally significant, this suggests acceptance of hypothesis 4 and that the tax policies are effective expansionary fiscal policies in that they induce a significant consumption response. However, the practical magnitude of β_3 must be considered in addition to its statistical significance. If MPCs are low enough such that multiplier values are below one, then these tax policies provide little impetus to spend and the funds lost to the government budget might have been better used elsewhere.³⁶ The coefficient β_4 measures the causal effect of liquidity constraints on the monthly change in consumption and is the subject of hypotheses 2 and 3. The coefficient β_5 measures the MPC of the liquidity constrained beneficiaries of the tax cuts and tests hypothesis 1.

To measure the effect of the tax policies on the natural log and level changes in

³⁶ As discussed in Chapter III, section a., assuming that multiplier values of less than one demonstrate for every government expenditure dollar spent, new output generated is less than one dollar, multiplier values of one demonstrate for every government expenditure dollar spent, new output generated is equal to one dollar, and multiplier values of greater than one demonstrate for every government expenditure dollar spent, new output generated is greater than one dollar, policies should ideally have multipliers greater than one. Anything less than one is sub-optimal. Auerbach et al. (2011) notes that an implication of multipliers below 1.0 is that some net crowding-out of components of GDP other than the component measured by the multiplier occurs.

expenditures, both equations are measured using an ordinary least squares (OLS) fixed effects technique. The use of OLS fixed effects is based on the specifications of Zeldes (1989), Souleles (2002), Stephens (2003), and Johnson et al. (2004). Fixed effects are useful for capturing anything unique or heterogeneous to each household and to create more efficient estimates (Studenmund, 2006).³⁷ Heteroskedasticity-robust standard errors are also reported for all models. For those models using natural logarithmic dependent variables, estimation procedures are adjusted to account for the correct interpretation of MPC coefficients in a logarithmic-linear functional form. In particular, Daun's (1983) smearing estimate is used.³⁸ Given that the tax cut amounts are not randomized, it is possible that they are not exogenous. To address this possibility, equation 1 is estimated using a two-stage least squares (2SLS) fixed effects technique. The use of 2SLS and an indicator instrument, and testing for exogeneity of the policy amounts are based on the work of Johnson et al. (2004). Johnson et al. (2004) instrument the tax cut amounts using an indicator variable measuring if a CU received the tax cut or not. The 2SLS models of this paper use the same instrument.³⁹ To test for exogeneity in the policy amounts and their variation, Hausman tests between the OLS and 2SLS results are used. If the Hausman tests are insignificant and reveal no systematic differences in coefficients

³⁷ Sample weights are provided by the BLS in the CES that can correct heteroskedasticity and improve efficiency; however, weights may not necessarily be useful if there is no omitted variable bias (Studenmund, 2006). It is possible that weighting can reduce efficiency and cause heteroskedasticity when individual-level error terms are clustered by some group (e.g. region, education, or race) and the group effect is relatively large and homoskedastic (Dickens, 1990) (Lee and Solon, 2011). While weights can be used in fixed effects estimators, weights must be constant within households. Household weights from the CES are not always equal from month-to-month. Furthermore, the household fixed effect should capture any effects from household-specific omitted variables. Thus, weights are not used in favor of the efficiency gains from the fixed effects estimator and to avoid the issue of unequal month-to-month household weights.

³⁸ Daun's (1983) smear estimate for logarithmic transformations with normally distributed errors is $\exp(x\beta + \sigma^2/2)$ where $x\beta$ is the linear predictor or marginal effect, σ^2 is the variance of the error term and "exp" is the exponentiation factor or Euler's number.

³⁹ In addition to the using the instrument in the first-stage of the 2SLS, the other covariates in equation 1 are also used in this first-stage. This is also based on Johnson et al. (2004).

between the OLS and 2SLS estimates, then the policy amounts and their variations can be assumed to be appropriately exogenous.

2. Long-Run Response

Equations 2 and 3 below show the specifications when lags of the tax policy variables are included in the models and are used to test hypothesis 4.

$$dC_{i,t} = \alpha_{i,t} + \sum \beta_1 \text{MONTH}_{j,i} + \beta_2 \mathbf{X}_{i,t-1} + \beta_3 \text{Policy}_{i,t} + \beta_4 \text{Policy}_{i,t-1} + \beta_5 \text{Lq.Constraint}_{i,t} + \beta_6 Y_{i,t} + \varepsilon_{i,t} \quad (2).$$

$$dC_{i,t} = \alpha_{i,t} + \sum \beta_1 \text{MONTH}_{j,i} + \beta_2 \mathbf{X}_{i,t-1} + \beta_3 \text{Policy}_{i,t} + \beta_4 \text{Policy}_{i,t-1} + \beta_5 \text{Policy}_{i,t-2} + \beta_6 \text{Lq.Constraint}_{i,t} + \beta_7 Y_{i,t} + \varepsilon_{i,t} \quad (3).$$

Equation 2 includes a one-month lag of the tax policy variables and equation 3 includes both a one-month and two-month lag of the tax policy variable. The one-month lag variable is $\text{Policy}_{i,t-1}$ and the two-month lag variable is $\text{Policy}_{i,t-2}$. The methodology and interpretation of the coefficients of equations 2 and 3 is otherwise equivalent to that of equation 1 from the previous section with the only difference being the addition of the lagged policy variables. The use of lagged policy variables is based on the long-run specifications of Johnson et al. (2004) and their work on the income tax rebates of 2001.

The lagged policy coefficients of β_4 and β_5 should not alter any conclusions made about the contemporaneous effect of the tax policies, coefficient β_3 . In these models with lagged coefficients, the total effect of the tax policy on consumption is the summation of the contemporaneous and lagged coefficients. This summation of coefficients is also most relevant for policymakers. The summation provides the average long-run MPC of consumers out of the tax cuts and thus can be used to find the expected long-run multiplier value of the tax policies. If the long-run effect is generally significant, this

suggests similar conclusions to a significant short-run effect. However, significant long-run effects also suggest the tax policies induce a delayed consumption response in addition to any possible significant short-run effects. Knowing of any significant delayed consumption responses also helps improve the long-run forecasting of similar future policies by policymakers.

b. Data Description

1. Data Selection and Sampling Procedures

This paper uses the CES Public-Use Microdata (PUMD) from 2008 to 2010 across the three tax policies. The CES is administered quarterly by the Bureau of Labor Statistics (BLS) and is comprised of “Diary” and “Interview” surveys and this paper uses the Interview survey. For the Interview survey, BLS employs a panel rotation survey method whereby each panel (i.e. all sampling units) is interviewed for five consecutive quarters then dropped from the survey. Based on this method, approximately 20 percent of the addresses are new to the survey each quarter (U.S. Bureau of Labor Statistics, 2010a) (U.S. Bureau of Labor Statistics, 2010b). When interviewed, respondents are asked to report expenditures made since the first day of the month three months prior to the interview month. For example, if a respondent is being interviewed in April 2012 then he/she is reporting expenditures for January 1, 2012 through March 31, 2012. Given this structure, BLS defines the collection period as when expenditures were reported and the calendar period as when expenditures were made (U.S. Bureau of Labor Statistics, 2010a) (U.S. Bureau of Labor Statistics, 2010b).

For Interview survey data, BLS has an annual target sample of 7,060 per quarter with an estimated total work load of 11,500 sampling units per quarter. The total work load is

larger to allow for refusals, vacancies, and nonexistent sample unit addresses (U.S. Bureau of Labor Statistics, 2010a). According to BLS (2010a, 2010b) documentation, samples for the CES are created using national probability samples of households designed to be representative of the total U.S. civilian population (U.S. Bureau of Labor Statistics, 2010a) (U.S. Bureau of Labor Statistics, 2010b). The non-institutionalized, civilian population is eligible for inclusion in the CES. From here, BLS's first step in sampling is to create primary sampling units (PSUs) which consist either of counties (or parts thereof) or groups of counties. These PSUs consist of four groups: "A" PSUs are Metropolitan Statistical Areas (MSA's) with a population greater than 1.5 million; "X" PSUs are "medium-sized MSA's"; "Y" PSUs are non-metropolitan areas that are included in the Consumer Price Index (CPI); and "Z" PSUs are non-metropolitan areas where only the urban population data is included in the CPI (U.S. Bureau of Labor Statistics, 2010a) (U.S. Bureau of Labor Statistics, 2010b).

The sampling frames (i.e. housing units available for participation) for the 2008 to 2010 surveys were generated from the 2000 Census. In each of the datasets, an un-clustered sample of housing units within each PSU was selected to the degree possible. According to BLS, a minimal degree of clustering is desirable given the smaller sample size of some of the CES datasets and the relatively large intra-class correlations for expenditure characteristics. In order to estimate average expenditures, BLS uses data from the Diary survey combined with data from the Interview survey. The primary unit of analysis in the CES is the consumer unit (CU) which is representative typically of a household or family at a particular address or housing unit (U.S. Bureau of Labor Statistics, 2010a) (U.S. Bureau of Labor Statistics, 2010b). The CU aggregates all

individual members' spending, income, tax refunds, taxes paid, and other economic and financial characteristics. In the datasets, each unique consumer unit is given a unique identifier. It should be noted that some consumer units may contain more than one household or family despite being at the same particular address or housing unit.

2. Collection and Processing

The CES is collected and processed by two different entities: first the U.S. Census Bureau then the Bureau of Labor Statistics (BLS). According to BLS (2010a, 2010b) documentation, the Census Bureau conducts quality checks for counts, missing values, and other errors and inconsistencies proprietary to both the Diary and Interview survey data. After this, the data is sent over to BLS. From here, BLS employs proprietary methods that correct irregularities and inconsistencies, eliminates business and reimbursed expenses, applies sales taxes, and derives CU weights. BLS imputes demographic and work experience fields when the values are missing or invalid. BLS reviews counts, weighted and unweighted means, and expenditure and income extreme values. Any extreme data values are corrected. All data transformation efforts are verified before being finalized. BLS conducts two types of data adjustment: imputation and allocation. Imputation is done to correct for missing or invalid entries.⁴⁰ Allocation is performed when respondents provide insufficient detail regarding certain expenditure items. For example, fields related to combined fuel and utilities expenditures are allocated among gas, electricity, and other. Fields are also adjusted to categorize expenditures by month. All the above procedures are applied to both the Diary and Interview portions of the survey. For a fuller discussion of the collection and processing

⁴⁰ All fields are eligible for imputation except fields related to assets.

of the CES, see BLS (2010a, 2010b) documentation

3. Top-Coding

To protect the identity of some of the CES respondents, certain fields are top-coded. As defined by BLS, top-coding “...refers to the replacement of data in cases where the value of the original data exceeds prescribed critical values,” (U.S. Bureau of Labor Statistics, 2010b: 40). Values that fall above any critical value are replaced with the top-coded value that is the mean of all outliers for that particular field. The critical values and top-coded values are created using all five quarters of CES data in a particular survey year. These values are subject to change over time based on the values gathered from each yearly survey.

Some examples of top-coded variables include the market value of all securities and the market value of all U.S. savings bonds. For the market value of all securities, the critical value is \$1,000,000 and the top-coded value is \$3,679,267. For the market value of all U.S. savings bonds, the critical value \$29,000 and the top-coded value is \$67,310. The issue with top-coding is it reduces precision and introduces some measurement error into the data. However, the measurement error should be minimal as it only applies to the wealthiest households. For a fuller discussion of the top-coding and non-disclosure of the CES, see BLS (2010a, 2010b) documentation.

4. Weighting Procedures

Each CU in the CES represents some number of CUs in the entire U.S. population. BLS (2010a) performs a four-step weighting procedure to appropriately weight each CU in the sample. First, weights equal to the inverse of the probability of selection are assigned to addresses. Second, a “weight control factor” is applied to CUs if sub-

sampling is performed during the interviews (BLS, 2010a: 137). Third, a nonresponse adjustment, which is a function of region, housing type, family size, and race, is made to CUs. Finally, final adjustments are made to adjust sample outcomes to national population controls from the Current Population Survey (CPS). These national population controls include age, race, region, urban, and homeownership categories. The weighting procedures are iterative to ensure all population controls are met.

c. Dependent Variables

The change in total consumption expenditures, total nondurable goods expenditures, and total durable goods expenditures are measured both as the level of their dollar values and the natural logarithm of the level. Both measurement techniques are used as a form of sensitivity analysis and both have both advantages and disadvantages. The natural logarithm of dollar values produces a more normal-distribution in a distribution with high positive skewness (Angrist & Pischke, 2008) (Kennedy, 2008). However, the models using the natural log only contain observations of households with strictly positive changes in consumption only. The non-randomness of these households may bias the results. The models using the level dollar values capture all households, including those with a negative or zero change in month-to-month spending which otherwise are excluded from the natural logarithm models. The level dollar value models expand the sample size and thus increase the statistical power of these models while also containing observations of all households. As such, the estimates from models using the level dollar values are considered more generalizable with greater statistical power while the natural log values are considered more applicable to those who had a positive change in monthly spending a priori.

Durable goods expenditures are operationalized as expenditures on household furnishings and equipment, televisions and other home electronics, and vehicle purchases; and, nondurable goods expenditures are operationalized as food, clothing, and entertainment. This follows the work of Barrow and McGranahan (2000) and Simpson et al. (2010). Total consumption expenditures are operationalized using the variable from the CES measuring monthly total consumption expenditures less spending on debt repayment per household.

While debt repayment is important for individual financial and economic security, it does not represent new consumption expenditures, per se. When debt is initially incurred, it is then a new expenditure with its benefits typically being received or consumed over time (e.g. owning a house) but with consumers “expending” the entire purchase price at that moment. Carlin and Soskice (2006) note that typical debt-financed purchases, such as purchasing a house, fall under investment rather than consumption expenditures. Thus, debt repayments are excluded from the monthly change in total spending.

Debt repayments are composed of four components: personal credit debt payments, mortgage payments, home equity loan payments, and vehicle loan payments. Personal credit debt payments are composed of payments made to gasoline credit credits, store credit cards, major credit cards (e.g. VISA), store installment credit accounts, personal credit loans from financial institutions (e.g. banks), health care related credit payments, and other credit payments (e.g. school loans). All these payments include any payment on principal, interest, or finance and late fees. The total amount owed to these different sources is only measured at the current month during the second and fifth CES interviews and the current month one year ago from the time of the fifth CES interview. Thus, the

average monthly amount of personal credit debt repayment for months between the second and fifth interviews is calculated from the difference between the second interview amount and fifth interview amount.

The average monthly amount of repayment for months before the second interview is calculated from the difference between the one-year-ago fifth interview amount and the second interview amount. It is possible that the difference could be negative if the person acquired more personal credit debt during these periods. It is also possible that a CU could have missing values for one or two out of the three interview amounts. If a CU has only one missing value out of these variables, the average monthly amount of repayment is calculated from the available values. If two values of these variables are missing, then no change can be calculated and these observations are omitted. Mortgage, home equity loan, and owned vehicle loan payments are the amount of principal and interest paid on these loans during each month. Rented vehicle loan payments are the amount paid for leasing charges each month. These values are measured each month and thus are easily subtracted from monthly changes in expenditures.

d. Measurement of the Liquidity Constraints and Tax Policies

1. Liquidity Constraint Measurement

For liquidity constraints using liquid assets with a threshold level, the variables concerning liquid assets are only asked of households in their fifth and final interview of the CES. These variables ask for the total amount held on the last day of last month and the total amount held on the last day of last month, one year ago. To calculate total liquid assets in a given month, the average monthly rate of change between current and previous liquid assets is calculated and applied appropriately to total liquid assets. For households

which did not report liquid assets, they are assigned values of zero for liquid assets.

Household fixed effects should control for any bias from not reporting liquid assets.

For liquidity constraints based on debt-to-income ratios, the variables concerning total current debt are detailed throughout the CES. Personal credit debt is measured similarly to personal credit debt payments, as discussed above, with the difference being total personal credit debt rather than repayment being calculated. The size of balances of mortgages and home equity loans are asked about at every interview and the amount asked is the principal balance at the beginning of the previous month.⁴¹ Owned vehicle loan balances are asked about at any interview and the amount is the principal balance at the beginning of the first, second, and third months of the reference period. For example, if the reference period is the second quarter of 2009 then the third month of that period is June. These debt variable balances are measured at the ends of months so assigning monthly values is straightforward. Households which did not report any consumer debt are assigned values of zero. Household fixed effects should control for any bias from unreported consumer debt.

2. Tax Policy Measurement

The CES does not ask respondents directly about whether or not they received the MWPTC or EITC, nor about how much was received if they were recipients. Using the properties of eligible recipients, this paper creates binary variables representing receipt of the credits, and continuous variables measuring the amount of the credits received per month. For the MWPTC, individuals received up to \$400 a year and households received

⁴¹ Some CUs which report owning a home with a mortgage do not report monthly mortgage balances. For those CUs which do report monthly balances, their balances are imputed based on the age of the reference person, marital status, race, having a female head of household, education, region, monthly mortgage payment, and current home value. This imputation method is based on Souleles (2004).

up to \$800 a year. To qualify for the maximum amount, individuals must have yearly wages or self-employment income of at least \$6,451 (\$12,903 if married filing jointly). The credit equals 6.2 percent of earned income for individuals and households with earned income below the above amounts otherwise (U.S. Internal Revenue Service, 2015c). The credit began to phase out for individuals at \$75,000 and for joint-filers at \$150,000; and the credit was unable to be claimed by individual taxpayers with income above \$95,000 and by joint-filers with income above \$190,000 (U.S. Internal Revenue Service, 2013).⁴² Based on the IRS' 2010 Schedule M Form, the MWPTC was phased out at two percent per dollar above the lower-threshold critical value (i.e. \$75,000 for individuals and \$150,000 for joint-filers).

The CES contains variables asking respondents how much before-tax income and how much wage or self-employment income was received in the past 12 months. Respondents with non-zero wage or self-employment incomes above the minimum wage and self-employment income thresholds and whose before-tax earned income is within the income range for receipt are flagged as having received the credit and assigned the appropriate credit value. Furthermore, if an individual or household received the RDTR as well as the MWPTC, the amount of the MWPTC would be reduced by the amount of the RDTR. Individuals can receive up \$250 from this rebate and households can receive up \$500 making the maximum credit receivable by dual-receivers to be \$150 for individuals and \$300 for households. The five-quarter panel selected for measurement of the MWPTC is the panel surveyed from the fourth quarter of 2008 to the fourth quarter of 2009. This is useful for two reasons. First, this panel allows for measurement of CU

⁴² These income amounts are measured as modified adjusted gross income.

income (mostly) prior to receipt of MWPTC dollars. This happens because the panel is asked income information in the second (quarter one of 2009) and fifth (quarter four of 2009) interviews. Thus, income data from the second interview captures income from April 2008 to March 2009. The second reason this panel is chosen is that it provides consumption data from October 2008 to December 2009 which allows for pre-receipt comparisons and purchasing data for all months of MWPTC receipt.

The ARRA increased the maximum EITC amount for taxpayers with three or more qualifying children to \$5,657 in tax year 2009 and increased the beginning point of the phase-out range of the credit for all joint return filing married couples regardless of the number of children (U.S. Internal Revenue Service, 2016a). For tax year 2009, the phase-out for the credit begins at \$16,420 for married couples filing a joint return with children and completely phases out at \$40,463 for couples with one child, \$45,295 for couples with two children, and \$48,279 for couples with three or more children. For married couples with no children, the credit begins to phase out at \$13,310 and completely phases out at \$19,680 (U.S. Internal Revenue Service, 2016a).⁴³ This paper's imputation method is based on Barrow and McGranahan's (2000) method to predict the value of EITC payments.⁴⁴ These estimations are based on data regarding number of eligible dependents, earnings, and marital status. EITC earnings are defined as all earned income

⁴³ See U.S. Internal Revenue Service (2010) for a full listing of EITC amounts by income and family structure.

⁴⁴ An area for possible future research includes measuring the difference in the amount received for tax year 2009 versus the amount received had the EITC rules for tax year 2009 remained unchanged. The EITC amounts based on number of children, earnings, and household structure for tax year 2008 would be indexed for inflation to 2009 dollars and subtracted from the imputed amounts received for tax year 2009. Calculating the amount received had the ARRA not expanded the EITC is important for determining how the expansion changes specifically affected MPC. This approach is preferred compared to estimating what families would have received in tax year 2008 and comparing that to ARRA EITC amounts received because data on income, family structure, and number of children is unavailable for the panel receiving the EITC for tax year 2009.

and any investment income below \$3,100. Earned income is defined as all wages, salaries, tips, net earnings from self-employment, and gross income received as a statutory employee (U.S. Internal Revenue Service, 2015a). Using reported earnings from the CES to determine tax-unit earnings will likely overestimate EITC eligibility because of the earnings underreporting common in CES data (Barrow & McGranahan, 2000: 1215). Eligible dependents are those who are under 19 years of age; or are under 24 years of age and a full-time student; or any age but permanently and totally disabled.

To capture the amount received in tax year 2009, the four-quarter panel selected for measurement of the EITC research questions is those surveyed from the fourth quarter of 2009 to the third quarter of 2010.⁴⁵ Using this particular panel allows for measurement of consumption from the fourth quarter of 2009 to the third quarter of 2010 while measuring income and family structure in 2009. As discussed by Barrow and McGranahan (2000) and Gao, Kaushal, and Waldfogel (2009), the modal month of EITC receipt is February with March and April as the other most common months of EITC receipt. The model assumes that all EITC payments are received in these three months exclusively and that each household has its imputed receipt value randomly assigned to one of these three months. Other monthly expenditures besides those in February, March, and April are used as a comparison of consumption prior to and after the receipt of the EITC.

The RDTR was a flat \$250 tax rebate distributed to individuals receiving Supplemental Security Income, Social Security (Regular & Disability) Insurance, Veterans pension, Railroad Retirement, or State government retirement (U.S. Congress,

⁴⁵ A 4-quarter panel is being used instead of a 5-quarter panel, like in the MWPTC model, because more observations are available across four quarters. Since the EITC is less broadly received than the MWPTC, a shorter panel with more observations is more prudent.

2009). Married households could receive up to \$500 from the rebate because each individual could receive \$250 separately.⁴⁶ This rebate was a check mailed directly to these recipients throughout the months of May and June 2009. Operationalizing receipt and the amount received from this tax rebate is simpler than operationalization of the MWPTC and EITC because the CES asks respondents directly if they received the tax rebate and how much was received. However, the CES does not ask in which month it was received. Therefore, each receiving CU is randomly assigned to receiving the rebate in either May or June of 2009.

To correct possible underreporting in both the variable asking about receipt of the tax rebate and the amount received, data regarding retirement and disability earnings from the CES is cross-referenced. For example, if a CU reported not receiving the rebate but received supplemental security income then the value of the if-rebate-received variable is changed to “yes”. For CUs with variable values indicating receipt of the rebate but missing values for the amount received, the marital status of the CU and, if applicable, spousal earnings are cross-referenced and values of the rebate received are changed.

The four-quarter panel selected for measurement of this rebate is the panel surveyed from the fourth quarter of 2008 to the third quarter of 2009.⁴⁷ This provides expenditure data from the fourth quarter of 2008 to the third quarter of 2009 and income data from January 2008 to September 2009. The panel also provides retirement and disability earnings data reported in the second interview for the panel (i.e. the first quarter of 2009),

⁴⁶ It is possible that CUs could have more than two individuals receiving the rebate. In cases where more than two eligible individuals are part of the same CU, the total amount of the rebate received can be greater than \$500.

⁴⁷ A 4-quarter panel is being used instead of a 5-quarter panel, like in the MWPTC model, because more observations are available across four quarters. Since the RDTR is less broadly received than the MWPTC, a shorter panel with more observations is more prudent.

which allows having income data used for the initial determination of rebate eligibility (i.e. income from calendar year 2008).

e. Weaknesses and Limitations

One of the most glaring weaknesses of the models for the MWPTC and the EITC are that the CES does not ask participants directly if and when they received either of these credits and, if so, how much was received of either of these credits. As such, there is some inherent measurement error in the models for the MWPTC and EITC. This paper's rigorous use of the receipt qualifications for each credit and the data collection of the CES that generally captures these qualifications likely minimizes this measurement error. However, without direct measurement of receipt and amount of the credits this measurement error persists. The CES does ask participants if they received the RDTR and if so, how much was received. However, the CES does not ask when it was received. Thus, there is still some measurement error in operationalizing the RDTR.

The receipt qualifications of the MWPTC and EITC related to income-testing also introduces some measurement error. The phase-out and ineligibility thresholds for the MWPTC are based off modified adjusted gross income (MAGI) and the earnings eligibility criteria for the EITC are based off of adjusted gross income (AGI). The CES does not measure MAGI nor AGI and neither can be calculated based on the variables in the CES. Simply using the before-tax income variables available in the CES to determine eligibility and receipt introduces some measurement error. Before-tax income, MAGI, and AGI are all income levels before an individual's total tax bill is paid. However, before-tax income is likely to be higher than MAGI or AGI because MAGI and AGI subtract certain expenses from one's income (Intuit, 2016). Given that before-tax

incomes are larger than MAGI and AGI, the number of people receiving the MWPTC and EITC and the amount of either received may be underestimated. Given the earnings underreporting common in the CES data as documented by Barrow and McGranahan (2000), the biases act in opposite directions and may reduce the overall bias of the measurement error in using before-tax income as compared to MAGI or AGI. Based on the 2009 CES for the first quarter, approximately 25 percent of CUs have before-tax incomes equal to or greater than \$75,000 (the critical value for phase-out of the MWPTC for individuals).⁴⁸ Thus, this error has the potential to be large, assuming the individual biases above are large and have an absolutely large difference between them.

These measurement error potentials make it important to work with as large a sample size as possible and with as much variation as possible in the independent variables. Using data across four-to-five quarters for all tax policies allows for a relatively large sample size with each household having at least 12 months of expenditure data. However, the variation in the policy variables is rather limited in the cases of the MWPTC and RDTR. For the MWPTC, monthly values are clustered at \$40 and \$80, and, for the RDTR, monthly values are clustered at \$250 and \$500. This low level of variation reduces the power and efficiency of the estimators used for these tax policies. Efficiency is also reduced by the use of a distributed lag with an unstructured estimation of the lags in the long-run responses of the tax policies as modeled in equations 2 and 3. Kennedy (2008) states that distributed lags without any structural estimation tend to be highly collinear and cause higher variance and lower efficiency. Although efficiency is lower, equations 2 and 3 still use distributed lags without structural estimation as this

⁴⁸ This summary measure does not account for tax-filing status.

specification is also used by Johnson et al. (2004), which is the research on which equations 2 and 3 are based.

Furthermore, the models are subject to some omitted variable bias and other confounding factors. The amounts received of the tax policies are not random and are likely related to other household characteristics that are difficult to control. For example, the MWPTC requires recipients to have wage and/or self-employment income. The consumption response of the MWPTC may be exaggerated by an increase in labor supply that increases spending in the economy generally. Although a 2SLS technique is employed to control for endogeneity of the policy amounts, it is possible the instrument for the policy amount is a weak instrument. While an indicator variable of receipt of the policy is very likely correlated with the policy amount, it is possible that simply being a recipient changes expectations or confidence that alters consumption. If this scenario is true, then the instrument fails the exclusion restriction.

Given that the timing of the receipt of the tax policies was not random, aggregate and macroeconomic events are likely correlated with the timing of receipt of these policies. For example, the EITC is received when a household files its taxes. However, recipients can file their taxes in January, February, March, or April and the decision to file (and thus when the credit is received) may be influenced by macroeconomic events and other household characteristics. This endogeneity is corrected for to some extent in the EITC and RDTR models by having the receipt month randomly assigned among households. However, this introduces some level of measurement error as receiving households may not have received the policy in the randomly assigned month. The non-randomized receipt of the tax policies may also be correlated with household expectations and other

unobserved heterogeneities.

Furthermore, the effect of the passage of ARRA itself cannot be separated from the other aggregate effects captured by month dummies. It is also possible that given the extensive damage of the 2007 – 2009 recession, the macroeconomic effects of the recession itself may reduce the power of the models to determine any significant effects at all. Finally, conclusions regarding future similar tax policies cannot be considered certain given the lack of a full structural model. Consumption responses likely differ across time and circumstances. The 2007 – 2009 recession was extraordinarily damaging and future recessions likely will warrant different counter-cyclical fiscal policies. Nevertheless, the policies themselves were exogenous positive shocks to household income and their MPCs provide some generalizability to the effect of similar tax policies on households, liquidity constrained or otherwise.

V. Outcomes and Theoretical Implications

This chapter presents the results from the model specifications laid out in the previous chapter and discusses the results and their theoretical implications. The results are generally insignificant across the models. However, some significant results are found across both short- and long-run models and provide minimal support for liquidity constraints and the tax cuts significantly affecting the monthly change in consumption. Tables 1 through 3 below list the number of observations with non-missing values, the mean, the median, and the standard deviation of the model variables (excluding the month indicator variables and age-squared) for all three tax policies. Tables 4 through 6 below provide the short-run response results for each of the tax policies across the different dependent variables and definitions of liquidity constraints. Tables 7 through 9 below provide the long-run response results for each of the tax policies across the different dependent variables and definitions of liquidity constraints. These three tables are used primarily for testing hypothesis 4.

The full results of each table in this section are provided in the Appendix along with the results of the Hausman tests. All specifications passed the Hausman tests for exogeneity of the policy amounts and their variations. The results from the 2SLS models are generally close in magnitude and standard error to the OLS results and, like the Hausman tests, suggest the policy amounts and their variations can be considered exogenous. This chapter begins with a look at the summary statistics from the samples of each tax policy studied here then presents the model results and discusses their implications for the hypotheses of this paper.

Turning now to examining the summary statistics of each tax policy sample, for the

MWPTC, there are 15,867 possible observations across 15 months with 66.8 percent of those observations receiving the MWPTC. The average change in total monthly consumption expenditures is negative \$185.10. This is not surprising given that the model's time frame is in the height of the 2007-2009 recession and that households likely were reducing spending. The average total amount of MWPTC received is \$399.40 with a monthly average of \$40 a month over ten months. Given the size of the monthly amount of the MWPTC relative to monthly total expenditures, the MWPTC may have little influence on consumption expenditures as the average monthly consumption expenditures were approximately \$7,207. Furthermore, average monthly household permanent income is relatively high \$10,306 which suggests that the MWPTC may be too small of an income change on average to be noticeable by households. Finally, the percent of households which are considered liquidity constrained is close to half across definitions, between 47.8 and 51.5 percent.

For the EITC and RDTR models, the number of possible observations is larger because of the shorter time frame (four quarters versus five quarters for the MWPTC).⁴⁹ The EITC models have 29,439 possible observations whereas the RDTR models have 28,975 possible observations. However, the percent of observations receiving the EITC is much lower than the percent receiving the MWPTC at 11.7 percent. The RDTR is modestly better with 34.4 percent of households receiving it. The average amount of the EITC received by EITC recipients is quite large at \$1,768. This represents approximately 27 percent of average total monthly expenditures, \$6,647 per month, and thus has

⁴⁹ The number of observations is larger despite the shorter time periods because households are surveyed for five consecutive quarters and only using four quarters captures two survey frames: one set of households whose fifth survey quarter is after the end of the four quarters used and another set of households whose fifth survey quarter is before the beginning of the four quarters used.

potential to greatly influence the monthly change in consumption. The average EITC received by EITC receivers is also quite large, at about 20 percent of average monthly permanent income, \$8,991. Similarly, the average amount of the RDTR received among recipients is \$328.20. As a one-time rebate, this policy likely has greater short-term influence on consumption than the MWPTC's because of its size relative to the monthly MWPTC. As with the MWPTC, the percent of households considered liquidity constrained is close to half across the sample: 51.7 to 57.7 percent of households in EITC samples and 49.3 to 50.9 percent of households in RDTR samples. The next section begins discussion of the model results and their theoretical implications.

a. Liquidity Constrained Versus Non-Liquidity Constrained Households

This section focuses on discussing the MPCs from the ARRA tax policies on the monthly changes in spending of liquidity constrained households versus non-liquidity constrained households and how they do or do not support hypothesis 1. When looking at tables 4 through 12, the MPCs of interest here are the interaction terms between the policy amount variable and the liquidity constraint variable. The results in the tables, with a few exceptions, do not support hypothesis 1. The results are generally insignificant. When significant though, the MPCs from the ARRA tax policies of liquidity constrained households are generally negative. These negative MPCs are seen across the MWPTC and RDTR, types of consumption, and definitions of liquidity constraints.⁵⁰ The MWPTC

⁵⁰ Although the effects are relatively consistent across definitions of liquidity constraints, it is possible that each definition captures a different population and/or effect. Tables 41 through 43 in the Appendix show summary statistics of certain demographic characteristics by CUs which only are only liquidity constrained by one of the two definitions (e.g. having zero liquid assets but not having a debt-to-income ratio above the threshold level). Across the samples, households which are strictly liquidity constrained by having a debt-to-income ratio above the threshold level consistently have higher permanent income, own a home, have more education, are white, and are married. Table 44 in the Appendix shows the ANOVA tests for significant differences of each variable between these groups and shows the MANOVA test for a significant difference across all demographic characteristics between these groups. The results in Table 44

caused the monthly change in total spending by liquidity constrained households as compared to non-liquidity constrained households to decrease with an MPC of negative 0.641 to negative 0.619; caused the monthly change in nondurable goods spending similarly to decrease with an MPC of negative 0.0605; and, caused the monthly change in durable goods spending to change with an MPC between negative 0.222 and positive 0.269.⁵¹ The RDTR caused a decrease in the monthly change in total spending by liquidity constrained households relative to non-liquidity constrained households with an MPC of negative 0.378 to negative 0.266; and, caused a decrease in the monthly change in nondurable goods spending with an MPC of negative 0.0588 to negative 0.0566.

The only positive MPCs from the policies on liquidity constrained households were from the MWPTC on the monthly change in durable goods purchases when liquidity constraints were modeled as sufficiently high debt-to-income ratios. The MPCs ranged from 0.266 to 0.269. This suggests that the MWPTC increased the budget constraint for durable goods purchases only for liquidity constrained households with high debt-to-income ratios. For example, such an increase in durable goods spending for liquidity constrained households caused the budget constraint to move outward, as in B_2 to B_3 of Figure 2 in Chapter II, and utility increases, from point O' for example. These MPCs are the only ones that support hypothesis 1 by showing that liquidity constrained households have positive MPCs out of increases in current income as outlined in Chapter II.

Turning away from hypothesis 1 and the specific effects of being liquidity

show across samples statistically significant differences of these demographic characteristics between these groups. However, any variation between these groups should be controlled for both by the demographic variables included in the specifications and the household-specific fixed effects.

⁵¹ It should be noted that the R-Squared value of the model that contains the MPCs on liquidity constrained households from the MWPTC on the monthly change in durable goods spending (see table 6, panel B) is very low at 0.003. This indicates that this particular model explains little variability in changes in durable goods consumption.

constrained and receiving the tax cuts, the total effect on the monthly change in consumption spending by liquidity constrained households is the summation of the interaction term and policy amount variable and its statistical significance is tested using an F-test on that summation. When looking at the significant total effects from liquidity constrained households, the MPCs are still generally insignificant, except for the total effect from the MWPTC on the monthly change in total spending for liquidity constrained households. These total effects from the MWPTC were generally significant, positive, and larger than just the MPCs from the interaction terms alone.

The total MPC from the MWPTC on the monthly change in total spending for liquidity constrained households was significant in six out of eight specifications and was positive in five out of eight. The MPCs ranged between negative 0.525 and positive 1.746.⁵² These results provide some support of the theoretical framework of Chapter II by showing generally positive and significant MPCs out of current income increases by liquidity constrained households. Other results from the MWPTC models did not provide support for the theoretical framework of Chapter II because they were generally insignificant (or negative in one case). The total effect from the MWPTC on the monthly change in nondurable goods spending for liquidity constrained households had a few significant MPCs with values between negative 0.226 to positive 0.066. However, the total effects from the MWPTC for liquidity constrained households on the monthly change in nondurable goods spending were generally insignificant. There were no significant total MPCs from the expansion of the EITC or the RDTR for liquidity

⁵² It should be noted that the R-Squared value of the model that contains the relatively large and positive total effects of liquidity constrained households from the MWPTC on the monthly change in total spending (see table 4, panel B) is very low at 0.003. This indicates that this particular model explains little variability in changes in total consumption.

constrained households.

The negative consumption responses on the interactions of being liquidity constrained and receiving the MWPTC and RDTR suggest that the monthly change in consumption decreased more for liquidity constrained households than for non-liquidity constrained households upon receipt of the tax cuts and do not support hypothesis 1. Returning to the assumptions of Figure 2 in Chapter II, negative MPCs out of increases to current income are unexpected based on the theoretical framework. Heim (2007), using a model specification similar to both this paper and Johnson et al. (2004), found negative MPCs from tax rebates distributed between 1996 to 2001 at the state level for durable and nondurable goods purchases. Heim (2007) notes that his coefficients may be biased by measurement error due to the use of imputed values for the rebates. This issue of bias by measurement error is relevant to the tax cuts studied here as the values of all three tax policies were imputed and the timing of the RDTR was imputed by randomization.⁵³ Furthermore, Sahm et al. (2012) found that, using CAB survey data, households that perceived their economic and financial circumstances as worsening reported saving the MWPTC. This is particularly relevant to the results from the interaction of being liquidity constrained and receiving the tax cuts as liquidity constrained households are arguably in perilous economic and financial circumstances given that these households have very high debts and/or zero liquid assets.

Blanchard et al. (2009) similarly notes that tax cuts used to combat the 2007 – 2009 recession may be ineffective if precautionary savings motives are strong and households with high debt levels increase savings in anticipation of worsening economic and

⁵³ See Chapter IV, section e, for a full discussion on the weaknesses and limitations of this paper.

financial circumstances. Duke (2011) says that the decline in household wealth during the recession caused households affected both directly and indirectly to increase savings and become more financially conservative. Shapiro and Slemrod (2003a, 2003b), Chambers and Spencer (2008), and Spencer and Chambers (2012) found households saved anywhere from 75 to 81 percent of lump-sum tax rebates. These findings discussed above suggest that poor household financial conditions combined with anticipation of poor economic conditions and a general tendency to save lump-sum rebates may be the cause of the negative effects. Thus, the unique nature of the recession may have caused liquidity constrained households to behave in unexpected and extraordinary ways contrary to the theoretical framework of Chapter II.⁵⁴

Regardless of the direction and magnitudes of the significant results, their significance demonstrates that predictable and temporary income changes affect consumption in the microeconomic data. As mentioned previously, Carlin and Soskice (2006) note the issue of changes in consumption to predictable changes in income present in the aggregate data. Thus, these findings provide minimal evidence that predictable and temporary changes in income affect consumption, regardless of the data source. However, the results were generally insignificant, thus suggesting that the significant results may have been a product of the specification rather than the true effect. The

⁵⁴ In previous iterations of the models of this paper, variables measuring consumer anticipation of general economic conditions, permanent wealth, current housing wealth, current financial wealth, perception of changes in housing and financial wealth, state economic conditions via state unemployment rates, and a ratio of current wealth to current income were included as additional ways to control for the effects of the recession and household outlooks on important economic variables. However, even with these variables included in the models, the results for the interaction of being liquidity constrained and receiving the tax cuts were largely the same: across the policies, types of consumption, and definitions of liquidity constrained, the interactions were generally negative when significant. In the current models, these variables were discarded in favor of using household-specific fixed effects and month indicator variables which should capture the effects these variables listed here tried to capture.

general insignificance of the results does not support predictable and temporary changes in income affecting consumption.

b. Liquidity Constraints' Effect on Consumption

This section focuses on discussing the monthly changes in consumption from being liquidity constrained generally and whether those changes support hypotheses 2 and 3. When looking at tables 4 through 6, the coefficients of interest here are the liquidity constraint variables. The results of this paper provide almost no support for hypothesis 2 and minimal support for hypothesis 3. When significant, the liquidity constraint coefficients are all negative, suggesting that the monthly change in consumption for liquidity constrained households is lower than that of non-liquidity constrained households. However, the results across models are generally insignificant, suggesting liquidity constraints generally do not alter the monthly change in spending.

When the liquidity constraint is modeled as a household having zero liquid assets, the monthly change in total spending decreases by \$1,288 a month.⁵⁵ However, this result was only seen in the RDTR model. It would be more convincing if it was seen across tax policies. When the liquidity constraint is modeled as a household having a sufficiently high debt-to-income ratio, the liquidity constraint coefficient is negative and significant across tax policy models and the expenditure types, suggesting stronger results. Being liquidity constrained from having a sufficiently high debt-to-income ratio decreased the monthly change in total spending by \$1,468 to \$1,486 a month, and decreased the

⁵⁵ It should be noted that the R-Squared value of the model that contains this effect of being liquidity constrained on the monthly change in total spending (see table 10, panel B) is very low at 0.002. This indicates that this particular model explains little variability in changes in total consumption.

monthly change in nondurable goods spending between \$91.26 and \$188.30 a month.⁵⁶

While the effect of a sufficiently high debt-to-income ratio liquidity constraint on the monthly change in total spending was only significant in two out of twelve specifications, the effect of this liquidity constraint on the monthly change in nondurable goods spending was significant in six out of twelve specifications. Thus, the effects from a sufficiently high debt-to-income ratio liquidity constraint on the monthly change in total spending were generally insignificant and the significant results may have been just a result of the specification.

The effects from a sufficiently high debt-to-income ratio liquidity constraint on the monthly change in nondurable goods spending were significant in half of the specifications. While this does not provide substantial support for hypothesis 3, it does provide some support for sufficiently high debt-to-income ratio liquidity constraints causing negative monthly changes in nondurable goods consumption compared to non-liquidity constrained households. Returning to Chapter II, Figure 2, the budget constraint of these kinds of liquidity constrained households for nondurable goods consumption should look like B_2 , for example, and indicate a consumption bundle below the optimal bundle in the unconstrained optimal consumption choice (e.g. point O' versus point O). While a sufficiently high debt-to-income ratio liquidity constraint did not consistently cause consumption to be below the unconstrained utility maximizing level, its effect on nondurable goods spending provides some support that the sufficiently high debt-to-income ratio liquidity constraint modeled here is consistent with the theoretical

⁵⁶ It should be noted that the R-Squared value of the model that contains the effect of being liquidity constrained on total spending (see table 7, panel B) is very low at 0.003. This indicates that this particular model explains little variability in changes in durable goods consumption.

framework of Chapter II and should be considered a significant determinant of nondurable goods consumption.

c. Consumption Responses of all Households from The ARRA Tax Policies

The theoretical framework of Chapter II demonstrated that consumption should increase in response to an increase in income. Thus, this paper tests the hypothesis that MPCs on the monthly change in expenditures of all households receiving tax cuts under ARRA are positive. One of the tenets of the PIH is that consumption is smooth in response to changes in temporary income in the absence of liquidity constraints. As already discussed in this paper, the MWPTC, expansion of the EITC, and RDTR were all constructed as changes in temporary income. While the results were generally insignificant, across the tax policies and types of expenditures, there are significant (both positive and negative) consumption responses. If these significant effects are the true effects, then consumption does respond to changes in temporary income. However, the significant positive and negative short-run and long-run consumption responses provide mixed support for hypothesis 4 (if they are the true effects). Furthermore, that the results are generally insignificant suggests that there may not have been any consumption response from the ARRA tax cuts by all households. This would suggest support for the PIH as households were unresponsive to changes in temporary income.

Looking at the significant short-run responses in tables 4 through 12, the MWPTC caused a short-run increase in the monthly change in total expenditures with an MPC of 1.585; a short-run increase in the monthly change in nondurable goods expenditures with an MPC between 0.0592 and 0.113; and, a short-run decrease in the monthly change in

durable goods expenditures with an MPC between negative 0.419 and negative 0.312.⁵⁷ The expansion of the EITC caused a short-run increase in the monthly change in durable goods expenditures with an MPC ranging from 0.0112 to 0.0334.⁵⁸ Finally, the RDTR caused a short-run increase in the monthly change in total consumption with an MPC ranging from 0.177 to 0.611.

Looking at the significant long-run responses to the tax policies in tables 13 through 21 suggests more tempered overall effects. The large contemporaneous effects of the MWPTC are generally absorbed by the one-month lag periods. The one-month lag long-run responses of the MWPTC had relatively large and significant positive MPCs on the monthly changes in total and nondurable consumption expenditures. The one-month lag MPC from the MWPTC is 1.135 to 2.487 for the monthly change in total spending and 0.101 to 0.436 for the monthly change in nondurable goods spending. For the monthly change in durable goods spending, the MWPTC had a one-month lag MPC of negative 0.358 to positive 0.525. However, these large increases in the monthly change in spending in the one-month lags were typically followed by declines in the monthly change in spending in the two-month lag. The two-month lag MPC from the MWPTC is negative 0.980 to negative 0.898 for the monthly change in total spending and negative 0.209 to positive 0.0879 for the monthly change in nondurable goods spending. The

⁵⁷ It should be noted that the R-Squared value of the model that contains the relatively large and positive short-run response from the MWPTC on the monthly change in total spending (see table 4, panel B) is very low at 0.003. Furthermore, the R-Squared value of the model that contains the modest and negative short-run response from the MWPTC on the monthly change in durable goods spending (see table 6, panel A) is very low at 0.036. These indicate that these particular models explain little variability in changes in consumption.

⁵⁸ It should be noted that the R-Squared value of the model that contains the short-run response from the expansion of the EITC on the monthly change in durable goods spending (see table 9, panel A) is very low at 0.031. This indicates that this particular model explains little variability in changes in durable goods consumption.

MWPTC had no significant effects on the monthly change in durable goods spending in the two-month lag.

Comparatively, the expansion of the EITC generated a slightly negative consumption response on the monthly change in total spending in the one-month lag. The one-month lag MPC from the expansion of the EITC is negative 0.0259 to negative 0.0238 for the monthly change in total spending. Otherwise, the expansion of the EITC generated no significant spending effects in the two-month lag and the short-run MPC on the monthly change in durable goods spending only slightly decreased to 0.0108 to 0.0118. Similarly, the RDTR generated no significant spending effects in the one- and two-month lags on the monthly change in total spending and the short-run MPC on the monthly change in total spending from the RDTR slightly decreased to 0.151 to 0.310. These long-run model contemporaneous coefficients from the expansion of the EITC on the monthly change in durable goods spending and from the RDTR on the monthly change in total spending shared similar magnitudes and standard errors as the coefficients in the short-run models. If the significant results are the true effects, this ultimately suggests that the contemporaneous effects of these two policies are the actual effects even when modeling for long-run effects.

Unlike in the short-run models, the RDTR generated slightly negative consumption responses on the monthly change in nondurable goods spending in the contemporaneous period and the one- and two-month lags. Short-run monthly changes in nondurable goods spending decreased with an MPC of negative 0.0124, one-month lag monthly changes in nondurable goods spending decreased with an MPC of negative 0.0258 to negative 0.0233, and two-month lag monthly changes in nondurable goods spending decreased

with an MPC of negative 0.0431 to negative 0.0425.

To find the overall long-run effects, the contemporaneous, one-month lag, and two-month lag MPCs are summed and the statistical significance of these summations is tested with an F-test. There were significant long-run MPCs of the MWPTC for the monthly changes in total spending, nondurable goods spending, and durable goods spending. The long-run MPC of the MWPTC for the monthly change in total spending was between 1.614 and 1.947; between 0.082 and 0.155 for the monthly change in nondurable goods spending; and, between negative 0.461 and negative 0.354 for the monthly change in durable goods spending.⁵⁹ The significant long-run effects of the MWPTC are relatively close in magnitude to the short-run effects.

While the expansion of the EITC produced no significant effects on the monthly change in total in the short-run specification, there was a small significant positive long-run effect on the monthly change in total spending from the expansion of the EITC. The long-run MPC from the expansion of the EITC on the monthly change in total spending was 0.065.⁶⁰ Conversely, while the expansion of the EITC produced a small, significant, and positive contemporaneous effect on the monthly change in durable goods spending, there was no significant long-term effect of the expansion of the EITC on the monthly change in durable goods spending. Similarly, while the significant contemporaneous effect of the RDTR on the monthly change in total spending was relatively large and

⁵⁹ It should be noted that the R-Squared value of the model that contains the relatively large and positive long-run response from the MWPTC on the monthly change in total spending (see table 13, panel C) is very low at 0.003. Furthermore, the R-Squared value of the model that contains the modest and negative long-run response from the MWPTC on the monthly change in durable goods spending (see table 15, panel B) is very low at 0.038. These indicate that these particular models explain little variability in changes in consumption.

⁶⁰ It should be noted that the R-Squared value of the model that contains the long-run response from the expansion of the EITC on the monthly change in total spending (see table 16, panel D) is very low at 0.003. This indicates that this particular model explains little variability in changes in total consumption.

positive, there was no significant long-run effect on the monthly change in total spending. There was, however, a significant long-run MPC of the RDTR on the monthly change in nondurable goods spending between negative 0.080 and negative 0.078.

The instances where a short-run effect was positive and significant but a long-run effect was insignificant (i.e. the expansion of the EITC on the monthly change in durable goods spending and the RDTR on the monthly change in total spending) suggest that if these results are the true effects then the policies simply shifted consumption forward while not increasing the monthly change in consumption overall across the long-run. If the significant results from both the short-run and long-run models are the true effects, they suggest at best, similar to the findings from liquidity constrained households, minimal support for predictable and temporary changes in income affecting consumption. The significant results confirm the issue of sensitivity of consumption to predictable changes in income as pointed out by Carlin and Soskice (2006) and show that this issue exists in microeconomic data as well as the aggregate data.

The significant results do provide only mixed support for hypothesis 4. The positive and significant short- and long-run MPCs suggest that consumption does respond and increase from an increase in income as laid out in the theoretical framework of Chapter II. However, the negative consumption responses to the policies do not support the theoretical framework and are difficult to explain. In the case of a positive long-run MPC on the monthly change in nondurable goods spending and a negative long-run MPC on the monthly change in durable goods spending from the MWPTC, it is possible that monthly changes in household spending is zero-sum across these two types of

expenditures and therefore MPCs from both types cannot be strictly positive.⁶¹

The discussion in section 1 of this chapter regarding reasons for negative consumption responses out of increases in current income is likely relevant here too. To summarize that discussion here, it is possible that the effects of the 2007 – 2009 recession caused so poor household financial conditions and anticipation of so poor economic conditions that households decreased consumption despite receipt of the tax cuts. Furthermore, the results across tax policies, expenditures, and time frames (i.e. short- and long-run) were generally insignificant. This indicates that households may have had no consumption responses from the ARRA tax policies and that the significant results discussed above may simply be a product of specification rather than true effects. A lack of consumption responses would suggest support for the PIH as households were unresponsive to changes in temporary income. If the policies had been sufficiently larger, there may have been positive consumption responses across all types of expenditures and time frames.

Overall, the results from the models at best provide minimal support for hypotheses 2, and 3, provide minimal mixed support for hypothesis 4, and do not support hypothesis 1. When significant, the MPCs from the ARRA tax cuts for liquidity constrained households relative to non-liquidity constrained households were generally negative. The MPCs from the tax policies on all households were generally insignificant but demonstrated some positive long-run effects on the economy when significant. When significant, liquidity constraints caused the monthly changes in consumption to

⁶¹ Given that total spending is defined to include types of spending not included in nondurable and durable goods spending, the monthly change in total spending can have a positive (or negative) MPC even if the monthly change in household spending is zero-sum between the monthly changes in nondurable and durable goods spending as defined here.

consistently be negative across types of liquidity constraints and types of expenditures.

The next and final chapter discusses the policy implications of the model results here and provides some concluding remarks. The long-run MPCs on all households and the total MPCs of liquidity constrained households derived from the models are used to generate output multipliers which provide a gauge of the effectiveness of these policies as expansionary fiscal policies for combating recessions.

Table 1: Summary Statistics of MWPTC Model Variables For CUs

VARIABLES	(1) N	(2) mean	(3) median	(4) sd
Total Consumption Expenditures	15,355	7,207	3,438	36,009
Total Consumption Expenditures Month-to-Month Change	14,842	-185.1	0	49,950
Non-Durable Goods Expenditures	15,355	1,850	1,396	1,722
Non-Durable Goods Expenditures Month-to-Month Change	14,842	-46.25	0	1,625
Durable Goods Expenditures	15,355	750.4	0	5,418
Durable Goods Expenditures Month-to-Month Change	14,842	-48.36	0	7,045
Total Amount of MWPTC Received	15,867	399.4	400	339.1
Total Amount of MWPTC Received Among Receivers	10,607	599.0	800	231.7
% Receiving the MWPTC	15,867	0.668	1	0.471
% Liquidity Constrained - Zero Liquid Assets	15,867	0.478	0	0.500
% Liquidity Constrained - 30% DSR Level	15,867	0.515	1	0.500
Permanent Monthly After-Tax Income	15,792	10,036	9,118	4,688
Age of CU reference person	15,867	51.93	51	16.53
Change in # of Adults in CU Lagged One Month	15,865	0	0	0.360
Change in # of Children Under 18 in CU Lagged One Month	15,865	0	0	0.454

Table 2: Summary Statistics of EITC Model Variables For CUs

VARIABLES	(1) N	(2) mean	(3) median	(4) sd
Total Consumption Expenditures	28,916	6,647	3,396	30,283
Total Consumption Expenditures Month-to-Month Change	28,390	4.797	0	41,567
Non-Durable Goods Expenditures	28,916	1,837	1,365	2,182
Non-Durable Goods Expenditures Month-to-Month Change	28,390	-1.939	0	2,497
Durable Goods Expenditures	28,916	651.0	0	4,703
Durable Goods Expenditures Month-to-Month Change	28,390	-0.171	0	6,525
Total Amount of EITC Received	29,441	205.9	0	809.0
Total Amount of EITC Received Among Receivers	3,430	1,768	1,163	1,691
% Receiving the EITC	29,441	0.117	0	0.321
% Liquidity Constrained - Zero Liquid Assets	29,441	0.517	1	0.500
% Liquidity Constrained - 30% DSR Level	29,441	0.577	1	0.494
Permanent Monthly After-Tax Income	28,079	8,991	8,326	4,267
Age of CU reference person	28,134	52.04	52	16.72
Change in # of Adults in CU Lagged One Month	29,439	0	0	0.509
Change in # of Children Under 18 in CU Lagged One Month	29,439	0	0	0.479

Table 3: Summary Statistics of RDTR Model Variables For CUs

VARIABLES	(1) N	(2) mean	(3) median	(4) sd
Total Consumption Expenditures	28,412	7,212	3,495	36,646
Total Consumption Expenditures Month-to-Month Change	27,852	-123.4	0	49,046
Non-Durable Goods Expenditures	28,412	1,882	1,408	1,738
Non-Durable Goods Expenditures Month-to-Month Change	27,852	-5.920	0	1,661
Durable Goods Expenditures	28,412	745.9	0	5,764
Durable Goods Expenditures Month-to-Month Change	27,852	-1.328	0	7,525
Total Amount of RDTR Received	28,975	113.0	0	172.1
Total Amount of RDTR Received Among Receivers	9,976	328.2	250	124.1
% Receiving the RDTR	28,975	0.344	0	0.475
% Liquidity Constrained - Zero Liquid Assets	28,975	0.493	0	0.500
% Liquidity Constrained - 30% DSR Level	28,975	0.509	1	0.500
Permanent Monthly After-Tax Income	27,625	9,085	8,575	4,084
Age of CU reference person	27,712	51.97	51	16.67
Change in # of Adults in CU Lagged One Month	27,480	0.00131	0	0.493
Change in # of Children Under 18 in CU Lagged One Month	28,973	3.45e-05	0	0.502

Table 4: Short-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.726 (1.428)	-0.230 (0.323)	0.0945 (0.332)	-0.271 (0.424)
Interaction of Policy & Liquidity Constraint	-0.640** (0.296)	0.0743 (0.257)	-0.619* (0.322)	0.0982 (0.303)
Liquidity Constraint - Zero Liquid Assets	-38.78 (1,097)		-67.17 (1,116)	
Liquidity Constraint - 30% DSR Level		-563.4 (523.6)		-581.2 (536.9)
Total Effect From Liquidity Constrained Households	0.086* ----	-0.156 ----	-0.525* ----	-0.173 ----
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.124	0.123	0.124	0.123

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Panel B. The Level Amount of Total Consumption Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	1.585* (0.845)	1.175 (0.987)	1.780 (1.135)	1.508 (1.286)
Interaction of Policy & Liquidity Constraint	-0.150 (0.699)	0.462 (0.916)	-0.260 (0.753)	0.238 (0.941)
Liquidity Constraint - Zero Liquid Assets	856.4 (1,908)		995.9 (1,938)	
Liquidity Constraint - 30% DSR Level		-3,920 (3,672)		-3,779 (3,644)
Total Effect From Liquidity Constrained Households	1.435* ----	1.637** ----	1.520* ----	1.746** ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 5: Short-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.163 (0.444)	-0.0569 (0.0549)	-0.000542 (0.0590)	-0.00801 (0.0741)
Interaction of Policy & Liquidity Constraint	-0.0627 (0.0467)	0.0141 (0.0447)	-0.0712 (0.0513)	-0.0134 (0.0537)
Liquidity Constraint - Zero Liquid Assets	-164.0 (171.3)		-150.4 (174.0)	
Liquidity Constraint - 30% DSR Level		-188.3* (105.2)		-164.3 (103.4)
Total Effect From Liquidity Constrained Households	-0.226* ----	-0.043 ----	-0.072 ----	-0.031 ----
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.217	0.217	0.217	0.217

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Panel B. The Level Amount of Nondurable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0592** (0.0281)	0.0472 (0.0311)	0.110*** (0.0370)	0.113*** (0.0418)
Interaction of Policy & Liquidity Constraint	-0.0320 (0.0289)	-0.00272 (0.0279)	-0.0605* (0.0317)	-0.0467 (0.0318)
Liquidity Constraint - Zero Liquid Assets	-55.81 (120.5)		-19.77 (122.6)	
Liquidity Constraint - 30% DSR Level		-105.5* (59.76)		-77.70 (59.55)
Total Effect From Liquidity Constrained Households	0.027 ----	0.044* ----	0.049 ----	0.066** ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.089	0.089	0.089	0.089

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 6: Short-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.299 (0.480)	-0.312* (0.188)	-0.164 (0.164)	-0.419* (0.244)
Interaction of Policy & Liquidity Constraint	-0.151 (0.182)	0.191 (0.150)	-0.102 (0.189)	0.254 (0.174)
Liquidity Constraint - Zero Liquid Assets	382.6 (554.4)		324.9 (564.0)	
Liquidity Constraint - 30% DSR Level		-434.1 (324.2)		-488.6 (336.2)
Total Effect From Liquidity Constrained Households	-0.45 ----	-0.121 ----	-0.266 ----	-0.165 ----
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.036	0.036	0.036	0.036

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Panel B. The Level Amount of Durable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.241 (0.154)	-0.0557 (0.158)	0.215 (0.222)	-0.0518 (0.252)
Interaction of Policy & Liquidity Constraint	-0.222** (0.109)	0.269*** (0.0968)	-0.208* (0.116)	0.266** (0.132)
Liquidity Constraint - Zero Liquid Assets	-295.5 (596.1)		-313.9 (603.8)	
Liquidity Constraint - 30% DSR Level		-197.2 (246.3)		-195.6 (255.5)
Total Effect From Liquidity Constrained Households	0.019 ----	0.213 ----	0.007 ----	0.214 ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 7: Short-Run Effect of the EITC

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.134 (0.108)	-0.00521 (0.0165)	0.0196 (0.0416)	-0.0118 (0.0256)
Interaction of Policy & Liquidity Constraint	-0.0352 (0.0282)	0.0264 (0.0248)	-0.0238 (0.0421)	0.0324 (0.0298)
Liquidity Constraint - Zero Liquid Assets	-504.1 (460.4)		-504.8 (460.2)	
Liquidity Constraint - 30% DSR Level		-273.8 (381.8)		-276.9 (382.3)
Total Effect From Liquidity Constrained Households	0.099 ----	0.021 ----	-0.004 ----	0.02 ----
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.114	0.114	0.114	0.114

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Panel B. The Level Amount of Total Consumption Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0568 (0.0621)	-0.00279 (0.0164)	0.00451 (0.0544)	0.0346 (0.0230)
Interaction of Policy & Liquidity Constraint	0.0577 (0.0633)	-0.0366 (0.0513)	-0.00328 (0.0563)	-0.0736 (0.0611)
Liquidity Constraint - Zero Liquid Assets	-400.3 (584.4)		-393.6 (584.5)	
Liquidity Constraint - 30% DSR Level		-1,486* (884.3)		-1,468* (884.6)
Total Effect From Liquidity Constrained Households	0.001 ----	0.004 ----	0.002 ----	-0.039 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 8: Short-Run Effect of the EITC

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00738 (0.0365)	-0.000506 (0.00463)	0.00987 (0.00754)	0.00937 (0.00687)
Interaction of Policy & Liquidity Constraint	0.00682 (0.00621)	0.00637 (0.00605)	-0.00363 (0.00793)	-0.00266 (0.00753)
Liquidity Constraint - Zero Liquid Assets	-136.4 (97.75)		-135.5 (97.91)	
Liquidity Constraint - 30% DSR Level		-62.26 (77.51)		-58.05 (77.55)
Total Effect From Liquidity Constrained Households	0.000 ----	0.005 ----	0.006 ----	0.006 ----
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Panel B. The Level Amount of Nondurable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00168 (0.00191)	0.000934 (0.00110)	0.00900 (0.00783)	0.00542 (0.00472)
Interaction of Policy & Liquidity Constraint	-0.000802 (0.00220)	0.000474 (0.00211)	-0.00808 (0.00790)	-0.00396 (0.00503)
Liquidity Constraint - Zero Liquid Assets	6.107 (48.06)		6.903 (48.05)	
Liquidity Constraint - 30% DSR Level		-93.45* (54.36)		-91.26* (54.42)
Total Effect From Liquidity Constrained Households	0.001 ----	0.001 ----	0.001 ----	0.001 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 9: Short-Run Effect of the EITC

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0334* (0.0202)	0.0112* (0.00619)	0.0113 (0.0122)	0.0121 (0.0120)
Interaction of Policy & Liquidity Constraint	-0.00110 (0.0101)	-0.00212 (0.00805)	-0.00210 (0.0151)	-0.00291 (0.0122)
Liquidity Constraint - Zero Liquid Assets	326.4 (283.4)		326.4 (283.4)	
Liquidity Constraint - 30% DSR Level		-320.0 (236.0)		-319.5 (236.1)
Total Effect From Liquidity Constrained Households	0.032 ----	0.009 ----	0.009 ----	0.009 ----
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.030	0.030	0.030

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Panel B. The Level Amount of Durable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00834 (0.0107)	-0.0156 (0.0146)	0.0156 (0.0163)	-0.0117 (0.0134)
Interaction of Policy & Liquidity Constraint	-0.0214 (0.0164)	0.0231 (0.0165)	-0.0286 (0.0237)	0.0193 (0.0154)
Liquidity Constraint - Zero Liquid Assets	-29.37 (120.5)		-28.58 (120.5)	
Liquidity Constraint - 30% DSR Level		247.7 (171.0)		249.6 (170.9)
Total Effect From Liquidity Constrained Households	-0.013 ----	0.007 ----	-0.013 ----	0.007 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 10: Short-Run Effect of the RDTR

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.611** (0.298)	0.177** (0.0858)	0.333*** (0.125)	0.283*** (0.104)
Interaction of Policy & Liquidity Constraint	-0.266* (0.151)	-0.215 (0.159)	-0.378** (0.164)	-0.305* (0.166)
Liquidity Constraint - Zero Liquid Assets	40.80 (601.5)		49.85 (601.2)	
Liquidity Constraint - 30% DSR Level		-179.7 (359.8)		-163.8 (360.0)
Total Effect From Liquidity Constrained Households	0.345 ----	-0.038 ----	-0.045 ----	-0.022 ----
Observations	12,034	12,034	11,554	12,034
Number of CUs	2,729	2,729	2,718	2,729
R-Squared	0.109	0.109	0.112	0.109

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Panel B. The Level Amount of Total Consumption Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0302 (0.160)	-0.108 (0.136)	-0.0390 (0.227)	-0.116 (0.178)
Interaction of Policy & Liquidity Constraint	-0.128 (0.178)	0.0543 (0.232)	-0.120 (0.208)	0.0616 (0.205)
Liquidity Constraint - Zero Liquid Assets	-1,288** (610.0)		-1,288** (610.3)	
Liquidity Constraint - 30% DSR Level		-2,149 (2,014)		-2,150 (2,016)
Total Effect From Liquidity Constrained Households	-0.158 ----	-0.054 ----	-0.159 ----	-0.054 ----
Observations	25,536	25,536	24,495	25,536
Number of CUs	2,733	2,733	2,724	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 11: Short-Run Effect of the RDTR

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0470 (0.116)	0.0176 (0.0220)	-0.00930 (0.0271)	0.0204 (0.0251)
Interaction of Policy & Liquidity Constraint	0.0109 (0.0372)	-0.0566* (0.0340)	0.0102 (0.0380)	-0.0588* (0.0355)
Liquidity Constraint - Zero Liquid Assets	28.63 (111.7)		28.67 (111.7)	
Liquidity Constraint - 30% DSR Level		-96.02 (75.55)		-95.64 (75.58)
Total Effect From Liquidity Constrained Households	-0.036 ----	-0.039 ----	0.001 ----	-0.039 ----
Observations	10,023	10,023	10,023	10,023
Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.191	0.192	0.191	0.192

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Panel B. The Level Amount of Nondurable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00558 (0.00908)	-0.00496 (0.00667)	-0.00291 (0.0108)	-0.00286 (0.00817)
Interaction of Policy & Liquidity Constraint	-0.00518 (0.0139)	-0.00814 (0.0173)	-0.00765 (0.0125)	-0.0101 (0.0153)
Liquidity Constraint - Zero Liquid Assets	-43.43 (35.80)		-43.24 (35.80)	
Liquidity Constraint - 30% DSR Level		-114.0** (50.52)		-113.8** (50.51)
Total Effect From Liquidity Constrained Households	-0.011 ----	-0.013 ----	-0.011 ----	-0.013 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.087	0.087	0.087

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 12: Short-Run Effect of the RDTR

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0400 (0.109)	-0.00536 (0.0637)	0.0356 (0.0733)	0.00596 (0.0755)
Interaction of Policy & Liquidity Constraint	0.0615 (0.116)	0.113 (0.0928)	0.0476 (0.126)	0.103 (0.0991)
Liquidity Constraint - Zero Liquid Assets	322.5 (393.9)		322.3 (393.9)	
Liquidity Constraint - 30% DSR Level		-194.3 (209.8)		-193.0 (210.0)
Total Effect From Liquidity Constrained Households	0.102 ----	0.108 ----	0.084 ----	0.109 ----
Observations	7,393	7,393	7,393	7,129
Number of CUs	2,364	2,364	2,364	2,364
R-Squared	0.036	0.037	0.036	0.037

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Panel B. The Level Amount of Durable Goods Expenditures

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0184 (0.0468)	-0.00811 (0.0521)	0.0568 (0.0699)	0.0250 (0.0610)
Interaction of Policy & Liquidity Constraint	-0.00941 (0.0735)	0.0619 (0.0718)	-0.0449 (0.0919)	0.0316 (0.0722)
Liquidity Constraint - Zero Liquid Assets	-129.0 (171.2)		-126.2 (171.3)	
Liquidity Constraint - 30% DSR Level		-507.5 (419.9)		-503.6 (419.9)
Total Effect From Liquidity Constrained Households	0.009 ----	0.054 ----	0.012 ----	0.057 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 13: Long-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.865*** (0.314)	-0.754** (0.315)	-1.503*** (0.391)	-1.301*** (0.391)
Interaction of Policy & Liquidity Constraint	-0.638** (0.300)	-0.646** (0.298)	-0.600* (0.332)	-0.623* (0.329)
Liquidity Constraint - Zero Liquid Assets	-12.19 (1,112)	-56.32 (1,100)	-58.23 (1,156)	-84.40 (1,139)
Policy Amount Lagged One Month	1.135*** (0.219)	1.774*** (0.263)	1.773*** (0.270)	2.394*** (0.306)
Policy Amount Lagged Two Months		-0.898*** (0.219)		-0.960*** (0.254)
Total Long-Term Policy Effect		0.122 ----		0.133 ----
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.127	0.130	0.127	0.130

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-1.297*** (0.379)	-1.163*** (0.378)	-2.000*** (0.482)	-1.761*** (0.479)
Interaction of Policy & Liquidity Constraint	0.107 (0.259)	0.0813 (0.260)	0.179 (0.307)	0.130 (0.307)
Liquidity Constraint - 30% DSR Level	-584.9 (531.5)	-534.5 (527.8)	-643.9 (556.5)	-572.2 (551.1)
Policy Amount Lagged One Month	1.184*** (0.227)	1.832*** (0.271)	1.859*** (0.280)	2.487*** (0.317)
Policy Amount Lagged Two Months		-0.914*** (0.225)		-0.980*** (0.263)
Total Long-Term Policy Effect		-0.246 ----		-0.254 ----
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.127	0.129	0.127	0.129

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	2.609 (2.040)	2.519 (2.015)	1.659 (2.499)	1.522 (2.441)
Interaction of Policy & Liquidity Constraint	-0.179 (0.720)	-0.161 (0.720)	-0.255 (0.784)	-0.226 (0.784)
Liquidity Constraint - Zero Liquid Assets	819.0 (1,888)	849.2 (1,883)	998.9 (1,925)	1,010 (1,921)
Policy Amount Lagged One Month	-1.189 (1.512)	-2.001 (1.904)	0.139 (1.823)	-0.517 (2.351)
Policy Amount Lagged Two Months		1.096 (1.000)		0.942 (1.273)
Total Long-Term Policy Effect		1.614** ----		1.947* ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	2.204 (1.836)	2.114 (1.804)	1.389 (2.414)	1.248 (2.349)
Interaction of Policy & Liquidity Constraint	0.441 (0.908)	0.453 (0.907)	0.242 (0.937)	0.272 (0.935)
Liquidity Constraint - 30% DSR Level	-3,920 (3,674)	-3,906 (3,673)	-3,780 (3,644)	-3,780 (3,642)
Policy Amount Lagged One Month	-1.191 (1.500)	-1.996 (1.899)	0.135 (1.814)	-0.513 (2.347)
Policy Amount Lagged Two Months		1.087 (1.000)		0.932 (1.273)
Total Long-Term Policy Effect		1.205 ----		1.667 ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 14: Long-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.182*** (0.0566)	-0.173*** (0.0567)	-0.262*** (0.0721)	-0.229*** (0.0719)
Interaction of Policy & Liquidity Constraint	-0.0562 (0.0463)	-0.0546 (0.0460)	-0.0580 (0.0509)	-0.0611 (0.0508)
Liquidity Constraint - Zero Liquid Assets	-173.2 (171.4)	-181.9 (171.1)	-171.7 (175.8)	-176.1 (175.5)
Policy Amount Lagged One Month	0.184*** (0.0412)	0.281*** (0.0516)	0.284*** (0.0499)	0.419*** (0.0616)
Policy Amount Lagged Two Months		-0.135*** (0.0411)		-0.202*** (0.0495)
Total Long-Term Policy Effect		-0.026 ----		-0.012 ----
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.219	0.221	0.219	0.221

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.229*** (0.0653)	-0.216*** (0.0653)	-0.304*** (0.0879)	-0.261*** (0.0876)
Interaction of Policy & Liquidity Constraint	0.0168 (0.0445)	0.0139 (0.0444)	0.00791 (0.0546)	-0.00427 (0.0548)
Liquidity Constraint - 30% DSR Level	-191.5* (105.8)	-191.3* (105.7)	-186.3* (109.5)	-180.1* (109.2)
Policy Amount Lagged One Month	0.193*** (0.0426)	0.293*** (0.0535)	0.296*** (0.0520)	0.436*** (0.0640)
Policy Amount Lagged Two Months		-0.139*** (0.0425)		-0.209*** (0.0511)
Total Long-Term Policy Effect		-0.062 ----		-0.034 ----
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.219	0.221	0.219	0.221

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0759 (0.0521)	-0.0821 (0.0519)	-0.101 (0.0628)	-0.114* (0.0625)
Interaction of Policy & Liquidity Constraint	-0.0282 (0.0285)	-0.0270 (0.0284)	-0.0527* (0.0312)	-0.0500 (0.0311)
Liquidity Constraint - Zero Liquid Assets	-50.87 (120.0)	-48.80 (119.5)	-14.56 (122.0)	-13.55 (121.5)
Policy Amount Lagged One Month	0.157*** (0.0425)	0.101** (0.0511)	0.241*** (0.0496)	0.180*** (0.0596)
Policy Amount Lagged Two Months		0.0752** (0.0327)		0.0878** (0.0405)
Total Long-Term Policy Effect		0.094*** ----		0.154*** ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.090	0.090	0.090	0.090

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0888* (0.0521)	-0.0951* (0.0518)	-0.0999 (0.0649)	-0.113* (0.0644)
Interaction of Policy & Liquidity Constraint	8.97e-05 (0.0274)	0.000932 (0.0272)	-0.0399 (0.0310)	-0.0371 (0.0308)
Liquidity Constraint - 30% DSR Level	-105.6* (59.44)	-104.6* (59.35)	-79.42 (59.12)	-79.41 (59.00)
Policy Amount Lagged One Month	0.157*** (0.0424)	0.102** (0.0511)	0.242*** (0.0495)	0.181*** (0.0596)
Policy Amount Lagged Two Months		0.0753** (0.0327)		0.0879** (0.0405)
Total Long-Term Policy Effect		0.082*** ----		0.155*** ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.090	0.090	0.090	0.090

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 15: Long-Run Effect of the MWPTC

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.200 (0.180)	0.202 (0.181)	0.142 (0.216)	0.146 (0.218)
Interaction of Policy & Liquidity Constraint	-0.156 (0.180)	-0.156 (0.180)	-0.110 (0.187)	-0.110 (0.187)
Liquidity Constraint - Zero Liquid Assets	349.4 (550.2)	349.0 (550.2)	291.2 (560.3)	290.8 (560.5)
Policy Amount Lagged One Month	-0.321** (0.147)	-0.308* (0.176)	-0.347** (0.167)	-0.330* (0.192)
Policy Amount Lagged Two Months		-0.0169 (0.127)		-0.0243 (0.140)
Total Long-Term Policy Effect		-0.123 ----		-0.208 ----
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.038	0.038	0.038	0.038

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0216 (0.228)	-0.0202 (0.229)	-0.100 (0.284)	-0.0967 (0.285)
Interaction of Policy & Liquidity Constraint	0.188 (0.150)	0.188 (0.150)	0.248 (0.174)	0.247 (0.174)
Liquidity Constraint - 30% DSR Level	-454.4 (323.4)	-454.2 (323.4)	-508.6 (335.6)	-508.0 (335.5)
Policy Amount Lagged One Month	-0.330** (0.150)	-0.321* (0.180)	-0.358** (0.172)	-0.344* (0.198)
Policy Amount Lagged Two Months		-0.0129 (0.129)		-0.0199 (0.144)
Total Long-Term Policy Effect		-0.354* ----		-0.461* ----
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.038	0.038	0.038	0.038

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0246 (0.227)	-0.0108 (0.223)	-0.126 (0.347)	-0.0994 (0.342)
Interaction of Policy & Liquidity Constraint	-0.215** (0.109)	-0.218** (0.109)	-0.195* (0.117)	-0.201* (0.117)
Liquidity Constraint - Zero Liquid Assets	-285.8 (594.1)	-290.4 (594.4)	-305.4 (601.1)	-307.6 (601.9)
Policy Amount Lagged One Month	0.308** (0.156)	0.432* (0.243)	0.390* (0.217)	0.519* (0.297)
Policy Amount Lagged Two Months		-0.167 (0.189)		-0.186 (0.205)
Total Long-Term Policy Effect		0.254 ----		0.234 ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.331 (0.240)	-0.317 (0.236)	-0.404 (0.381)	-0.377 (0.376)
Interaction of Policy & Liquidity Constraint	0.274*** (0.0972)	0.273*** (0.0971)	0.277** (0.134)	0.272** (0.133)
Liquidity Constraint - 30% DSR Level	-197.4 (245.8)	-199.5 (246.7)	-198.4 (255.1)	-198.4 (255.7)
Policy Amount Lagged One Month	0.319** (0.157)	0.439* (0.244)	0.401* (0.218)	0.525* (0.297)
Policy Amount Lagged Two Months		-0.162 (0.189)		-0.179 (0.205)
Total Long-Term Policy Effect		-0.041 ----		-0.031 ----
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 16: Long-Run Effect of the EITC

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0284 (0.0254)	0.0283 (0.0257)	0.0150 (0.0420)	0.0164 (0.0421)
Interaction of Policy & Liquidity Constraint	-0.0340 (0.0285)	-0.0339 (0.0285)	-0.0216 (0.0426)	-0.0221 (0.0426)
Liquidity Constraint - Zero Liquid Assets	-494.9 (459.5)	-494.6 (459.6)	-493.1 (459.1)	-496.5 (459.9)
Policy Amount Lagged One Month	-0.0238* (0.0142)	-0.0239* (0.0142)	-0.0307 (0.0207)	-0.0293 (0.0208)
Policy Amount Lagged Two Months		-0.000880 (0.0121)		0.00897 (0.0158)
Total Long-Term Policy Effect		0.003 ----		-0.004 ----
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.115	0.115	0.115	0.115

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00808 (0.0166)	-0.00824 (0.0167)	-0.0160 (0.0259)	-0.0149 (0.0259)
Interaction of Policy & Liquidity Constraint	0.0276 (0.0251)	0.0276 (0.0251)	0.0344 (0.0301)	0.0346 (0.0301)
Liquidity Constraint - 30% DSR Level	-286.2 (381.7)	-286.4 (381.7)	-292.8 (382.3)	-291.4 (382.5)
Policy Amount Lagged One Month	-0.0257* (0.0145)	-0.0259* (0.0146)	-0.0325 (0.0212)	-0.0311 (0.0214)
Policy Amount Lagged Two Months		-0.00140 (0.0125)		0.00876 (0.0162)
Total Long-Term Policy Effect		-0.036 ----		-0.037 ----
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.114	0.114	0.114	0.114

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0567 (0.0623)	-0.0548 (0.0627)	0.00576 (0.0545)	0.00852 (0.0550)
Interaction of Policy & Liquidity Constraint	0.0577 (0.0633)	0.0577 (0.0633)	-0.00353 (0.0563)	-0.00377 (0.0564)
Liquidity Constraint - Zero Liquid Assets	-400.7 (584.5)	-409.6 (584.7)	-397.0 (584.5)	-408.5 (584.7)
Policy Amount Lagged One Month	0.000935 (0.00681)	0.00296 (0.00755)	0.00790 (0.0105)	0.0107 (0.0111)
Policy Amount Lagged Two Months		0.0140 (0.0157)		0.0179 (0.0135)
Total Long-Term Policy Effect		-0.038 ----		0.037 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00274 (0.0167)	-0.000879 (0.0171)	0.0356 (0.0229)	0.0382* (0.0232)
Interaction of Policy & Liquidity Constraint	-0.0366 (0.0513)	-0.0367 (0.0513)	-0.0738 (0.0610)	-0.0740 (0.0610)
Liquidity Constraint - 30% DSR Level	-1,486* (884.5)	-1,481* (884.4)	-1,465* (885.0)	-1,458* (885.0)
Policy Amount Lagged One Month	0.000377 (0.00682)	0.00231 (0.00757)	0.00710 (0.0105)	0.00979 (0.0111)
Policy Amount Lagged Two Months		0.0134 (0.0158)		0.0170 (0.0135)
Total Long-Term Policy Effect		0.015 ----		0.065** ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 17: Long-Run Effect of the EITC

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00135 (0.00528)	-0.00114 (0.00533)	0.0100 (0.00756)	0.00998 (0.00758)
Interaction of Policy & Liquidity Constraint	0.00689 (0.00624)	0.00694 (0.00627)	-0.00368 (0.00792)	-0.00368 (0.00792)
Liquidity Constraint - Zero Liquid Assets	-135.4 (97.71)	-135.9 (97.76)	-135.9 (97.98)	-135.8 (98.01)
Policy Amount Lagged One Month	-0.00258 (0.00308)	-0.00237 (0.00306)	0.00114 (0.00447)	0.00110 (0.00450)
Policy Amount Lagged Two Months		0.00157 (0.00233)		-0.000284 (0.00323)
Total Long-Term Policy Effect		-0.002 ----		0.011 ----
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.000853 (0.00469)	-0.000644 (0.00472)	0.00952 (0.00691)	0.00947 (0.00693)
Interaction of Policy & Liquidity Constraint	0.00651 (0.00608)	0.00657 (0.00612)	-0.00273 (0.00754)	-0.00274 (0.00754)
Liquidity Constraint - 30% DSR Level	-64.59 (77.68)	-64.25 (77.64)	-57.17 (77.75)	-57.26 (77.75)
Policy Amount Lagged One Month	-0.00278 (0.00313)	-0.00257 (0.00311)	0.00105 (0.00450)	0.000995 (0.00454)
Policy Amount Lagged Two Months		0.00155 (0.00236)		-0.000362 (0.00326)
Total Long-Term Policy Effect		-0.002 ----		0.01 ----
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00178 (0.00192)	0.00183 (0.00193)	0.00916 (0.00752)	0.00925 (0.00753)
Interaction of Policy & Liquidity Constraint	-0.000802 (0.00220)	-0.000801 (0.00220)	-0.00811 (0.00784)	-0.00812 (0.00784)
Liquidity Constraint - Zero Liquid Assets	5.751 (48.06)	5.547 (48.06)	6.477 (48.06)	6.082 (48.05)
Policy Amount Lagged One Month	0.000821 (0.000721)	0.000867 (0.000737)	0.000992 (0.00236)	0.00109 (0.00238)
Policy Amount Lagged Two Months		0.000321 (0.000588)		0.000618 (0.000927)
Total Long-Term Policy Effect		0.003 ----		0.011* ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00103 (0.00110)	0.00108 (0.00112)	0.00556 (0.00444)	0.00564 (0.00444)
Interaction of Policy & Liquidity Constraint	0.000473 (0.00211)	0.000472 (0.00211)	-0.00398 (0.00500)	-0.00399 (0.00500)
Liquidity Constraint - 30% DSR Level	-93.16* (54.38)	-93.05* (54.39)	-90.90* (54.43)	-90.66* (54.46)
Policy Amount Lagged One Month	0.000793 (0.000719)	0.000835 (0.000736)	0.000951 (0.00236)	0.00104 (0.00238)
Policy Amount Lagged Two Months		0.000290 (0.000591)		0.000578 (0.000930)
Total Long-Term Policy Effect		0.002 ----		0.007** ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 18: Long-Run Effect of the EITC

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0108* (0.00632)	0.00908 (0.00632)	0.0122 (0.0122)	0.0103 (0.0124)
Interaction of Policy & Liquidity Constraint	-0.000803 (0.00997)	-6.42e-05 (0.0101)	-0.00216 (0.0149)	-0.00123 (0.0151)
Liquidity Constraint - Zero Liquid Assets	316.7 (283.4)	316.3 (283.1)	313.4 (283.5)	312.9 (283.2)
Policy Amount Lagged One Month	0.00912 (0.00769)	0.00830 (0.00795)	0.0125 (0.0110)	0.0116 (0.0111)
Policy Amount Lagged Two Months		-0.00920 (0.00715)		-0.00930 (0.00946)
Total Long-Term Policy Effect		0.008 ----		0.013 ----
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.030	0.030	0.030

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0118* (0.00615)	0.0108* (0.00636)	0.0133 (0.0121)	0.0122 (0.0122)
Interaction of Policy & Liquidity Constraint	-0.00226 (0.00801)	-0.00311 (0.00816)	-0.00349 (0.0122)	-0.00430 (0.0123)
Liquidity Constraint - 30% DSR Level	-315.7 (236.2)	-323.8 (236.6)	-313.5 (236.5)	-322.1 (236.8)
Policy Amount Lagged One Month	0.00930 (0.00774)	0.00844 (0.00801)	0.0128 (0.0111)	0.0118 (0.0112)
Policy Amount Lagged Two Months		-0.00972 (0.00722)		-0.0102 (0.00948)
Total Long-Term Policy Effect		0.01 ----		0.014 ----
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.031	0.030	0.031

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00776 (0.0104)	0.00746 (0.0104)	0.0149 (0.0158)	0.0148 (0.0159)
Interaction of Policy & Liquidity Constraint	-0.0214 (0.0165)	-0.0214 (0.0165)	-0.0284 (0.0237)	-0.0284 (0.0237)
Liquidity Constraint - Zero Liquid Assets	-27.39 (120.5)	-26.00 (120.6)	-26.62 (120.6)	-26.17 (120.7)
Policy Amount Lagged One Month	-0.00458 (0.00342)	-0.00489 (0.00345)	-0.00455 (0.00480)	-0.00467 (0.00475)
Policy Amount Lagged Two Months		-0.00217 (0.00253)		-0.000711 (0.00517)
Total Long-Term Policy Effect		0.000 ----		0.009 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0161 (0.0147)	-0.0164 (0.0149)	-0.0124 (0.0133)	-0.0125 (0.0135)
Interaction of Policy & Liquidity Constraint	0.0231 (0.0165)	0.0231 (0.0165)	0.0194 (0.0155)	0.0194 (0.0155)
Liquidity Constraint - 30% DSR Level	246.1 (171.0)	245.2 (171.0)	247.9 (170.9)	247.7 (170.9)
Policy Amount Lagged One Month	-0.00451 (0.00342)	-0.00481 (0.00344)	-0.00445 (0.00480)	-0.00455 (0.00475)
Policy Amount Lagged Two Months		-0.00210 (0.00254)		-0.000608 (0.00517)
Total Long-Term Policy Effect		-0.023 ----		-0.018 ----
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 19: Long-Run Effect of the RDTR

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.193* (0.105)	0.188* (0.105)	0.310** (0.126)	0.300** (0.127)
Interaction of Policy & Liquidity Constraint	-0.265* (0.151)	-0.265* (0.152)	-0.375** (0.165)	-0.376** (0.165)
Liquidity Constraint - Zero Liquid Assets	60.36 (602.6)	67.57 (603.3)	69.08 (602.4)	82.69 (603.5)
Policy Amount Lagged One Month	-0.117 (0.0915)	-0.125 (0.0929)	-0.116 (0.0994)	-0.132 (0.102)
Policy Amount Lagged Two Months		-0.0431 (0.0808)		-0.0803 (0.0866)
Total Long-Term Policy Effect		0.020 ----		0.088 ----
Observations	12,034	12,034	12,034	12,034
Number of CUs	2,729	2,729	2,729	2,729
R-Squared	0.110	0.110	0.110	0.110

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.156* (0.0868)	0.151* (0.0875)	0.260** (0.105)	0.251** (0.106)
Interaction of Policy & Liquidity Constraint	-0.214 (0.159)	-0.213 (0.159)	-0.302* (0.167)	-0.302* (0.167)
Liquidity Constraint - 30% DSR Level	-176.8 (360.1)	-176.6 (360.3)	-161.2 (360.2)	-160.8 (360.4)
Policy Amount Lagged One Month	-0.118 (0.0922)	-0.126 (0.0936)	-0.117 (0.100)	-0.133 (0.103)
Policy Amount Lagged Two Months		-0.0430 (0.0813)		-0.0800 (0.0871)
Total Long-Term Policy Effect		-0.018 ----		0.038 ----
Observations	12,034	12,034	12,034	12,034
Number of CUs	2,729	2,729	2,729	2,729
R-Squared	0.110	0.110	0.110	0.110

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00839 (0.155)	-0.0189 (0.158)	-0.0369 (0.222)	-0.0534 (0.225)
Interaction of Policy & Liquidity Constraint	-0.128 (0.178)	-0.128 (0.178)	-0.120 (0.207)	-0.120 (0.207)
Liquidity Constraint - Zero Liquid Assets	-1,304** (609.4)	-1,290** (611.4)	-1,290** (609.6)	-1,267** (610.2)
Policy Amount Lagged One Month	0.118 (0.212)	0.0983 (0.210)	0.0101 (0.204)	-0.0221 (0.206)
Policy Amount Lagged Two Months		-0.0988 (0.311)		-0.148 (0.267)
Total Long-Term Policy Effect		-0.02 ----		-0.224 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0867 (0.140)	-0.0980 (0.143)	-0.115 (0.181)	-0.132 (0.185)
Interaction of Policy & Liquidity Constraint	0.0538 (0.232)	0.0545 (0.232)	0.0615 (0.207)	0.0626 (0.207)
Liquidity Constraint - 30% DSR Level	-2,152 (2,014)	-2,151 (2,013)	-2,150 (2,015)	-2,148 (2,015)
Policy Amount Lagged One Month	0.116 (0.212)	0.0957 (0.210)	0.00615 (0.204)	-0.0267 (0.206)
Policy Amount Lagged Two Months		-0.103 (0.311)		-0.152 (0.267)
Total Long-Term Policy Effect		-0.105 ----		-0.311 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 20: Long-Run Effect of the RDTR

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00997 (0.0249)	-0.0129 (0.0250)	-0.00819 (0.0272)	-0.0109 (0.0274)
Interaction of Policy & Liquidity Constraint	0.0109 (0.0372)	0.0110 (0.0372)	0.00981 (0.0379)	0.0101 (0.0380)
Liquidity Constraint - Zero Liquid Assets	28.53 (111.7)	31.87 (111.9)	27.89 (111.7)	30.76 (111.8)
Policy Amount Lagged One Month	0.000675 (0.0215)	-0.00390 (0.0222)	0.00536 (0.0220)	0.00120 (0.0228)
Policy Amount Lagged Two Months		-0.0247 (0.0201)		-0.0210 (0.0211)
Total Long-Term Policy Effect		-0.041 ----		-0.031 ----
Observations	10,023	10,023	10,023	10,023
Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.191	0.191	0.191	0.191

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0177 (0.0221)	0.0149 (0.0223)	0.0213 (0.0251)	0.0187 (0.0254)
Interaction of Policy & Liquidity Constraint	-0.0566* (0.0340)	-0.0568* (0.0340)	-0.0588* (0.0355)	-0.0588* (0.0354)
Liquidity Constraint - 30% DSR Level	-96.00 (75.54)	-95.03 (75.61)	-95.51 (75.56)	-94.72 (75.62)
Policy Amount Lagged One Month	0.000520 (0.0218)	-0.00406 (0.0225)	0.00519 (0.0223)	0.00102 (0.0231)
Policy Amount Lagged Two Months		-0.0248 (0.0204)		-0.0211 (0.0214)
Total Long-Term Policy Effect		-0.014 ----		-0.001 ----
Observations	10,023	10,023	10,023	10,023
Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.192	0.192	0.192	0.192

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00830 (0.00894)	-0.0128 (0.00914)	-0.00632 (0.0105)	-0.0111 (0.0106)
Interaction of Policy & Liquidity Constraint	-0.00520 (0.0139)	-0.00529 (0.0140)	-0.00732 (0.0125)	-0.00735 (0.0125)
Liquidity Constraint - Zero Liquid Assets	-41.35 (35.81)	-34.97 (35.91)	-40.96 (35.81)	-34.40 (35.90)
Policy Amount Lagged One Month	-0.0148 (0.0102)	-0.0234** (0.00975)	-0.0164 (0.0113)	-0.0257** (0.0109)
Policy Amount Lagged Two Months		-0.0425*** (0.0113)		-0.0431*** (0.0127)
Total Long-Term Policy Effect		-0.079*** ----		-0.080*** ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.088	0.087	0.088

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00771 (0.00664)	-0.0124* (0.00680)	-0.00626 (0.00799)	-0.0112 (0.00816)
Interaction of Policy & Liquidity Constraint	-0.00809 (0.0173)	-0.00780 (0.0173)	-0.00970 (0.0154)	-0.00936 (0.0154)
Liquidity Constraint - 30% DSR Level	-113.6** (50.54)	-113.0** (50.58)	-113.4** (50.54)	-112.7** (50.57)
Policy Amount Lagged One Month	-0.0147 (0.0102)	-0.0233** (0.00975)	-0.0165 (0.0113)	-0.0258** (0.0109)
Policy Amount Lagged Two Months		-0.0426*** (0.0113)		-0.0431*** (0.0127)
Total Long-Term Policy Effect		-0.078*** ----		-0.080*** ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.088	0.087	0.088

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 21: Long-Run Effect of the RDTR

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0207 (0.0607)	0.0246 (0.0613)	0.0393 (0.0738)	0.0409 (0.0740)
Interaction of Policy & Liquidity Constraint	0.0621 (0.116)	0.0654 (0.115)	0.0456 (0.125)	0.0479 (0.125)
Liquidity Constraint - Zero Liquid Assets	324.1 (394.2)	320.7 (393.6)	318.5 (393.6)	316.7 (393.4)
Policy Amount Lagged One Month	-0.0100 (0.0591)	-0.00430 (0.0597)	0.0235 (0.0630)	0.0266 (0.0639)
Policy Amount Lagged Two Months		0.0348 (0.0576)		0.0183 (0.0575)
Total Long-Term Policy Effect		0.055 ----		0.086 ----
Observations	7,393	7,393	7,393	7,393
Number of CUs	2,364	2,364	2,364	2,364
R-Squared	0.036	0.036	0.036	0.036

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00621 (0.0643)	-0.00163 (0.0644)	0.00989 (0.0761)	0.0117 (0.0762)
Interaction of Policy & Liquidity Constraint	0.113 (0.0929)	0.115 (0.0926)	0.102 (0.0992)	0.104 (0.0991)
Liquidity Constraint - 30% DSR Level	-193.7 (209.9)	-195.5 (209.9)	-194.9 (210.1)	-195.9 (210.2)
Policy Amount Lagged One Month	-0.00704 (0.0594)	-0.000973 (0.0599)	0.0261 (0.0633)	0.0296 (0.0641)
Policy Amount Lagged Two Months		0.0368 (0.0578)		0.0199 (0.0576)
Total Long-Term Policy Effect		0.034 ----		0.061 ----
Observations	7,393	7,393	7,393	7,393
Number of CUs	2,364	2,364	2,364	2,364
R-Squared	0.037	0.037	0.037	0.037

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0144 (0.0439)	0.0175 (0.0441)	0.0509 (0.0647)	0.0472 (0.0643)
Interaction of Policy & Liquidity Constraint	-0.00944 (0.0735)	-0.00938 (0.0735)	-0.0443 (0.0916)	-0.0443 (0.0916)
Liquidity Constraint - Zero Liquid Assets	-125.9 (171.2)	-130.2 (171.7)	-122.3 (171.4)	-117.1 (171.6)
Policy Amount Lagged One Month	-0.0216 (0.0529)	-0.0159 (0.0485)	-0.0282 (0.0666)	-0.0356 (0.0598)
Policy Amount Lagged Two Months		0.0282 (0.0768)		-0.0340 (0.0723)
Total Long-Term Policy Effect		0.03 ----		-0.022 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0121 (0.0495)	-0.00900 (0.0496)	0.0191 (0.0561)	0.0153 (0.0557)
Interaction of Policy & Liquidity Constraint	0.0620 (0.0718)	0.0618 (0.0718)	0.0323 (0.0718)	0.0325 (0.0718)
Liquidity Constraint - 30% DSR Level	-507.0 (420.1)	-507.4 (420.1)	-503.0 (420.0)	-502.4 (420.1)
Policy Amount Lagged One Month	-0.0213 (0.0530)	-0.0157 (0.0486)	-0.0283 (0.0666)	-0.0356 (0.0599)
Policy Amount Lagged Two Months		0.0280 (0.0767)		-0.0339 (0.0723)
Total Long-Term Policy Effect		0.003 ----		-0.054 ----
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

VI. Policy Implications and Concluding Remarks

Based on the results from the models discussed in the previous chapter, this chapter discusses the policy implications of those results. This chapter discusses the policy implications of the effects of the tax policies on liquidity constrained households, liquidity constraints generally, and the effects of the tax policies on consumption. The MPCs discussed in the previous chapter and multiplier values calculated here are important for understanding the change in output generated by the ARRA tax policies and thus how effective those policies were at combating the recession. Truly effective counter-cyclical policies should be ones that generate positive MPCs and multipliers above one. Negative MPCs and/or multipliers below one indicate policies that should be avoided for the purpose of increasing output and combating recessions. Congress and other policymakers should only pursue future counter-cyclical fiscal policies with positive MPCs and multipliers above one.

Looking at the effects of being liquidity constrained, the results from tables 4 to 12 above showed that being liquidity constrained was generally insignificant on the monthly changes in spending. However, when liquidity constraints were significant, they caused the monthly changes in consumption to be negative. The monthly change in total spending decreased by \$1,288 to \$1,486 a month, and the monthly change in nondurable goods spending decreased between \$91.26 and \$188.30 a month. However, the ARRA tax policies generated very few significant and positive MPCs from liquidity constrained households. The total MPC of the MWPTC on the monthly change in total spending by liquidity constrained households was negative 0.525 to positive 1.746 when significant; and, between negative 0.226 to positive 0.066 for the monthly change in nondurable

goods spending when significant. The expansion of the EITC and the RDTR generated no significant total effects on the monthly changes in spending from liquidity constrained households.

For policymakers, these results suggest that if future policies similar to the MWPTC generate a significant effect on consumption, liquidity constrained households typically will have some negative and some positive consumption responses. Positive consumption responses were seen in the monthly changes in total and nondurable goods spending from the MWPTC. However, these total effects are smaller than otherwise due to the negative interaction effects of being liquidity constrained and receiving the MWPTC. Assuming these positive total consumption responses are the true effects, they indicate that the MWPTC had a large positive spending response and was an effective counter-cyclical fiscal policy; and that the expansion of the EITC and the RDTR were fairly ineffective counter-cyclical fiscal policies, especially when the goal of those policies is to boost output through increased consumption spending. There were eight specifications measuring the total effect from liquidity constrained households on each type of monthly change in spending. For the monthly change in total spending from the MWPTC, six out of eight specifications were significant and five out of eight of those significant coefficients were positive. Thus, there is moderate support that the MWPTC (and thus future similar policies) had a significant positive effect on the monthly change in total spending by liquidity constrained households.

With a maximum MPC of 1.746 on the monthly change in total spending from the MWPTC by liquidity constrained households, the MWPTC caused the monthly change in total spending by liquidity constrained households to increase by approximately \$203

billion. The maximum positive multiplier estimate from the MWPTC on the monthly change in nondurable goods spending by liquidity constrained households is 0.071 and suggests approximately \$1.04 billion in new output generated out of \$116 billion spent on the MWPTC (U.S. Congress, 2009).⁶² This new output generated from the monthly change in nondurable goods spending is part of the new output generated from the large positive monthly change in total spending by liquidity constrained households from the MWPTC. The expansion of the EITC and the RDTR generated no significant total effects from liquidity constrained households on the monthly changes in any type of spending and thus generated no significant changes in output from liquidity constrained households.

The MWPTC was an effective counter-cyclical fiscal policy for liquidity constrained households as their monthly change in total spending increased almost twofold. The expansion of the EITC and the RDTR were ineffective counter-cyclical fiscal policies for liquidity constrained households as they generated no significant total effects. However, these effects on the monthly changes in total and nondurable goods spending for the MWPTC assume that only the positive MPCs are the true effects. If the negative MPCs are the true effects, then output may actually decrease or positive changes in output may be cancelled out. The possible negative MPCs out of the MWPTC by liquidity constrained households and the lack of a significant consumption response by liquidity constrained households from the expansion of the EITC and the RDTR suggests Congress should consider alternative policies targeted at liquidity constrained households for expanding the economy in the future.

⁶² These values are based on both the multiplier estimate and the proportions of nondurable expenditures to total expenditures and average liquidity constrained households to all households in Table 1.

Assuming the significant negative monthly changes in consumption from liquidity constraints are the true effects, policies that aim to reduce borrowing restrictions may help ease liquidity constraints and thus boost consumption and output in future recessions. The Federal Reserve's past use of near-zero interest rates is an example of helping to ease borrowing restrictions on consumers. Cash-equivalent tax policies, like the MWPTC, expansion of the EITC, and RDTR, were found to produce negative MPCs, multipliers below-one for liquidity constrained households, and in some cases no significant consumption response at all. Thus, these kinds of policies would likely be ineffective future counter-cyclical fiscal policies for liquidity constrained households.

Turning to the effects of the tax cuts on all households, the long-run effects of receiving the ARRA tax policies studied here are shown in tables 13 to 21. Tables 13 to 15 show that the MWPTC demonstrated large positive consumption responses typically one month after receiving it. For example, the one-month lag MPC from the MWPTC is 1.135 to 2.487 for the monthly change in total spending and 0.101 to 0.436 for the monthly change in nondurable goods spending. For the monthly change in durable goods spending, the MWPTC had a one-month lag MPC of negative 0.358 to positive 0.525. The relatively large and significant one-month lag MPCs of the MWPTC suggest to policymakers that it took time for the effects of the MWPTC to appear in consumer spending. For future similar tax policies, this information helps policymakers improve forecasting by demonstrating positive spending effects should lag about one month behind receipt of the tax cut. Despite these large one-month spending lags, negative monthly changes in spending from the MWPTC were common during the contemporaneous and two-month lag periods.

When significant, the total long-run effect of the MWPTC on the monthly change in total goods spending was relatively large with positive MPC values above one. The total long-run effect of the MWPTC on the monthly change in nondurable goods spending was much smaller with positive MPC values below one. Similarly, significant long-run effects of the expansion of the EITC and the RDTR as seen in tables 16 to 21 were in some cases negative and when positive were generally small. The long-run MPC of the MWPTC is 1.614 to 1.947 on the monthly change in total spending, 0.082 to 0.155 on the monthly change in nondurable goods spending, and negative 0.461 to negative 0.354 on the monthly change in durable goods spending. The long-run MPC of the expansion of the EITC on the monthly change in total spending is 0.065, and 0.007 to 0.011 on the monthly change in nondurable goods spending. Finally, the long-run MPC of the RDTR is negative 0.080 to negative 0.078 on the monthly change in nondurable goods spending.

For policymakers, these negative consumption responses and small MPCs indicate that the expansion of the EITC and the RDTR failed as expansionary fiscal policies. The MWPTC, despite having a negative long-run effect on the monthly change in durable goods purchases and a small positive long-run effect on the monthly change in nondurable goods purchases, had a very large long-run effect on the monthly change in total spending. This suggests that the MWPTC, at least, was an overall effective expansionary fiscal policy.

Assuming the maximum positive MPCs from the tax policies are the true effects, the multiplier effects are generally below one, with exception of the MWPTC on the monthly change in total spending. The MWPTC had a maximum long-run MPC of 1.947 on the monthly change in total spending, and a maximum long-run multiplier of 0.183 on the

monthly change in nondurable goods spending. The expansion of the EITC had a maximum long-run multiplier on the monthly change in total spending of 0.070 and on the monthly change in nondurable goods spending of 0.011. Of the \$116 billion Congress spent on the MWPTC, it generated a positive monthly change in total spending of approximately \$226 billion, with approximately a \$6.67 billion increase in output from a positive monthly change in nondurable goods spending.⁶³ Congress spent approximately \$4.7 billion on the expansion of the EITC and generated approximately \$329 million in new output from positive monthly changes in total spending with approximately \$14.3 million of the \$329 million coming from positive monthly changes in nondurable goods spending (U.S. Congress, 2009).⁶⁴ Congress allocated approximately \$13.5 billion for the RDTR and generated no significant long-run increases in output from monthly changes in spending (U.S. Social Security Administration, 2010). The RDTR actually caused slight negative monthly changes in long-run nondurable goods expenditures.

Similar to the discussion of the effects from liquidity constrained households, if the negative consumptions responses are the true effects, these positive changes in output are likely cancelled out or significantly reduced by decreases in output from negative monthly changes in spending. It is possible that the effects of the 2007 – 2009 recession on household finances and household economic outlooks were so damaging that only extremely large tax cuts would have generated strictly positive MPCs and multipliers above one.

Overall, the long-run MPCs and multipliers suggest, at best, a large expansion in total

⁶³ These values are based on both the multiplier estimates and the proportion of nondurable goods expenditures to total expenditures in Table 1.

⁶⁴ These values are based on both the multiplier estimates and the proportion of durable goods expenditures to total expenditures in Table 2.

spending from the MWPTC and small expansion in output from the expansion of the EITC; and, at worst, no change in output from any of the ARRA tax policies or small output declines from the RDTR. Thus, the significant results suggest two things: one, the MWPTC was an effective counter-cyclical fiscal policy by generating a large positive monthly change in total spending (despite a negative monthly change in durable goods spending); and, two, the expansion of the EITC and the RDTR were ineffective counter-cyclical fiscal policies.⁶⁵ However, the results across tax policies and types of expenditures were generally insignificant. It is possible that none of the policies generated any significant consumption responses and the significant results were simply a product of the specification rather than true effects.

If the significant results are the true effects, then the money spent on the expansion of the EITC and the RDTR likely could have been spent elsewhere with better effect. If none of the policies generated a significant consumption response, then all of the money spent on these policies could have been better spent elsewhere. In regards to the expansion of the EITC and the RDTR (and the MWPTC if it had no true effect), instead of generating, at best, small increases in output, the funds could have been used for direct government expenditures with the same counter-cyclical goal of expanding economic output. Government expenditures on infrastructure projects traditionally provide well-paying, low-skilled jobs that may directly improve the economic situation of the less fortunate more than would tax expenditures. Gechert and Will (2012) found through a meta-analysis of fiscal multipliers that tax reductions on average produced multiplier

⁶⁵ In regards to the EITC, this is not to say that the EITC is a useless policy. It is beneficial in generating positive labor supply effects and can serve larger goals concerning equity. See Liebman (1998), Meyer and Rosenbaum (1999), and Meyer (2010) for a discussion of the EITC's effect on labor supply decisions.

estimates 0.4562 below, and statistically significant at the one percent level, the value of government spending multipliers. Targeted investments in job training, skills acquisition, or education boost human capital which help improve long-run economic well-being and stability for all households.

As discussed earlier, the quasi-experimental nature of these tax policies gives the results some generalizability. Thus, in similar future recessions Congress should consider policies other than those studied here if the intended goal is to stimulate economic output through increased consumption spending. Tax credits or rebates of similar structure and size would likely be ineffective given the multipliers and general insignificance of the results found in this study. If the large long-run effect from the MWPTC is the true effect, it suggests using periodic payments rather than lump sum tax cuts as expansionary counter-cyclical fiscal policy during future recessions. Given the politics of fiscal policy, budget competition, and general policy inertia, it is unlikely Congress will change its counter-cyclical fiscal policy approach dramatically in the short term (Doran, 2007) (Kraft & Furlong, 2007). Thus, future policies similar to the ones studied are more likely to be considered even if they do not produce significant consumption responses. Given that future recessions may not be as damaging as the 2007 – 2009 recession, policies similar to the ARRA tax policies studied here may have different effects. For future research, direct measurement of the amounts of and timing of receipt of counter-cyclical tax policies would improve the modeling of their effects on consumption spending and the economy generally. This could be accomplished by having Congress work with BLS and other federal agencies to improve data collection of the CES and other income and spending datasets.

To conclude, the significant results from the models indicate that the MWPTC was an effective counter-cyclical fiscal policy with a relatively large and positive long-run MPC on the monthly change in total spending, while the expansion of the EITC and the RDTR were generally ineffective with some negative MPCs, multiplier values generally below one, or insignificant consumption responses. The effects of the tax cuts on liquidity constrained households were both negative in some instances and positive but very small in others, in contrast to the theoretical framework laid out in Chapter II. The MWPTC did however exhibit some relatively large positive MPCs on liquidity constrained households. However, the effects on both liquidity constrained and all households were generally insignificant, suggesting that there was likely no consumption response from any of the ARRA tax policies studied here. Altogether, these results suggest that Congress should consider measures other than those similar to the ARRA tax policies studied here for future recessions. There was only minimal support for liquidity constraints causing negative monthly changes in consumption across types of consumption and definitions of being liquidity constrained. This suggests that measures to ease liquidity constraints, other than cash-equivalent tax cuts like the expansion of the EITC and the RDTR, may only marginally increase consumption. The general insignificance of the results makes it hard to conclude that temporary income changes and liquidity constraints are significant determinants of consumption.

Appendix

Table 22: Short-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.726 (1.428)	-0.230 (0.323)	0.0945 (0.332)	-0.271 (0.424)
Interaction of Policy & Liquidity Constraint	-0.640** (0.296)	0.0743 (0.257)	-0.619* (0.322)	0.0982 (0.303)
Liquidity Constraint - Zero Liquid Assets	-38.78 (1,097)		-67.17 (1,116)	
Liquidity Constraint - 30% DSR Level		-563.4 (523.6)		-581.2 (536.9)
Total Effect From Liquidity Constrained Households	0.086* ----	-0.156 ----	-0.525* ----	-0.173 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.125*** (0.0366)	-0.126*** (0.0378)	-0.125*** (0.0366)	-0.127*** (0.0378)
Age of CU reference person	66.79 (67.80)	61.28 (70.49)	66.79 (67.82)	61.56 (70.68)

Age-Squared of CU reference person	-0.268 (0.600)	-0.207 (0.624)	-0.270 (0.601)	-0.211 (0.626)
Change in # of Adults in CU Lagged One Month	-964.9*** (291.0)	-975.3*** (301.0)	-966.8*** (291.0)	-977.7*** (301.4)
Change in # of Children Under 18 in CU Lagged One Month	268.7 (185.3)	296.3 (191.4)	267.4 (185.7)	295.1 (192.1)
Month, 11-2008	-9,403*** (1,687)	-9,694*** (1,742)	-9,364*** (1,706)	-9,668*** (1,764)
Month, 12-2008	-7,815*** (1,667)	-8,076*** (1,721)	-7,782*** (1,675)	-8,053*** (1,732)
Month, 01-2009	-11,647*** (1,787)	-12,012*** (1,843)	-11,599*** (1,802)	-11,979*** (1,862)
Month, 02-2009	-14,003*** (1,686)	-14,424*** (1,739)	-13,944*** (1,718)	-14,383*** (1,776)
Month, 03-2009	-15,000*** (1,729)	-15,446*** (1,783)	-14,919*** (1,792)	-15,388*** (1,849)
Month, 04-2009	-14,753*** (1,743)	-15,207*** (1,798)	-14,672*** (1,802)	-15,149*** (1,861)
Month, 05-2009	-14,793*** (1,734)	-15,237*** (1,789)	-14,713*** (1,797)	-15,179*** (1,856)
Month, 06-2009	-14,026*** (1,763)	-14,450*** (1,818)	-13,944*** (1,827)	-14,390*** (1,887)
Month, 07-2009	-14,260*** (1,739)	-14,672*** (1,795)	-14,178*** (1,803)	-14,613*** (1,863)
Month, 08-2009	-13,927*** (1,766)	-14,339*** (1,825)	-13,845*** (1,829)	-14,278*** (1,893)
Month, 09-2009	-14,578***	-14,996***	-14,497***	-14,937***

	(1,745)	(1,799)	(1,807)	(1,866)
Month, 10-2009	-15,181*** (1,744)	-15,616*** (1,798)	-15,102*** (1,804)	-15,558*** (1,863)
Month, 11-2009	-15,202*** (1,747)	-15,646*** (1,801)	-15,123*** (1,806)	-15,588*** (1,866)
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.124	0.123	0.124	0.123

Panel B. The Level Amount of Total Consumption Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	1.585* (0.845)	1.175 (0.987)	1.780 (1.135)	1.508 (1.286)
Interaction of Policy & Liquidity Constraint	-0.150 (0.699)	0.462 (0.916)	-0.260 (0.753)	0.238 (0.941)
Liquidity Constraint - Zero Liquid Assets	856.4 (1,908)		995.9 (1,938)	
Liquidity Constraint - 30% DSR Level		-3,920 (3,672)		-3,779 (3,644)
Total Effect From Liquidity Constrained Households	1.435* ----	1.637** ----	1.520* ----	1.746** ----

Permanent Monthly After-Tax Income, Lagged One Month	-0.213 (0.141)	-0.220 (0.140)	-0.215 (0.141)	-0.220 (0.141)
Age of CU reference person	-303.0 (381.6)	-317.5 (384.7)	-303.4 (381.4)	-320.2 (384.3)
Age-Squared of CU reference person	3.542 (3.266)	3.659 (3.289)	3.556 (3.262)	3.695 (3.287)
Change in # of Adults in CU Lagged One Month	-562.7 (1,127)	-509.3 (1,130)	-551.0 (1,127)	-494.0 (1,130)
Change in # of Children Under 18 in CU Lagged One Month	-1,639 (1,044)	-1,648 (1,043)	-1,632 (1,041)	-1,636 (1,039)
Month, 11-2008	-5,972 (5,623)	-6,005 (5,628)	-5,970 (5,623)	-6,004 (5,627)
Month, 12-2008	-2,088 (4,115)	-2,125 (4,116)	-2,086 (4,115)	-2,123 (4,115)
Month, 01-2009	-8,567** (4,318)	-8,473** (4,319)	-8,563** (4,317)	-8,474** (4,318)
Month, 02-2009	-8,817** (4,131)	-8,629** (4,135)	-8,813** (4,130)	-8,634** (4,134)
Month, 03-2009	-10,339** (4,252)	-10,045** (4,269)	-10,490** (4,398)	-10,254** (4,418)
Month, 04-2009	-6,878* (3,951)	-6,673* (3,960)	-7,029* (4,050)	-6,883* (4,063)
Month, 05-2009	-8,762** (3,990)	-8,545** (3,996)	-8,914** (4,079)	-8,756** (4,091)
Month, 06-2009	-5,732	-5,520	-5,884	-5,732

	(4,084)	(4,145)	(4,177)	(4,225)
Month, 07-2009	-8,416** (4,172)	-8,184** (4,123)	-8,568** (4,263)	-8,394** (4,233)
Month, 08-2009	-6,346 (4,164)	-6,117 (4,237)	-6,498 (4,254)	-6,327 (4,312)
Month, 09-2009	-9,550** (4,262)	-9,321** (4,185)	-9,701** (4,365)	-9,532** (4,321)
Month, 10-2009	-8,175** (4,063)	-7,886* (4,075)	-8,327** (4,161)	-8,099* (4,177)
Month, 11-2009	-7,771* (3,977)	-7,497* (3,982)	-7,920* (4,074)	-7,710* (4,086)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 23: Short-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.163 (0.444)	-0.0569 (0.0549)	-0.000542 (0.0590)	-0.00801 (0.0741)
Interaction of Policy & Liquidity Constraint	-0.0627 (0.0467)	0.0141 (0.0447)	-0.0712 (0.0513)	-0.0134 (0.0537)
Liquidity Constraint - Zero Liquid Assets	-164.0 (171.3)		-150.4 (174.0)	
Liquidity Constraint - 30% DSR Level		-188.3* (105.2)		-164.3 (103.4)
Total Effect From Liquidity Constrained Households	-0.226* ----	-0.043 ----	-0.072 ----	-0.031 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0247*** (0.00699)	-0.0255*** (0.00728)	-0.0248*** (0.00699)	-0.0253*** (0.00726)
Age of CU reference person	-13.80 (14.62)	-15.77 (15.20)	-13.71 (14.61)	-15.85 (15.15)
Age-Squared of CU reference person	0.185	0.206	0.185	0.207

	(0.131)	(0.136)	(0.131)	(0.136)
Change in # of Adults in CU Lagged One Month	52.11 (52.68)	57.81 (54.94)	52.86 (52.79)	58.09 (54.89)
Change in # of Children Under 18 in CU Lagged One Month	-0.566 (39.29)	0.616 (40.43)	-0.151 (39.33)	1.144 (40.40)
Month, 11-2008	-2,386*** (368.8)	-2,440*** (378.2)	-2,405*** (371.8)	-2,464*** (382.5)
Month, 12-2008	-2,378*** (346.2)	-2,437*** (354.2)	-2,397*** (349.4)	-2,460*** (358.7)
Month, 01-2009	-3,623*** (369.1)	-3,707*** (376.3)	-3,653*** (372.7)	-3,741*** (381.7)
Month, 02-2009	-3,878*** (355.1)	-3,967*** (361.3)	-3,910*** (360.8)	-4,005*** (369.7)
Month, 03-2009	-3,993*** (361.7)	-4,085*** (368.0)	-4,032*** (369.8)	-4,132*** (379.0)
Month, 04-2009	-3,882*** (363.7)	-3,972*** (370.2)	-3,922*** (372.4)	-4,020*** (381.8)
Month, 05-2009	-3,837*** (365.5)	-3,923*** (372.3)	-3,877*** (374.1)	-3,971*** (383.9)
Month, 06-2009	-3,849*** (364.0)	-3,937*** (370.5)	-3,889*** (372.3)	-3,986*** (382.0)
Month, 07-2009	-3,822*** (364.9)	-3,906*** (371.5)	-3,861*** (372.9)	-3,954*** (382.5)
Month, 08-2009	-3,728*** (365.1)	-3,810*** (371.7)	-3,769*** (374.0)	-3,859*** (383.8)
Month, 09-2009	-3,861*** (365.4)	-3,945*** (371.8)	-3,901*** (373.4)	-3,993*** (382.9)
Month, 10-2009	-4,026*** (363.9)	-4,112*** (370.0)	-4,065*** (371.8)	-4,159*** (380.8)

Month, 11-2009	-3,980*** (366.4)	-4,067*** (372.5)	-4,019*** (374.4)	-4,115*** (383.7)
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.217	0.217	0.217	0.217

Panel B. The Level Amount of Nondurable Goods Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.0592** (0.0281)	0.0472 (0.0311)	0.110*** (0.0370)	0.113*** (0.0418)
Interaction of Policy & Liquidity Constraint	-0.0320 (0.0289)	-0.00272 (0.0279)	-0.0605* (0.0317)	-0.0467 (0.0318)
Liquidity Constraint - Zero Liquid Assets	-55.81 (120.5)		-19.77 (122.6)	
Liquidity Constraint - 30% DSR Level		-105.5* (59.76)		-77.70 (59.55)
Total Effect From Liquidity Constrained Households	0.027 ----	0.044* ----	0.049 ----	0.066** ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0679*** (0.00948)	-0.0679*** (0.00948)	-0.0682*** (0.00948)	-0.0680*** (0.00947)

Age of CU reference person	-6.664 (23.75)	-7.321 (23.75)	-6.780 (23.73)	-7.849 (23.74)
Age-Squared of CU reference person	0.174 (0.200)	0.180 (0.200)	0.178 (0.200)	0.187 (0.200)
Change in # of Adults in CU Lagged One Month	61.55 (41.53)	63.32 (41.51)	64.58 (41.51)	66.34 (41.44)
Change in # of Children Under 18 in CU Lagged One Month	16.65 (31.69)	17.52 (31.63)	18.43 (31.72)	19.90 (31.58)
Month, 11-2008	-773.1*** (201.2)	-773.8*** (201.2)	-772.5*** (201.4)	-773.6*** (201.3)
Month, 12-2008	-523.9*** (184.5)	-523.9*** (184.5)	-523.3*** (184.7)	-523.5*** (184.7)
Month, 01-2009	-2,237*** (194.6)	-2,234*** (194.6)	-2,236*** (194.7)	-2,234*** (194.6)
Month, 02-2009	-1,817*** (180.8)	-1,810*** (180.9)	-1,816*** (180.9)	-1,811*** (181.0)
Month, 03-2009	-1,803*** (182.0)	-1,797*** (182.1)	-1,842*** (181.7)	-1,838*** (181.7)
Month, 04-2009	-1,359*** (181.4)	-1,355*** (181.6)	-1,399*** (180.6)	-1,396*** (180.6)
Month, 05-2009	-1,382*** (181.1)	-1,377*** (181.3)	-1,421*** (180.3)	-1,418*** (180.4)
Month, 06-2009	-1,378*** (180.6)	-1,373*** (180.7)	-1,417*** (179.8)	-1,415*** (179.8)
Month, 07-2009	-1,311*** (183.8)	-1,305*** (184.1)	-1,351*** (182.9)	-1,346*** (182.9)
Month, 08-2009	-1,377*** (185.6)	-1,370*** (185.7)	-1,417*** (185.0)	-1,411*** (185.0)

Month, 09-2009	-1,483*** (182.9)	-1,474*** (183.0)	-1,522*** (182.0)	-1,516*** (182.0)
Month, 10-2009	-1,414*** (183.6)	-1,402*** (183.9)	-1,453*** (182.7)	-1,444*** (182.8)
Month, 11-2009	-1,335*** (189.1)	-1,323*** (189.2)	-1,373*** (188.6)	-1,365*** (188.6)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.089	0.089	0.089	0.089

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 24: Short-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.299 (0.480)	-0.312* (0.188)	-0.164 (0.164)	-0.419* (0.244)
Interaction of Policy & Liquidity Constraint	-0.151 (0.182)	0.191 (0.150)	-0.102 (0.189)	0.254 (0.174)
Liquidity Constraint - Zero Liquid Assets	382.6 (554.4)		324.9 (564.0)	
Liquidity Constraint - 30% DSR Level		-434.1 (324.2)		-488.6 (336.2)
Total Effect From Liquidity Constrained Households	-0.45 ----	-0.121 ----	-0.266 ----	-0.165 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.00580 (0.0261)	0.00485 (0.0267)	0.00585 (0.0262)	0.00452 (0.0270)
Age of CU reference person	-64.69 (61.28)	-67.47 (62.73)	-65.64 (61.46)	-68.73 (63.30)
Age-Squared of CU reference person	0.619 (0.557)	0.644 (0.570)	0.624 (0.558)	0.653 (0.575)

Change in # of Adults in CU Lagged One Month	77.77 (126.1)	88.83 (127.7)	75.51 (126.2)	88.19 (128.6)
Change in # of Children Under 18 in CU Lagged One Month	92.65 (126.2)	93.26 (128.6)	90.70 (126.7)	91.42 (129.7)
Month, 11-2008	1,255*** (380.2)	1,269*** (379.6)	1,227*** (371.0)	1,253*** (374.3)
Month, 12-2008	1,895*** (335.0)	1,907*** (335.7)	1,848*** (330.1)	1,880*** (333.8)
Month, 01-2009	1,697*** (408.3)	1,742*** (412.4)	1,659*** (397.3)	1,721*** (405.3)
Month, 02-2009	500.6* (264.0)	513.9* (264.6)	489.2* (256.3)	509.6** (260.0)
Month, 03-2009	204.9 (249.9)	246.4 (254.6)	256.7 (257.6)	293.0 (266.6)
Month, 04-2009	722.0** (293.0)	780.9*** (300.4)	783.0** (304.4)	840.2*** (317.7)
Month, 05-2009	205.7 (234.2)	247.7 (237.8)	257.4 (241.0)	293.9 (248.9)
Month, 06-2009	761.0*** (284.6)	817.5*** (292.7)	822.7*** (295.6)	878.6*** (309.2)
Month, 07-2009	547.8* (286.3)	602.5** (292.5)	606.5** (297.2)	657.6** (308.5)
Month, 08-2009	494.3* (275.5)	545.4* (280.6)	553.6* (285.2)	600.6** (295.4)
Month, 09-2009	502.0* (269.9)	545.2** (274.2)	559.4** (277.9)	599.1** (286.8)
Month, 10-2009	276.0 (285.6)	319.8 (291.1)	329.2 (294.2)	368.1 (304.4)
Month, 11-2009	472.3	515.0	527.1*	567.9*

	(309.8)	(314.3)	(318.9)	(328.9)
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.036	0.036	0.036	0.036

Panel B. The Level Amount of Durable Goods Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.241 (0.154)	-0.0557 (0.158)	0.215 (0.222)	-0.0518 (0.252)
Interaction of Policy & Liquidity Constraint	-0.222** (0.109)	0.269*** (0.0968)	-0.208* (0.116)	0.266** (0.132)
Liquidity Constraint - Zero Liquid Assets	-295.5 (596.1)		-313.9 (603.8)	
Liquidity Constraint - 30% DSR Level		-197.2 (246.3)		-195.6 (255.5)
Total Effect From Liquidity Constrained Households	0.019 ----	0.213 ----	0.007 ----	0.214 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0653** (0.0294)	-0.0643** (0.0295)	-0.0652** (0.0295)	-0.0636** (0.0294)

Age of CU reference person	-21.90 (81.83)	-29.91 (81.60)	-21.84 (81.86)	-30.39 (81.53)
Age-Squared of CU reference person	0.249 (0.696)	0.349 (0.696)	0.247 (0.697)	0.355 (0.697)
Change in # of Adults in CU Lagged One Month	-162.1 (208.3)	-162.5 (208.2)	-163.7 (208.4)	-186.0 (208.9)
Change in # of Children Under 18 in CU Lagged One Month	-139.4 (216.0)	-131.5 (215.2)	-140.3 (216.5)	-141.7 (215.5)
Month, 11-2008	-467.6 (880.8)	-249.8 (889.4)	-468.0 (880.7)	-104.8 (880.7)
Month, 12-2008	37.72 (777.1)	296.7 (780.9)	37.41 (777.1)	383.4 (774.7)
Month, 01-2009	-705.3 (754.3)	-359.3 (787.2)	-705.8 (754.0)	-273.2 (791.1)
Month, 02-2009	-303.1 (748.1)	48.15 (769.6)	-303.6 (748.1)	68.12 (771.6)
Month, 03-2009	-523.1 (798.2)	135.3 (917.4)	-503.3 (833.8)	207.8 (1,032)
Month, 04-2009	-152.4 (764.8)	162.6 (795.4)	-132.5 (789.2)	8.339 (889.4)
Month, 05-2009	-418.3 (749.2)	-100.9 (780.7)	-398.4 (773.4)	-58.51 (825.8)
Month, 06-2009	273.7 (773.0)	593.2 (803.1)	293.7 (797.1)	635.4 (846.4)
Month, 07-2009	-354.3 (734.5)	-33.48 (763.7)	-334.3 (751.8)	8.699 (798.9)
Month, 08-2009	-323.5 (810.8)	1.074 (845.3)	-303.6 (839.6)	43.01 (896.6)

Month, 09-2009	-509.0 (770.2)	-175.2 (802.0)	-489.1 (795.6)	-132.8 (848.7)
Month, 10-2009	159.6 (783.9)	510.2 (813.0)	179.6 (808.4)	550.1 (858.9)
Month, 11-2009	-331.6 (794.2)	30.87 (827.1)	-311.9 (818.1)	65.13 (875.4)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 25: Long-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.865*** (0.314)	-0.754** (0.315)	-1.503*** (0.391)	-1.301*** (0.391)
Interaction of Policy & Liquidity Constraint	-0.638** (0.300)	-0.646** (0.298)	-0.600* (0.332)	-0.623* (0.329)
Liquidity Constraint - Zero Liquid Assets	-12.19 (1,112)	-56.32 (1,100)	-58.23 (1,156)	-84.40 (1,139)
Policy Amount Lagged One Month	1.135*** (0.219)	1.774*** (0.263)	1.773*** (0.270)	2.394*** (0.306)
Policy Amount Lagged Two Months		-0.898*** (0.219)		-0.960*** (0.254)
Total Long-Term Policy Effect		0.122 ----		0.133 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.116*** (0.0366)	-0.109*** (0.0363)	-0.112*** (0.0372)	-0.105*** (0.0368)
Age of CU reference person	33.39 (67.35)	41.58 (66.27)	15.43 (68.28)	25.88 (67.03)
Age-Squared of CU reference person	0.156 (0.603)	0.0540 (0.594)	0.388 (0.615)	0.257 (0.604)
Change in # of Adults in CU Lagged One Month	-992.7*** (293.2)	-1,091*** (294.9)	-1,024*** (298.1)	-1,124*** (300.4)

Change in # of Children Under 18 in CU Lagged One Month	278.1 (185.4)	220.1 (184.9)	283.8 (188.6)	221.7 (188.5)
Month, 11-2008	-6,514*** (1,435)	-6,031*** (1,491)	-5,273*** (1,299)	-4,855*** (1,362)
Month, 12-2008	-4,577*** (1,457)	-4,486*** (1,496)	-3,158** (1,332)	-3,142** (1,374)
Month, 01-2009	-7,810*** (1,631)	-7,803*** (1,684)	-6,080*** (1,522)	-6,160*** (1,583)
Month, 02-2009	-10,337*** (1,497)	-10,900*** (1,544)	-8,707*** (1,369)	-9,398*** (1,430)
Month, 03-2009	-10,653*** (1,586)	-11,279*** (1,630)	-8,500*** (1,513)	-9,352*** (1,567)
Month, 04-2009	-11,228*** (1,522)	-12,208*** (1,573)	-9,642*** (1,402)	-10,782*** (1,471)
Month, 05-2009	-11,260*** (1,515)	-11,690*** (1,564)	-9,671*** (1,396)	-10,224*** (1,457)
Month, 06-2009	-10,487*** (1,544)	-10,911*** (1,594)	-8,881*** (1,430)	-9,433*** (1,492)
Month, 07-2009	-10,718*** (1,519)	-11,145*** (1,567)	-9,114*** (1,403)	-9,669*** (1,464)
Month, 08-2009	-10,386*** (1,546)	-10,820*** (1,594)	-8,777*** (1,432)	-9,340*** (1,491)
Month, 09-2009	-11,052*** (1,525)	-11,481*** (1,575)	-9,463*** (1,408)	-10,018*** (1,471)
Month, 10-2009	-11,629*** (1,526)	-12,067*** (1,574)	-10,035*** (1,407)	-10,598*** (1,467)
Month, 11-2009	-11,635*** (1,536)	-12,088*** (1,585)	-10,033*** (1,417)	-10,613*** (1,479)
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.127	0.130	0.127	0.130

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-1.297*** (0.379)	-1.163*** (0.378)	-2.000*** (0.482)	-1.761*** (0.479)
Interaction of Policy & Liquidity Constraint	0.107 (0.259)	0.0813 (0.260)	0.179 (0.307)	0.130 (0.307)
Liquidity Constraint - 30% DSR Level	-584.9 (531.5)	-534.5 (527.8)	-643.9 (556.5)	-572.2 (551.1)
Policy Amount Lagged One Month	1.184*** (0.227)	1.832*** (0.271)	1.859*** (0.280)	2.487*** (0.317)
Policy Amount Lagged Two Months		-0.914*** (0.225)		-0.980*** (0.263)
Total Long-Term Policy Effect		-0.246 ----		-0.254 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.117*** (0.0378)	-0.109*** (0.0374)	-0.114*** (0.0386)	-0.106*** (0.0381)
Age of CU reference person	26.64 (70.06)	34.91 (68.81)	8.314 (71.31)	18.72 (69.81)
Age-Squared of CU reference person	0.234 (0.628)	0.130 (0.617)	0.474 (0.643)	0.342 (0.629)
Change in # of Adults in CU Lagged One Month	-1,005*** (303.3)	-1,103*** (304.7)	-1,039*** (309.4)	-1,139*** (311.0)
Change in # of Children Under 18 in CU Lagged One Month	306.2 (191.9)	247.0 (191.1)	313.1 (195.8)	249.4 (195.3)

Month, 11-2008	-6,699*** (1,482)	-6,199*** (1,538)	-5,422*** (1,344)	-4,982*** (1,406)
Month, 12-2008	-4,717*** (1,505)	-4,618*** (1,542)	-3,247** (1,377)	-3,221** (1,417)
Month, 01-2009	-8,033*** (1,682)	-8,014*** (1,734)	-6,246*** (1,573)	-6,310*** (1,632)
Month, 02-2009	-10,624*** (1,545)	-11,180*** (1,589)	-8,950*** (1,416)	-9,630*** (1,474)
Month, 03-2009	-10,931*** (1,637)	-11,555*** (1,679)	-8,712*** (1,567)	-9,561*** (1,618)
Month, 04-2009	-11,552*** (1,570)	-12,532*** (1,618)	-9,934*** (1,448)	-11,068*** (1,515)
Month, 05-2009	-11,573*** (1,563)	-11,994*** (1,610)	-9,950*** (1,443)	-10,488*** (1,502)
Month, 06-2009	-10,779*** (1,592)	-11,196*** (1,640)	-9,138*** (1,478)	-9,676*** (1,538)
Month, 07-2009	-10,999*** (1,569)	-11,419*** (1,615)	-9,361*** (1,451)	-9,901*** (1,510)
Month, 08-2009	-10,665*** (1,598)	-11,092*** (1,645)	-9,021*** (1,484)	-9,571*** (1,541)
Month, 09-2009	-11,340*** (1,573)	-11,761*** (1,621)	-9,718*** (1,455)	-10,257*** (1,516)
Month, 10-2009	-11,933*** (1,573)	-12,361*** (1,619)	-10,307*** (1,454)	-10,851*** (1,512)
Month, 11-2009	-11,947*** (1,583)	-12,391*** (1,631)	-10,311*** (1,465)	-10,874*** (1,525)
Observations	7,057	7,057	7,057	7,057
Number of CUs	1,275	1,275	1,275	1,275
R-Squared	0.127	0.129	0.127	0.129

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	2.609 (2.040)	2.519 (2.015)	1.659 (2.499)	1.522 (2.441)

Interaction of Policy & Liquidity Constraint	-0.179 (0.720)	-0.161 (0.720)	-0.255 (0.784)	-0.226 (0.784)
Liquidity Constraint - Zero Liquid Assets	819.0 (1,888)	849.2 (1,883)	998.9 (1,925)	1,010 (1,921)
Policy Amount Lagged One Month	-1.189 (1.512)	-2.001 (1.904)	0.139 (1.823)	-0.517 (2.351)
Policy Amount Lagged Two Months		1.096 (1.000)		0.942 (1.273)
Total Long-Term Policy Effect		1.614** ----		1.947* ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.219 (0.142)	-0.221 (0.142)	-0.214 (0.142)	-0.215 (0.143)
Age of CU reference person	-274.3 (368.9)	-282.5 (368.8)	-306.7 (366.4)	-314.8 (366.7)
Age-Squared of CU reference person	3.172 (3.117)	3.277 (3.112)	3.598 (3.128)	3.699 (3.122)
Change in # of Adults in CU Lagged One Month	-556.1 (1,128)	-413.8 (1,121)	-551.9 (1,130)	-431.3 (1,157)
Change in # of Children Under 18 in CU Lagged One Month	-1,646 (1,046)	-1,580 (1,049)	-1,631 (1,039)	-1,575 (1,059)
Month, 11-2008	-6,792 (5,956)	-7,365 (6,024)	-5,874 (5,516)	-6,338 (5,481)

Month, 12-2008	-3,046 (4,284)	-3,211 (4,283)	-1,974 (3,806)	-2,082 (3,780)
Month, 01-2009	-9,824** (4,530)	-9,870** (4,535)	-8,417** (3,953)	-8,412** (3,953)
Month, 02-2009	-10,074** (4,329)	-9,716** (4,308)	-8,667** (3,696)	-8,315** (3,754)
Month, 03-2009	-12,702** (5,733)	-12,256** (5,648)	-10,212* (5,433)	-9,727* (5,363)
Month, 04-2009	-7,938* (4,312)	-6,603 (4,355)	-6,904* (3,968)	-5,701 (4,402)
Month, 05-2009	-9,822** (4,426)	-9,689** (4,407)	-8,789** (4,092)	-8,619** (4,094)
Month, 06-2009	-6,790 (4,462)	-6,656 (4,447)	-5,759 (4,137)	-5,588 (4,149)
Month, 07-2009	-9,477** (4,546)	-9,342** (4,531)	-8,443** (4,224)	-8,271* (4,237)
Month, 08-2009	-7,404 (4,517)	-7,268 (4,505)	-6,373 (4,194)	-6,201 (4,213)
Month, 09-2009	-10,612** (4,655)	-10,478** (4,643)	-9,576** (4,356)	-9,405** (4,369)
Month, 10-2009	-9,269** (4,451)	-9,107** (4,433)	-8,198** (4,116)	-8,002* (4,131)
Month, 11-2009	-8,892** (4,388)	-8,684** (4,367)	-7,788* (4,036)	-7,552* (4,056)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	2.204 (1.836)	2.114 (1.804)	1.389 (2.414)	1.248 (2.349)

Interaction of Policy & Liquidity Constraint	0.441 (0.908)	0.453 (0.907)	0.242 (0.937)	0.272 (0.935)
Liquidity Constraint - 30% DSR Level	-3,920 (3,674)	-3,906 (3,673)	-3,780 (3,644)	-3,780 (3,642)
Policy Amount Lagged One Month	-1.191 (1.500)	-1.996 (1.899)	0.135 (1.814)	-0.513 (2.347)
Policy Amount Lagged Two Months		1.087 (1.000)		0.932 (1.273)
Total Long-Term Policy Effect		1.205 ----		1.667 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.226 (0.142)	-0.227 (0.142)	-0.219 (0.142)	-0.221 (0.142)
Age of CU reference person	-289.1 (372.3)	-297.0 (372.1)	-323.4 (369.5)	-331.0 (369.8)
Age-Squared of CU reference person	3.293 (3.142)	3.394 (3.137)	3.737 (3.153)	3.833 (3.147)
Change in # of Adults in CU Lagged One Month	-502.2 (1,131)	-361.5 (1,124)	-494.9 (1,133)	-375.8 (1,160)
Change in # of Children Under 18 in CU Lagged One Month	-1,654 (1,045)	-1,590 (1,047)	-1,636 (1,037)	-1,581 (1,057)
Month, 11-2008	-6,826 (5,956)	-7,395 (6,026)	-5,910 (5,517)	-6,369 (5,485)
Month, 12-2008	-3,084	-3,248	-2,015	-2,122

	(4,282)	(4,282)	(3,804)	(3,779)
Month, 01-2009	-9,731** (4,526)	-9,778** (4,531)	-8,331** (3,952)	-8,328** (3,951)
Month, 02-2009	-9,887** (4,325)	-9,534** (4,302)	-8,491** (3,696)	-8,144** (3,751)
Month, 03-2009	-12,414** (5,721)	-11,972** (5,633)	-9,983* (5,439)	-9,503* (5,366)
Month, 04-2009	-7,737* (4,311)	-6,412 (4,347)	-6,761* (3,980)	-5,571 (4,407)
Month, 05-2009	-9,609** (4,421)	-9,477** (4,400)	-8,634** (4,100)	-8,466** (4,102)
Month, 06-2009	-6,581 (4,507)	-6,449 (4,491)	-5,610 (4,184)	-5,441 (4,194)
Month, 07-2009	-9,247** (4,489)	-9,114** (4,474)	-8,272** (4,191)	-8,103* (4,204)
Month, 08-2009	-7,177 (4,574)	-7,044 (4,561)	-6,205 (4,250)	-6,036 (4,268)
Month, 09-2009	-10,384** (4,573)	-10,253** (4,559)	-9,410** (4,308)	-9,242** (4,320)
Month, 10-2009	-8,981** (4,451)	-8,823** (4,432)	-7,974* (4,131)	-7,782* (4,144)
Month, 11-2009	-8,618** (4,382)	-8,415* (4,359)	-7,581* (4,050)	-7,350* (4,068)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 26: Long-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.182*** (0.0566)	-0.173*** (0.0567)	-0.262*** (0.0721)	-0.229*** (0.0719)
Interaction of Policy & Liquidity Constraint	-0.0562 (0.0463)	-0.0546 (0.0460)	-0.0580 (0.0509)	-0.0611 (0.0508)
Liquidity Constraint - Zero Liquid Assets	-173.2 (171.4)	-181.9 (171.1)	-171.7 (175.8)	-176.1 (175.5)
Policy Amount Lagged One Month	0.184*** (0.0412)	0.281*** (0.0516)	0.284*** (0.0499)	0.419*** (0.0616)
Policy Amount Lagged Two Months		-0.135*** (0.0411)		-0.202*** (0.0495)
Total Long-Term Policy Effect		-0.026 ----		-0.012 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0230*** (0.00693)	-0.0223*** (0.00690)	-0.0223*** (0.00699)	-0.0214*** (0.00695)
Age of CU reference person	-18.95 (14.47)	-17.31 (14.35)	-21.77 (14.53)	-18.99 (14.37)
Age-Squared of CU reference person	0.249* (0.131)	0.228* (0.130)	0.285** (0.132)	0.250* (0.131)
Change in # of Adults in CU Lagged One Month	51.56 (52.20)	38.15 (51.52)	52.06 (52.51)	32.47 (51.65)

Change in # of Children Under 18 in CU Lagged One Month	4.792 (38.99)	-0.140 (38.78)	7.901 (39.20)	0.465 (39.25)
Month, 11-2008	-1,812*** (331.7)	-1,751*** (338.7)	-1,571*** (309.6)	-1,508*** (324.0)
Month, 12-2008	-1,721*** (322.4)	-1,719*** (328.8)	-1,437*** (304.6)	-1,464*** (317.7)
Month, 01-2009	-2,882*** (352.1)	-2,911*** (362.0)	-2,566*** (333.9)	-2,649*** (352.7)
Month, 02-2009	-3,155*** (334.5)	-3,243*** (344.7)	-2,852*** (315.7)	-3,028*** (335.7)
Month, 03-2009	-3,180*** (350.5)	-3,274*** (360.5)	-2,824*** (338.5)	-3,023*** (357.3)
Month, 04-2009	-3,177*** (338.5)	-3,331*** (351.5)	-2,888*** (321.0)	-3,163*** (344.4)
Month, 05-2009	-3,129*** (341.3)	-3,197*** (351.2)	-2,838*** (323.8)	-2,989*** (343.2)
Month, 06-2009	-3,141*** (339.7)	-3,211*** (349.6)	-2,851*** (321.8)	-3,003*** (341.2)
Month, 07-2009	-3,116*** (340.1)	-3,186*** (350.2)	-2,827*** (322.0)	-2,979*** (341.8)
Month, 08-2009	-3,018*** (341.4)	-3,086*** (351.1)	-2,726*** (324.6)	-2,876*** (343.8)
Month, 09-2009	-3,154*** (340.6)	-3,225*** (350.5)	-2,864*** (322.4)	-3,017*** (342.0)
Month, 10-2009	-3,318*** (339.4)	-3,389*** (349.5)	-3,028*** (321.1)	-3,183*** (340.9)
Month, 11-2009	-3,265*** (343.1)	-3,336*** (353.0)	-2,972*** (325.9)	-3,125*** (345.3)
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.219	0.221	0.219	0.221

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.229*** (0.0653)	-0.216*** (0.0653)	-0.304*** (0.0879)	-0.261*** (0.0876)
Interaction of Policy & Liquidity Constraint	0.0168 (0.0445)	0.0139 (0.0444)	0.00791 (0.0546)	-0.00427 (0.0548)
Liquidity Constraint - 30% DSR Level	-191.5* (105.8)	-191.3* (105.7)	-186.3* (109.5)	-180.1* (109.2)
Policy Amount Lagged One Month	0.193*** (0.0426)	0.293*** (0.0535)	0.296*** (0.0520)	0.436*** (0.0640)
Policy Amount Lagged Two Months		-0.139*** (0.0425)		-0.209*** (0.0511)
Total Long-Term Policy Effect		-0.062 ----		-0.034 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0238*** (0.00722)	-0.0230*** (0.00718)	-0.0230*** (0.00726)	-0.0219*** (0.00722)
Age of CU reference person	-21.08 (15.06)	-19.38 (14.93)	-24.09 (15.09)	-21.32 (14.89)
Age-Squared of CU reference person	0.272** (0.137)	0.250* (0.135)	0.310** (0.137)	0.275** (0.135)
Change in # of Adults in CU Lagged One Month	57.33 (54.44)	43.33 (53.68)	57.69 (54.62)	36.94 (53.62)
Change in # of Children Under 18 in CU Lagged One Month	6.074 (40.19)	0.887 (39.97)	9.344 (40.41)	1.544 (40.39)

Month, 11-2008	-1,849*** (339.2)	-1,784*** (346.3)	-1,604*** (317.0)	-1,536*** (331.4)
Month, 12-2008	-1,759*** (329.1)	-1,756*** (335.4)	-1,469*** (311.4)	-1,495*** (324.1)
Month, 01-2009	-2,943*** (358.3)	-2,969*** (368.2)	-2,622*** (340.2)	-2,701*** (358.7)
Month, 02-2009	-3,222*** (339.6)	-3,309*** (349.8)	-2,916*** (321.3)	-3,091*** (340.7)
Month, 03-2009	-3,245*** (356.2)	-3,339*** (366.1)	-2,885*** (344.9)	-3,084*** (363.1)
Month, 04-2009	-3,245*** (343.8)	-3,402*** (356.7)	-2,955*** (326.8)	-3,232*** (349.7)
Month, 05-2009	-3,193*** (346.9)	-3,260*** (356.7)	-2,901*** (330.0)	-3,050*** (349.0)
Month, 06-2009	-3,207*** (345.2)	-3,277*** (354.9)	-2,916*** (327.9)	-3,068*** (347.0)
Month, 07-2009	-3,179*** (345.5)	-3,248*** (355.5)	-2,890*** (328.0)	-3,040*** (347.4)
Month, 08-2009	-3,077*** (346.9)	-3,144*** (356.5)	-2,785*** (331.0)	-2,933*** (349.7)
Month, 09-2009	-3,216*** (345.8)	-3,286*** (355.6)	-2,926*** (328.2)	-3,078*** (347.4)
Month, 10-2009	-3,382*** (344.4)	-3,452*** (354.4)	-3,091*** (326.5)	-3,244*** (345.9)
Month, 11-2009	-3,331*** (348.2)	-3,400*** (357.9)	-3,036*** (331.6)	-3,188*** (350.6)
Observations	5,836	5,836	5,836	5,836
Number of CUs	1,268	1,268	1,268	1,268
R-Squared	0.219	0.221	0.219	0.221

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0759 (0.0521)	-0.0821 (0.0519)	-0.101 (0.0628)	-0.114* (0.0625)

Interaction of Policy & Liquidity Constraint	-0.0282 (0.0285)	-0.0270 (0.0284)	-0.0527* (0.0312)	-0.0500 (0.0311)
Liquidity Constraint - Zero Liquid Assets	-50.87 (120.0)	-48.80 (119.5)	-14.56 (122.0)	-13.55 (121.5)
Policy Amount Lagged One Month	0.157*** (0.0425)	0.101** (0.0511)	0.241*** (0.0496)	0.180*** (0.0596)
Policy Amount Lagged Two Months		0.0752** (0.0327)		0.0878** (0.0405)
Total Long-Term Policy Effect		0.094*** ----		0.154*** ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0671*** (0.00942)	-0.0672*** (0.00945)	-0.0669*** (0.00940)	-0.0670*** (0.00943)
Age of CU reference person	-10.45 (23.61)	-11.01 (23.67)	-12.59 (23.52)	-13.34 (23.59)
Age-Squared of CU reference person	0.223 (0.199)	0.230 (0.200)	0.252 (0.199)	0.262 (0.199)
Change in # of Adults in CU Lagged One Month	60.67 (41.43)	70.43* (42.34)	63.02 (41.37)	74.28* (42.75)
Change in # of Children Under 18 in CU Lagged One Month	17.55 (31.67)	22.06 (31.24)	19.70 (31.67)	24.91 (31.19)
Month, 11-2008	-665.0*** (205.0)	-704.3*** (207.9)	-606.3*** (208.1)	-649.5*** (211.3)

Month, 12-2008	-397.6** (187.0)	-408.9** (187.4)	-329.1* (191.1)	-339.2* (191.6)
Month, 01-2009	-2,072*** (201.5)	-2,075*** (201.7)	-1,982*** (206.3)	-1,981*** (206.4)
Month, 02-2009	-1,651*** (185.2)	-1,626*** (184.6)	-1,561*** (190.0)	-1,528*** (189.3)
Month, 03-2009	-1,492*** (201.6)	-1,461*** (201.1)	-1,361*** (213.7)	-1,315*** (213.2)
Month, 04-2009	-1,220*** (187.0)	-1,128*** (187.9)	-1,181*** (190.7)	-1,069*** (193.1)
Month, 05-2009	-1,242*** (186.4)	-1,233*** (186.1)	-1,204*** (190.1)	-1,188*** (189.8)
Month, 06-2009	-1,239*** (185.8)	-1,229*** (185.5)	-1,200*** (189.5)	-1,184*** (189.2)
Month, 07-2009	-1,171*** (189.1)	-1,162*** (188.9)	-1,133*** (192.7)	-1,117*** (192.5)
Month, 08-2009	-1,238*** (190.4)	-1,229*** (190.2)	-1,199*** (194.2)	-1,183*** (193.9)
Month, 09-2009	-1,343*** (188.8)	-1,334*** (188.5)	-1,304*** (192.1)	-1,288*** (191.8)
Month, 10-2009	-1,270*** (188.8)	-1,258*** (188.4)	-1,229*** (192.8)	-1,210*** (192.3)
Month, 11-2009	-1,187*** (195.0)	-1,173*** (194.6)	-1,144*** (198.5)	-1,122*** (198.1)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.090	0.090	0.090	0.090

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0888* (0.0521)	-0.0951* (0.0518)	-0.0999 (0.0649)	-0.113* (0.0644)

Interaction of Policy & Liquidity Constraint	8.97e-05 (0.0274)	0.000932 (0.0272)	-0.0399 (0.0310)	-0.0371 (0.0308)
Liquidity Constraint - 30% DSR Level	-105.6* (59.44)	-104.6* (59.35)	-79.42 (59.12)	-79.41 (59.00)
Policy Amount Lagged One Month	0.157*** (0.0424)	0.102** (0.0511)	0.242*** (0.0495)	0.181*** (0.0596)
Policy Amount Lagged Two Months		0.0753** (0.0327)		0.0879** (0.0405)
Total Long-Term Policy Effect		0.082*** ----		0.155*** ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0672*** (0.00943)	-0.0673*** (0.00945)	-0.0668*** (0.00939)	-0.0669*** (0.00941)
Age of CU reference person	-11.07 (23.61)	-11.62 (23.66)	-13.58 (23.53)	-14.30 (23.59)
Age-Squared of CU reference person	0.228 (0.199)	0.235 (0.200)	0.261 (0.199)	0.270 (0.199)
Change in # of Adults in CU Lagged One Month	62.38 (41.42)	72.12* (42.32)	64.73 (41.30)	75.97* (42.68)
Change in # of Children Under 18 in CU Lagged One Month	18.30 (31.60)	22.77 (31.18)	20.96 (31.54)	26.10 (31.07)
Month, 11-2008	-665.2*** (205.0)	-704.6*** (207.8)	-606.8*** (208.1)	-650.1*** (211.2)
Month, 12-2008	-397.1**	-408.5**	-328.8*	-339.0*

	(187.0)	(187.4)	(191.1)	(191.6)
Month, 01-2009	-2,067*** (201.5)	-2,071*** (201.6)	-1,978*** (206.2)	-1,978*** (206.3)
Month, 02-2009	-1,644*** (185.3)	-1,619*** (184.6)	-1,556*** (190.0)	-1,523*** (189.3)
Month, 03-2009	-1,484*** (201.7)	-1,453*** (201.1)	-1,354*** (213.7)	-1,309*** (213.1)
Month, 04-2009	-1,214*** (187.2)	-1,123*** (188.1)	-1,178*** (190.8)	-1,066*** (193.1)
Month, 05-2009	-1,236*** (186.6)	-1,227*** (186.3)	-1,200*** (190.2)	-1,184*** (189.9)
Month, 06-2009	-1,232*** (185.9)	-1,223*** (185.6)	-1,197*** (189.5)	-1,181*** (189.2)
Month, 07-2009	-1,164*** (189.4)	-1,155*** (189.2)	-1,128*** (192.8)	-1,112*** (192.5)
Month, 08-2009	-1,230*** (190.5)	-1,221*** (190.2)	-1,194*** (194.2)	-1,178*** (193.8)
Month, 09-2009	-1,333*** (188.9)	-1,324*** (188.6)	-1,297*** (192.1)	-1,281*** (191.8)
Month, 10-2009	-1,257*** (189.0)	-1,246*** (188.6)	-1,219*** (192.8)	-1,201*** (192.3)
Month, 11-2009	-1,175*** (195.0)	-1,161*** (194.7)	-1,135*** (198.4)	-1,113*** (198.1)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.090	0.090	0.090	0.090

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 27: Long-Run Effect of the MWPTC (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.200 (0.180)	0.202 (0.181)	0.142 (0.216)	0.146 (0.218)
Interaction of Policy & Liquidity Constraint	-0.156 (0.180)	-0.156 (0.180)	-0.110 (0.187)	-0.110 (0.187)
Liquidity Constraint - Zero Liquid Assets	349.4 (550.2)	349.0 (550.2)	291.2 (560.3)	290.8 (560.5)
Policy Amount Lagged One Month	-0.321** (0.147)	-0.308* (0.176)	-0.347** (0.167)	-0.330* (0.192)
Policy Amount Lagged Two Months		-0.0169 (0.127)		-0.0243 (0.140)
Total Long-Term Policy Effect		-0.123 ----		-0.208 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.00309 (0.0261)	0.00313 (0.0261)	0.00293 (0.0262)	0.00298 (0.0262)
Age of CU reference person	-57.04 (61.32)	-56.93 (61.34)	-57.36 (61.59)	-57.16 (61.64)
Age-Squared of CU reference person	0.512 (0.556)	0.511 (0.557)	0.509 (0.560)	0.506 (0.560)
Change in # of Adults in CU Lagged One Month	70.57 (125.4)	68.60 (124.0)	67.82 (125.6)	64.97 (124.6)

Change in # of Children Under 18 in CU Lagged One Month	87.56 (126.2)	86.50 (127.0)	85.30 (126.7)	83.77 (127.3)
Month, 11-2008	1,225*** (427.4)	1,238*** (444.3)	1,196*** (421.1)	1,215*** (437.8)
Month, 12-2008	1,792*** (371.9)	1,799*** (376.9)	1,739*** (371.3)	1,749*** (377.3)
Month, 01-2009	1,408*** (449.3)	1,411*** (452.7)	1,355*** (447.2)	1,358*** (449.8)
Month, 02-2009	249.0 (320.9)	244.2 (321.7)	224.0 (324.8)	216.2 (329.2)
Month, 03-2009	-249.2 (343.0)	-254.2 (344.7)	-232.4 (371.3)	-241.5 (377.2)
Month, 04-2009	520.0 (344.5)	498.4 (372.9)	568.5 (363.2)	535.8 (408.7)
Month, 05-2009	-6.073 (295.3)	-8.019 (296.3)	32.47 (313.4)	28.53 (316.3)
Month, 06-2009	562.7* (333.4)	561.7* (333.8)	612.2* (353.3)	609.6* (354.7)
Month, 07-2009	339.2 (336.6)	337.6 (337.1)	384.8 (354.4)	381.3 (356.3)
Month, 08-2009	291.8 (328.2)	290.4 (329.3)	338.6 (347.8)	335.5 (350.6)
Month, 09-2009	298.6 (317.8)	297.2 (318.6)	343.5 (335.3)	340.4 (337.5)
Month, 10-2009	58.79 (332.9)	57.04 (333.8)	98.23 (350.3)	94.55 (352.9)
Month, 11-2009	239.2 (360.5)	236.6 (361.8)	278.7 (381.0)	273.7 (384.6)
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.038	0.038	0.038	0.038

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0216 (0.228)	-0.0202 (0.229)	-0.100 (0.284)	-0.0967 (0.285)
Interaction of Policy & Liquidity Constraint	0.188 (0.150)	0.188 (0.150)	0.248 (0.174)	0.247 (0.174)
Liquidity Constraint - 30% DSR Level	-454.4 (323.4)	-454.2 (323.4)	-508.6 (335.6)	-508.0 (335.5)
Policy Amount Lagged One Month	-0.330** (0.150)	-0.321* (0.180)	-0.358** (0.172)	-0.344* (0.198)
Policy Amount Lagged Two Months		-0.0129 (0.129)		-0.0199 (0.144)
Total Long-Term Policy Effect		-0.354* ----		-0.461* ----
Permanent Monthly After-Tax Income, Lagged One Month	0.00205 (0.0267)	0.00208 (0.0267)	0.00149 (0.0270)	0.00153 (0.0270)
Age of CU reference person	-59.68 (62.93)	-59.59 (62.95)	-60.23 (63.56)	-60.07 (63.60)
Age-Squared of CU reference person	0.535 (0.571)	0.534 (0.571)	0.534 (0.577)	0.532 (0.578)
Change in # of Adults in CU Lagged One Month	82.15 (127.3)	80.65 (125.9)	80.97 (128.2)	78.64 (127.1)
Change in # of Children Under 18 in CU Lagged One Month	87.92 (128.8)	87.12 (129.7)	85.70 (129.9)	84.46 (130.6)

Month, 11-2008	1,241*** (427.1)	1,251*** (443.1)	1,223*** (425.0)	1,239*** (441.0)
Month, 12-2008	1,806*** (373.4)	1,811*** (378.0)	1,772*** (376.2)	1,779*** (381.8)
Month, 01-2009	1,453*** (453.3)	1,455*** (456.5)	1,414*** (455.3)	1,417*** (457.7)
Month, 02-2009	261.9 (321.9)	258.3 (322.5)	241.5 (329.2)	235.2 (333.4)
Month, 03-2009	-217.1 (347.5)	-220.9 (349.0)	-208.4 (380.5)	-215.9 (386.1)
Month, 04-2009	580.4* (351.6)	563.6 (380.2)	625.1* (376.1)	598.1 (422.4)
Month, 05-2009	36.60 (298.6)	35.15 (299.3)	67.84 (321.1)	64.67 (323.5)
Month, 06-2009	620.8* (341.3)	620.1* (341.5)	667.7* (366.6)	665.6* (367.7)
Month, 07-2009	395.6 (342.7)	394.4 (343.0)	435.7 (365.5)	432.9 (367.1)
Month, 08-2009	344.9 (333.3)	343.8 (334.1)	385.7 (357.9)	383.2 (360.3)
Month, 09-2009	344.2 (322.0)	343.2 (322.6)	383.8 (344.0)	381.3 (345.8)
Month, 10-2009	104.8 (338.2)	103.5 (338.9)	137.7 (360.0)	134.8 (362.3)
Month, 11-2009	284.0 (365.2)	282.1 (366.2)	319.6 (390.9)	315.6 (394.1)
Observations	4,349	4,349	4,349	4,349
Number of CUs	1,153	1,153	1,153	1,153
R-Squared	0.038	0.038	0.038	0.038

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0246 (0.227)	-0.0108 (0.223)	-0.126 (0.347)	-0.0994 (0.342)

Interaction of Policy & Liquidity Constraint	-0.215** (0.109)	-0.218** (0.109)	-0.195* (0.117)	-0.201* (0.117)
Liquidity Constraint - Zero Liquid Assets	-285.8 (594.1)	-290.4 (594.4)	-305.4 (601.1)	-307.6 (601.9)
Policy Amount Lagged One Month	0.308** (0.156)	0.432* (0.243)	0.390* (0.217)	0.519* (0.297)
Policy Amount Lagged Two Months		-0.167 (0.189)		-0.186 (0.205)
Total Long-Term Policy Effect		0.254 ----		0.234 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0638** (0.0295)	-0.0635** (0.0295)	-0.0632** (0.0295)	-0.0630** (0.0295)
Age of CU reference person	-29.33 (81.44)	-28.07 (81.43)	-31.24 (81.39)	-29.65 (81.31)
Age-Squared of CU reference person	0.345 (0.695)	0.329 (0.695)	0.368 (0.696)	0.348 (0.696)
Change in # of Adults in CU Lagged One Month	-163.9 (208.1)	-185.5 (207.4)	-166.2 (208.4)	-190.0 (209.0)
Change in # of Children Under 18 in CU Lagged One Month	-137.6 (216.0)	-147.6 (215.8)	-138.2 (216.5)	-149.3 (216.3)
Month, 11-2008	-255.2 (889.7)	-167.9 (890.2)	-199.1 (883.8)	-107.4 (880.8)

Month, 12-2008	285.8 (780.5)	311.0 (774.6)	351.5 (778.4)	372.8 (774.1)
Month, 01-2009	-379.7 (786.3)	-372.6 (786.3)	-293.6 (789.3)	-294.4 (789.6)
Month, 02-2009	22.57 (768.9)	-31.89 (771.8)	108.7 (764.7)	39.29 (770.1)
Month, 03-2009	89.26 (913.6)	21.31 (912.7)	276.3 (1,026)	180.5 (1,028)
Month, 04-2009	122.3 (792.9)	-81.09 (828.1)	219.5 (833.7)	-18.02 (885.9)
Month, 05-2009	-143.7 (778.3)	-164.0 (779.4)	-46.42 (819.5)	-79.96 (822.5)
Month, 06-2009	547.9 (800.4)	527.6 (801.0)	645.1 (840.5)	611.5 (842.8)
Month, 07-2009	-79.53 (761.6)	-100.1 (762.4)	17.84 (793.4)	-16.05 (796.0)
Month, 08-2009	-49.51 (842.1)	-70.15 (843.1)	47.59 (889.5)	13.63 (892.6)
Month, 09-2009	-233.9 (799.1)	-254.4 (800.0)	-136.6 (841.8)	-170.4 (844.7)
Month, 10-2009	443.0 (808.7)	418.3 (810.8)	542.7 (849.1)	503.9 (853.5)
Month, 11-2009	-41.16 (823.7)	-72.73 (825.1)	59.95 (866.1)	13.42 (870.0)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.331 (0.240)	-0.317 (0.236)	-0.404 (0.381)	-0.377 (0.376)

Interaction of Policy & Liquidity Constraint	0.274*** (0.0972)	0.273*** (0.0971)	0.277** (0.134)	0.272** (0.133)
Liquidity Constraint - 30% DSR Level	-197.4 (245.8)	-199.5 (246.7)	-198.4 (255.1)	-198.4 (255.7)
Policy Amount Lagged One Month	0.319** (0.157)	0.439* (0.244)	0.401* (0.218)	0.525* (0.297)
Policy Amount Lagged Two Months		-0.162 (0.189)		-0.179 (0.205)
Total Long-Term Policy Effect		-0.041 ----		-0.031 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0643** (0.0295)	-0.0640** (0.0295)	-0.0638** (0.0294)	-0.0636** (0.0294)
Age of CU reference person	-29.91 (81.60)	-28.72 (81.58)	-31.84 (81.60)	-30.39 (81.53)
Age-Squared of CU reference person	0.349 (0.696)	0.334 (0.696)	0.374 (0.698)	0.355 (0.697)
Change in # of Adults in CU Lagged One Month	-162.5 (208.2)	-183.5 (207.4)	-163.1 (208.3)	-186.0 (208.9)
Change in # of Children Under 18 in CU Lagged One Month	-131.5 (215.2)	-141.1 (214.9)	-131.2 (215.7)	-141.7 (215.5)
Month, 11-2008	-249.8 (889.4)	-165.0 (889.9)	-193.2 (883.7)	-104.8 (880.7)
Month, 12-2008	296.7	321.2	362.7	383.4

	(780.9)	(774.9)	(779.1)	(774.7)
Month, 01-2009	-359.3 (787.2)	-352.2 (787.3)	-272.5 (790.9)	-273.2 (791.1)
Month, 02-2009	48.15 (769.6)	-4.469 (772.6)	134.9 (766.0)	68.12 (771.6)
Month, 03-2009	135.3 (917.4)	69.43 (916.3)	300.1 (1,030)	207.8 (1,032)
Month, 04-2009	162.6 (795.4)	-34.74 (830.2)	237.4 (836.9)	8.339 (889.4)
Month, 05-2009	-100.9 (780.7)	-120.6 (781.8)	-26.19 (822.8)	-58.51 (825.8)
Month, 06-2009	593.2 (803.1)	573.5 (803.7)	667.9 (844.0)	635.4 (846.4)
Month, 07-2009	-33.48 (763.7)	-53.33 (764.5)	41.25 (796.2)	8.699 (798.9)
Month, 08-2009	1.074 (845.3)	-18.79 (846.3)	75.55 (893.5)	43.01 (896.6)
Month, 09-2009	-175.2 (802.0)	-194.8 (802.9)	-100.5 (845.7)	-132.8 (848.7)
Month, 10-2009	510.2 (813.0)	486.6 (815.1)	587.1 (854.4)	550.1 (858.9)
Month, 11-2009	30.87 (827.1)	0.644 (828.6)	109.6 (871.3)	65.13 (875.4)
Observations	14,771	14,771	14,771	14,771
Number of CUs	1,277	1,277	1,277	1,277
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter four 2009 (i.e. October 2008 to December 2009). The reference month-year is October 2008. All households in the sample had values of the MWPTC imputed for months March 2009 through December 2009 based on the receipt qualifications.

Table 28: Short-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.134 (0.108)	-0.00521 (0.0165)	0.0196 (0.0416)	-0.0118 (0.0256)
Interaction of Policy & Liquidity Constraint	-0.0352 (0.0282)	0.0264 (0.0248)	-0.0238 (0.0421)	0.0324 (0.0298)
Liquidity Constraint - Zero Liquid Assets	-504.1 (460.4)		-504.8 (460.2)	
Liquidity Constraint - 30% DSR Level		-273.8 (381.8)		-276.9 (382.3)
Total Effect From Liquidity Constrained Households	0.099 ----	0.021 ----	-0.004 ----	0.02 ----
Permanent Monthly After- Tax Income, Lagged One Month	-0.00703 (0.0274)	-0.00682 (0.0281)	-0.00704 (0.0274)	-0.00709 (0.0281)
Age of CU reference person	-99.51* (53.86)	-102.7* (55.24)	-99.67* (53.86)	-102.7* (55.23)
Age-Squared of CU reference person	1.139** (0.498)	1.176** (0.511)	1.140** (0.498)	1.176** (0.511)

Change in # of Adults in CU Lagged One Month	126.9 (122.7)	130.1 (125.9)	126.4 (122.7)	130.1 (125.9)
Change in # of Children Under 18 in CU Lagged One Month	-79.37 (144.6)	-77.62 (148.3)	-80.72 (144.6)	-78.91 (148.4)
Month, 11-2009	-3,724*** (663.3)	-3,810*** (675.7)	-3,720*** (662.8)	-3,808*** (675.4)
Month, 12-2009	-1,599** (671.8)	-1,639** (685.0)	-1,596** (671.1)	-1,637** (684.6)
Month, 01-2010	-4,770*** (697.1)	-4,850*** (709.1)	-4,765*** (696.5)	-4,847*** (708.8)
Month, 02-2010	-6,631*** (628.5)	-6,753*** (637.7)	-6,620*** (628.6)	-6,744*** (638.2)
Month, 03-2010	-7,622*** (603.6)	-7,757*** (611.1)	-7,609*** (603.9)	-7,749*** (611.3)
Month, 04-2010	-7,424*** (603.6)	-7,555*** (611.1)	-7,413*** (603.5)	-7,547*** (611.4)
Month, 05-2010	-7,476*** (610.7)	-7,604*** (617.6)	-7,468*** (610.3)	-7,600*** (617.5)
Month, 06-2010	-7,447*** (606.7)	-7,570*** (613.9)	-7,439*** (606.4)	-7,566*** (613.7)
Month, 07-2010	-7,419*** (611.0)	-7,531*** (617.3)	-7,412*** (610.7)	-7,526*** (617.2)
Month, 08-2010	-7,244*** (623.3)	-7,340*** (628.2)	-7,236*** (622.9)	-7,336*** (628.2)
Month, 09-2010	-7,401*** (646.6)	-7,498*** (654.2)	-7,393*** (646.3)	-7,494*** (654.1)
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.114	0.114	0.114	0.114

Panel B. The Level Amount of Total Consumption Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.0568 (0.0621)	-0.00279 (0.0164)	0.00451 (0.0544)	0.0346 (0.0230)

Interaction of Policy & Liquidity Constraint	0.0577 (0.0633)	-0.0366 (0.0513)	-0.00328 (0.0563)	-0.0736 (0.0611)
Liquidity Constraint - Zero Liquid Assets	-400.3 (584.4)		-393.6 (584.5)	
Liquidity Constraint - 30% DSR Level		-1,486* (884.3)		-1,468* (884.6)
Total Effect From Liquidity Constrained Households	0.001 ----	0.004 ----	0.002 ----	-0.039 ----
Permanent Monthly After- Tax Income, Lagged One Month	-0.381** (0.156)	-0.381** (0.156)	-0.381** (0.156)	-0.380** (0.156)
Age of CU reference person	-35.89 (227.4)	-36.54 (227.4)	-35.15 (227.4)	-36.08 (227.4)
Age-Squared of CU reference person	0.542 (2.274)	0.554 (2.274)	0.538 (2.274)	0.553 (2.274)
Change in # of Adults in CU Lagged One Month	657.4 (494.4)	663.9 (494.4)	658.5 (494.6)	663.8 (494.4)
Change in # of Children Under 18 in CU Lagged One Month	737.1	739.4	744.3	749.0

	(1,226)	(1,227)	(1,226)	(1,226)
Month, 11-2009	-4,175	-4,200	-4,178	-4,202
	(2,912)	(2,912)	(2,912)	(2,912)
Month, 12-2009	-1,870	-1,915	-1,874	-1,917
	(2,212)	(2,216)	(2,212)	(2,216)
Month, 01-2010	-8,283***	-8,233***	-8,288***	-8,237***
	(2,201)	(2,201)	(2,201)	(2,201)
Month, 02-2010	-7,693***	-7,624***	-7,730***	-7,665***
	(2,104)	(2,102)	(2,106)	(2,104)
Month, 03-2010	-7,396***	-7,303***	-7,433***	-7,335***
	(1,995)	(1,993)	(1,994)	(1,993)
Month, 04-2010	-4,851**	-4,760**	-4,884**	-4,791**
	(1,976)	(1,972)	(1,976)	(1,972)
Month, 05-2010	-5,362***	-5,267***	-5,366***	-5,270***
	(1,995)	(1,993)	(1,995)	(1,993)
Month, 06-2010	-5,890***	-5,787***	-5,894***	-5,790***
	(1,983)	(1,977)	(1,983)	(1,977)
Month, 07-2010	-4,706**	-4,580**	-4,711**	-4,583**
	(2,006)	(2,001)	(2,006)	(2,001)
Month, 08-2010	-6,130***	-5,996***	-6,137***	-6,001***
	(2,078)	(2,071)	(2,078)	(2,071)
Month, 09-2010	-5,821**	-5,677**	-5,830**	-5,684**
	(2,501)	(2,488)	(2,501)	(2,488)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 29: Short-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.00738 (0.0365)	-0.000506 (0.00463)	0.00987 (0.00754)	0.00937 (0.00687)
Interaction of Policy & Liquidity Constraint	0.00682 (0.00621)	0.00637 (0.00605)	-0.00363 (0.00793)	-0.00266 (0.00753)
Liquidity Constraint - Zero Liquid Assets	-136.4 (97.75)		-135.5 (97.91)	
Liquidity Constraint - 30% DSR Level		-62.26 (77.51)		-58.05 (77.55)
Total Effect From Liquidity Constrained Households	0.000 ----	0.005 ----	0.006 ----	0.006 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.00871 (0.00649)	-0.00892 (0.00658)	-0.00860 (0.00650)	-0.00856 (0.00655)
Age of CU reference person	-5.610 (10.87)	-6.044 (11.00)	-5.598 (10.90)	-5.715 (11.01)
Age-Squared of CU reference person	0.0866 (0.0993)	0.0916 (0.101)	0.0872 (0.0996)	0.0892 (0.101)

Change in # of Adults in CU Lagged One Month	54.48** (27.54)	54.73** (27.91)	54.20* (27.70)	54.41* (27.93)
Change in # of Children Under 18 in CU Lagged One Month	-42.11 (30.12)	-42.82 (30.35)	-41.15 (30.18)	-41.06 (30.44)
Month, 11-2009	-1,037*** (146.6)	-1,039*** (146.4)	-1,043*** (147.4)	-1,048*** (147.2)
Month, 12-2009	-476.8*** (149.9)	-476.6*** (149.7)	-480.2*** (150.6)	-483.4*** (150.5)
Month, 01-2010	-1,757*** (143.9)	-1,759*** (143.1)	-1,766*** (144.6)	-1,769*** (144.0)
Month, 02-2010	-1,961*** (136.4)	-1,961*** (135.4)	-1,975*** (137.3)	-1,978*** (136.6)
Month, 03-2010	-2,090*** (131.7)	-2,091*** (130.4)	-2,102*** (132.6)	-2,106*** (131.5)
Month, 04-2010	-1,993*** (132.3)	-1,993*** (131.0)	-2,007*** (133.3)	-2,008*** (132.2)
Month, 05-2010	-1,979*** (134.6)	-1,978*** (133.3)	-1,988*** (135.5)	-1,989*** (134.4)
Month, 06-2010	-1,991*** (133.8)	-1,987*** (132.3)	-2,000*** (134.6)	-1,999*** (133.4)
Month, 07-2010	-2,012*** (134.7)	-2,008*** (133.2)	-2,022*** (135.6)	-2,020*** (134.3)
Month, 08-2010	-1,976*** (135.5)	-1,969*** (133.8)	-1,985*** (136.3)	-1,980*** (134.8)
Month, 09-2010	-2,061*** (141.4)	-2,055*** (140.0)	-2,072*** (142.3)	-2,066*** (141.0)
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

Panel B. The Level Amount of Nondurable Goods Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.00168 (0.00191)	0.000934 (0.00110)	0.00900 (0.00783)	0.00542 (0.00472)

Interaction of Policy & Liquidity Constraint	-0.000802 (0.00220)	0.000474 (0.00211)	-0.00808 (0.00790)	-0.00396 (0.00503)
Liquidity Constraint - Zero Liquid Assets	6.107 (48.06)		6.903 (48.05)	
Liquidity Constraint - 30% DSR Level		-93.45* (54.36)		-91.26* (54.42)
Total Effect From Liquidity Constrained Households	0.001 ----	0.001 ----	0.001 ----	0.001 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0294*** (0.00637)	-0.0293*** (0.00637)	-0.0293*** (0.00637)	-0.0292*** (0.00637)
Age of CU reference person	-36.90*** (11.96)	-37.03*** (11.96)	-36.81*** (11.96)	-36.97*** (11.96)
Age-Squared of CU reference person	0.430*** (0.112)	0.432*** (0.112)	0.430*** (0.112)	0.432*** (0.112)
Change in # of Adults in CU Lagged One Month	16.11 (24.28)	16.60 (24.27)	16.23 (24.29)	16.60 (24.27)
Change in # of Children Under 18 in CU Lagged One Month	27.44	27.62	28.30	28.77

	(24.24)	(24.24)	(24.25)	(24.26)
Month, 11-2009	-255.2**	-256.8**	-255.6**	-257.0**
	(124.9)	(125.0)	(124.9)	(125.0)
Month, 12-2009	221.9**	219.0**	221.4**	218.7**
	(98.73)	(98.76)	(98.73)	(98.76)
Month, 01-2010	-1,510***	-1,507***	-1,510***	-1,507***
	(105.1)	(105.0)	(105.1)	(105.0)
Month, 02-2010	-1,012***	-1,008***	-1,017***	-1,013***
	(99.27)	(99.13)	(99.38)	(99.25)
Month, 03-2010	-1,040***	-1,035***	-1,045***	-1,039***
	(100.2)	(100.1)	(100.3)	(100.1)
Month, 04-2010	-617.2***	-612.3***	-621.3***	-616.1***
	(97.42)	(97.27)	(97.12)	(96.98)
Month, 05-2010	-631.8***	-627.0***	-632.3***	-627.4***
	(93.40)	(93.23)	(93.45)	(93.27)
Month, 06-2010	-585.6***	-580.9***	-586.1***	-581.2***
	(95.06)	(94.83)	(95.06)	(94.83)
Month, 07-2010	-620.2***	-614.7***	-620.8***	-615.1***
	(98.02)	(97.61)	(98.03)	(97.61)
Month, 08-2010	-620.7***	-615.1***	-621.5***	-615.7***
	(93.90)	(93.48)	(93.91)	(93.48)
Month, 09-2010	-767.3***	-761.7***	-768.3***	-762.6***
	(96.69)	(96.09)	(96.69)	(96.10)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 30: Short-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.0334* (0.0202)	0.0112* (0.00619)	0.0113 (0.0122)	0.0121 (0.0120)
Interaction of Policy & Liquidity Constraint	-0.00110 (0.0101)	-0.00212 (0.00805)	-0.00210 (0.0151)	-0.00291 (0.0122)
Liquidity Constraint - Zero Liquid Assets	326.4 (283.4)		326.4 (283.4)	
Liquidity Constraint - 30% DSR Level		-320.0 (236.0)		-319.5 (236.1)
Total Effect From Liquidity Constrained Households	0.032 ----	0.009 ----	0.009 ----	0.009 ----
Permanent Monthly After- Tax Income, Lagged One Month	0.0141 (0.0186)	0.0132 (0.0188)	0.0141 (0.0186)	0.0132 (0.0188)
Age of CU reference person	-25.74 (34.94)	-25.92 (35.45)	-25.73 (34.94)	-25.93 (35.46)
Age-Squared of CU reference person	0.201 (0.333)	0.203 (0.337)	0.201 (0.333)	0.203 (0.337)

Change in # of Adults in CU Lagged One Month	105.6 (71.23)	109.5 (71.92)	105.6 (71.23)	109.5 (71.93)
Change in # of Children Under 18 in CU Lagged One Month	-5.941 (82.25)	-2.329 (82.64)	-5.725 (82.17)	-2.012 (82.56)
Month, 11-2009	695.7*** (165.0)	700.1*** (165.7)	696.0*** (165.1)	700.4*** (165.9)
Month, 12-2009	1,630*** (179.9)	1,629*** (180.9)	1,630*** (179.9)	1,629*** (181.0)
Month, 01-2010	1,037*** (220.1)	1,065*** (223.2)	1,037*** (220.2)	1,065*** (223.3)
Month, 02-2010	325.1** (145.8)	340.2** (147.2)	324.7** (145.7)	339.4** (147.3)
Month, 03-2010	212.5 (140.8)	231.7 (142.4)	211.9 (141.4)	231.2 (143.0)
Month, 04-2010	137.4 (135.5)	147.4 (136.1)	137.0 (135.7)	147.0 (136.3)
Month, 05-2010	261.2* (135.9)	271.9** (136.2)	261.2* (136.0)	271.9** (136.3)
Month, 06-2010	373.1** (145.4)	381.2*** (145.4)	373.1** (145.4)	381.2*** (145.4)
Month, 07-2010	319.0** (154.5)	323.0** (154.6)	319.0** (154.6)	323.0** (154.7)
Month, 08-2010	223.7 (157.2)	221.9 (156.8)	223.7 (157.2)	221.8 (156.8)
Month, 09-2010	321.2 (218.0)	315.4 (215.2)	321.1 (218.0)	315.2 (215.3)
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.030	0.030	0.030

Panel B. The Level Amount of Durable Goods Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.00834 (0.0107)	-0.0156 (0.0146)	0.0156 (0.0163)	-0.0117 (0.0134)

Interaction of Policy & Liquidity Constraint	-0.0214 (0.0164)	0.0231 (0.0165)	-0.0286 (0.0237)	0.0193 (0.0154)
Liquidity Constraint - Zero Liquid Assets	-29.37 (120.5)		-28.58 (120.5)	
Liquidity Constraint - 30% DSR Level		247.7 (171.0)		249.6 (170.9)
Total Effect From Liquidity Constrained Households	-0.013 ----	0.007 ----	-0.013 ----	0.007 ----
Permanent Monthly After- Tax Income, Lagged One Month	-0.0187 (0.0193)	-0.0186 (0.0193)	-0.0187 (0.0193)	-0.0185 (0.0193)
Age of CU reference person	-60.42 (44.10)	-60.36 (44.09)	-60.33 (44.11)	-60.31 (44.09)
Age-Squared of CU reference person	0.579 (0.408)	0.578 (0.408)	0.579 (0.408)	0.578 (0.408)
Change in # of Adults in CU Lagged One Month	31.32 (98.81)	30.25 (98.49)	31.44 (98.80)	30.25 (98.49)
Change in # of Children Under 18 in CU Lagged One Month	85.61	85.30	86.46	86.29

	(79.30)	(79.35)	(79.26)	(79.31)
Month, 11-2009	73.76	78.30	73.45	78.10
	(301.0)	(300.9)	(300.9)	(300.9)
Month, 12-2009	249.2	257.9	248.7	257.6
	(260.6)	(261.2)	(260.6)	(261.2)
Month, 01-2010	-658.6***	-665.2***	-659.2***	-665.6***
	(246.5)	(247.6)	(246.4)	(247.5)
Month, 02-2010	-93.21	-102.9	-97.62	-107.1
	(222.3)	(222.5)	(221.6)	(221.8)
Month, 03-2010	-155.7	-169.5	-160.1	-172.8
	(216.3)	(216.4)	(216.2)	(216.3)
Month, 04-2010	-81.71	-92.94	-85.73	-96.16
	(213.3)	(213.6)	(212.7)	(213.1)
Month, 05-2010	-88.74	-99.56	-89.26	-99.88
	(211.8)	(211.7)	(211.7)	(211.6)
Month, 06-2010	-75.30	-85.93	-75.82	-86.27
	(214.2)	(214.6)	(214.2)	(214.6)
Month, 07-2010	-176.7	-189.0	-177.2	-189.3
	(224.9)	(224.7)	(224.9)	(224.6)
Month, 08-2010	-19.90	-31.52	-20.69	-32.06
	(223.2)	(222.6)	(223.1)	(222.5)
Month, 09-2010	-365.0	-375.5	-366.0	-376.3
	(267.7)	(266.4)	(267.7)	(266.3)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 31: Long-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0284 (0.0254)	0.0283 (0.0257)	0.0150 (0.0420)	0.0164 (0.0421)
Interaction of Policy & Liquidity Constraint	-0.0340 (0.0285)	-0.0339 (0.0285)	-0.0216 (0.0426)	-0.0221 (0.0426)
Liquidity Constraint - Zero Liquid Assets	-494.9 (459.5)	-494.6 (459.6)	-493.1 (459.1)	-496.5 (459.9)
Policy Amount Lagged One Month	-0.0238* (0.0142)	-0.0239* (0.0142)	-0.0307 (0.0207)	-0.0293 (0.0208)
Policy Amount Lagged Two Months		-0.000880 (0.0121)		0.00897 (0.0158)
Total Long-Term Policy Effect		0.003 ----		-0.004 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.00740 (0.0273)	-0.00741 (0.0273)	-0.00751 (0.0273)	-0.00740 (0.0273)
Age of CU reference person	-99.96* (53.81)	-100.0* (53.84)	-100.3* (53.81)	-99.75* (53.87)
Age-Squared of CU reference person	1.140** (0.498)	1.140** (0.498)	1.142** (0.498)	1.138** (0.498)
Change in # of Adults in CU Lagged One Month	124.2 (122.6)	124.2 (122.6)	122.9 (122.6)	122.6 (122.6)

Change in # of Children Under 18 in CU Lagged One Month	-85.44 (144.4)	-85.93 (144.6)	-88.63 (144.3)	-83.59 (144.6)
Month, 11-2009	-3,712*** (661.2)	-3,711*** (661.3)	-3,705*** (660.0)	-3,714*** (661.6)
Month, 12-2009	-1,592** (669.7)	-1,592** (669.6)	-1,587** (668.5)	-1,594** (669.9)
Month, 01-2010	-4,750*** (695.2)	-4,749*** (695.3)	-4,740*** (693.9)	-4,754*** (695.6)
Month, 02-2010	-6,606*** (626.8)	-6,605*** (627.4)	-6,589*** (626.3)	-6,606*** (628.3)
Month, 03-2010	-7,578*** (602.5)	-7,577*** (603.0)	-7,555*** (602.2)	-7,573*** (604.2)
Month, 04-2010	-7,377*** (602.7)	-7,375*** (603.6)	-7,355*** (602.1)	-7,381*** (605.0)
Month, 05-2010	-7,433*** (609.7)	-7,431*** (611.0)	-7,415*** (608.7)	-7,439*** (612.0)
Month, 06-2010	-7,421*** (605.0)	-7,419*** (605.8)	-7,407*** (604.1)	-7,429*** (606.6)
Month, 07-2010	-7,393*** (609.3)	-7,392*** (609.5)	-7,379*** (608.3)	-7,396*** (610.2)
Month, 08-2010	-7,216*** (621.7)	-7,214*** (622.1)	-7,202*** (620.7)	-7,219*** (622.8)
Month, 09-2010	-7,373*** (645.0)	-7,371*** (645.3)	-7,358*** (644.2)	-7,375*** (646.2)
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.115	0.115	0.115	0.115

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00808 (0.0166)	-0.00824 (0.0167)	-0.0160 (0.0259)	-0.0149 (0.0259)

Interaction of Policy & Liquidity Constraint	0.0276 (0.0251)	0.0276 (0.0251)	0.0344 (0.0301)	0.0346 (0.0301)
Liquidity Constraint - 30% DSR Level	-286.2 (381.7)	-286.4 (381.7)	-292.8 (382.3)	-291.4 (382.5)
Policy Amount Lagged One Month	-0.0257* (0.0145)	-0.0259* (0.0146)	-0.0325 (0.0212)	-0.0311 (0.0214)
Policy Amount Lagged Two Months		-0.00140 (0.0125)		0.00876 (0.0162)
Total Long-Term Policy Effect		-0.036 ----		-0.037 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.00726 (0.0281)	-0.00727 (0.0281)	-0.00767 (0.0281)	-0.00756 (0.0281)
Age of CU reference person	-103.2* (55.21)	-103.3* (55.24)	-103.4* (55.22)	-102.9* (55.28)
Age-Squared of CU reference person	1.177** (0.511)	1.178** (0.511)	1.178** (0.511)	1.175** (0.511)
Change in # of Adults in CU Lagged One Month	127.4 (125.8)	127.4 (125.8)	126.8 (125.9)	126.5 (125.9)
Change in # of Children Under 18 in CU Lagged One Month	-84.10 (148.2)	-84.89 (148.4)	-87.23 (148.2)	-82.30 (148.5)
Month, 11-2009	-3,800*** (673.8)	-3,798*** (673.8)	-3,795*** (673.0)	-3,804*** (674.4)
Month, 12-2009	-1,634**	-1,633**	-1,630**	-1,637**

	(683.1)	(683.0)	(682.3)	(683.7)
Month, 01-2010	-4,832*** (707.4)	-4,830*** (707.5)	-4,824*** (706.6)	-4,837*** (708.2)
Month, 02-2010	-6,730*** (636.3)	-6,728*** (636.8)	-6,717*** (636.3)	-6,733*** (638.1)
Month, 03-2010	-7,715*** (610.3)	-7,712*** (610.6)	-7,697*** (610.0)	-7,715*** (611.8)
Month, 04-2010	-7,509*** (610.5)	-7,505*** (611.4)	-7,491*** (610.5)	-7,516*** (613.0)
Month, 05-2010	-7,562*** (616.9)	-7,559*** (618.1)	-7,549*** (616.3)	-7,573*** (619.3)
Month, 06-2010	-7,546*** (612.4)	-7,543*** (613.1)	-7,537*** (611.8)	-7,559*** (614.1)
Month, 07-2010	-7,507*** (615.8)	-7,505*** (616.0)	-7,498*** (615.3)	-7,514*** (616.9)
Month, 08-2010	-7,315*** (626.9)	-7,313*** (627.3)	-7,305*** (626.4)	-7,321*** (628.2)
Month, 09-2010	-7,473*** (652.8)	-7,470*** (653.0)	-7,463*** (652.4)	-7,479*** (654.1)
Observations	12,831	12,831	12,831	12,831
Number of CUs	2,779	2,779	2,779	2,779
R-Squared	0.114	0.114	0.114	0.114

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0567 (0.0623)	-0.0548 (0.0627)	0.00576 (0.0545)	0.00852 (0.0550)
Interaction of Policy & Liquidity Constraint	0.0577 (0.0633)	0.0577 (0.0633)	-0.00353 (0.0563)	-0.00377 (0.0564)
Liquidity Constraint - Zero Liquid Assets	-400.7 (584.5)	-409.6 (584.7)	-397.0 (584.5)	-408.5 (584.7)

Policy Amount Lagged One Month	0.000935 (0.00681)	0.00296 (0.00755)	0.00790 (0.0105)	0.0107 (0.0111)
Policy Amount Lagged Two Months		0.0140 (0.0157)		0.0179 (0.0135)
Total Long-Term Policy Effect		-0.038 ----		0.037
Permanent Monthly After-Tax Income, Lagged One Month	-0.381** (0.157)	-0.381** (0.157)	-0.381** (0.157)	-0.380** (0.157)
Age of CU reference person	-35.87 (227.4)	-35.30 (227.4)	-34.92 (227.4)	-34.18 (227.4)
Age-Squared of CU reference person	0.542 (2.274)	0.539 (2.274)	0.538 (2.274)	0.535 (2.274)
Change in # of Adults in CU Lagged One Month	657.5 (494.4)	657.9 (494.5)	658.9 (494.7)	659.4 (494.7)
Change in # of Children Under 18 in CU Lagged One Month	737.4 (1,228)	745.2 (1,230)	747.4 (1,228)	757.4 (1,230)
Month, 11-2009	-4,175 (2,912)	-4,176 (2,912)	-4,178 (2,912)	-4,180 (2,912)
Month, 12-2009	-1,870 (2,212)	-1,872 (2,212)	-1,875 (2,212)	-1,877 (2,212)
Month, 01-2010	-8,283*** (2,201)	-8,286*** (2,201)	-8,289*** (2,201)	-8,292*** (2,200)
Month, 02-2010	-7,693*** (2,104)	-7,698*** (2,104)	-7,733*** (2,105)	-7,740*** (2,105)
Month, 03-2010	-7,398***	-7,406***	-7,449***	-7,460***

	(1,995)	(1,995)	(1,995)	(1,995)
Month, 04-2010	-4,852** (1,974)	-4,884** (1,974)	-4,898** (1,974)	-4,939** (1,972)
Month, 05-2010	-5,363*** (1,995)	-5,388*** (1,993)	-5,378*** (1,995)	-5,410*** (1,993)
Month, 06-2010	-5,890*** (1,983)	-5,911*** (1,982)	-5,896*** (1,982)	-5,922*** (1,981)
Month, 07-2010	-4,706** (2,006)	-4,708** (2,006)	-4,712** (2,006)	-4,715** (2,005)
Month, 08-2010	-6,130*** (2,078)	-6,134*** (2,078)	-6,139*** (2,078)	-6,143*** (2,078)
Month, 09-2010	-5,821** (2,501)	-5,826** (2,501)	-5,832** (2,501)	-5,838** (2,500)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00274 (0.0167)	-0.000879 (0.0171)	0.0356 (0.0229)	0.0382* (0.0232)
Interaction of Policy & Liquidity Constraint	-0.0366 (0.0513)	-0.0367 (0.0513)	-0.0738 (0.0610)	-0.0740 (0.0610)
Liquidity Constraint - 30% DSR Level	-1,486* (884.5)	-1,481* (884.4)	-1,465* (885.0)	-1,458* (885.0)
Policy Amount Lagged One Month	0.000377 (0.00682)	0.00231 (0.00757)	0.00710 (0.0105)	0.00979 (0.0111)
Policy Amount Lagged Two Months		0.0134 (0.0158)		0.0170 (0.0135)
Total Long-Term Policy Effect		0.015		0.065**

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Permanent Monthly After-Tax Income, Lagged One Month	-0.381** (0.156)	-0.381** (0.156)	-0.379** (0.156)	-0.379** (0.157)
Age of CU reference person	-36.52 (227.4)	-35.96 (227.4)	-35.86 (227.4)	-35.14 (227.4)
Age-Squared of CU reference person	0.554 (2.274)	0.552 (2.274)	0.553 (2.274)	0.549 (2.274)
Change in # of Adults in CU Lagged One Month	663.9 (494.5)	664.2 (494.5)	664.3 (494.5)	664.7 (494.5)
Change in # of Children Under 18 in CU Lagged One Month	739.6 (1,228)	747.0 (1,230)	751.9 (1,228)	761.4 (1,230)
Month, 11-2009	-4,200 (2,912)	-4,201 (2,912)	-4,202 (2,912)	-4,204 (2,912)
Month, 12-2009	-1,915 (2,216)	-1,916 (2,216)	-1,918 (2,216)	-1,920 (2,216)
Month, 01-2010	-8,233*** (2,201)	-8,235*** (2,201)	-8,238*** (2,201)	-8,241*** (2,201)
Month, 02-2010	-7,624*** (2,101)	-7,629*** (2,101)	-7,667*** (2,103)	-7,674*** (2,103)
Month, 03-2010	-7,304*** (1,994)	-7,312*** (1,993)	-7,350*** (1,994)	-7,361*** (1,993)
Month, 04-2010	-4,761** (1,970)	-4,791** (1,970)	-4,804** (1,970)	-4,843** (1,968)
Month, 05-2010	-5,267*** (1,993)	-5,291*** (1,991)	-5,280*** (1,993)	-5,311*** (1,990)
Month, 06-2010	-5,787*** (1,976)	-5,807*** (1,976)	-5,791*** (1,976)	-5,816*** (1,975)

Month, 07-2010	-4,580** (2,001)	-4,582** (2,001)	-4,584** (2,001)	-4,587** (2,001)
Month, 08-2010	-5,996*** (2,071)	-5,999*** (2,071)	-6,003*** (2,071)	-6,007*** (2,070)
Month, 09-2010	-5,678** (2,487)	-5,681** (2,487)	-5,686** (2,487)	-5,691** (2,487)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.003	0.003	0.003	0.003

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 32: Long-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00135 (0.00528)	-0.00114 (0.00533)	0.0100 (0.00756)	0.00998 (0.00758)
Interaction of Policy & Liquidity Constraint	0.00689 (0.00624)	0.00694 (0.00627)	-0.00368 (0.00792)	-0.00368 (0.00792)
Liquidity Constraint - Zero Liquid Assets	-135.4 (97.71)	-135.9 (97.76)	-135.9 (97.98)	-135.8 (98.01)
Policy Amount Lagged One Month	-0.00258 (0.00308)	-0.00237 (0.00306)	0.00114 (0.00447)	0.00110 (0.00450)
Policy Amount Lagged Two Months		0.00157 (0.00233)		-0.000284 (0.00323)
Total Long-Term Policy Effect		-0.002 ----		0.011 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.00877 (0.00649)	-0.00878 (0.00650)	-0.00857 (0.00650)	-0.00857 (0.00650)
Age of CU reference person	-5.669 (10.86)	-5.550 (10.86)	-5.572 (10.90)	-5.594 (10.90)
Age-Squared of CU reference person	0.0867 (0.0992)	0.0859 (0.0992)	0.0871 (0.0996)	0.0873 (0.0996)
Change in # of Adults in CU Lagged One Month	54.12** (27.53)	54.19** (27.54)	54.37** (27.73)	54.35** (27.73)

Change in # of Children Under 18 in CU Lagged One Month	-43.05 (30.26)	-42.22 (30.23)	-40.73 (30.28)	-40.89 (30.28)
Month, 11-2009	-1,034*** (146.3)	-1,036*** (146.6)	-1,044*** (147.5)	-1,043*** (147.6)
Month, 12-2009	-474.6*** (149.6)	-475.8*** (149.9)	-481.3*** (150.8)	-481.0*** (150.8)
Month, 01-2010	-1,753*** (143.6)	-1,756*** (143.9)	-1,768*** (145.0)	-1,768*** (145.1)
Month, 02-2010	-1,956*** (136.1)	-1,960*** (136.5)	-1,977*** (137.5)	-1,977*** (137.7)
Month, 03-2010	-2,084*** (131.5)	-2,088*** (131.8)	-2,106*** (133.1)	-2,105*** (133.3)
Month, 04-2010	-1,987*** (132.0)	-1,992*** (132.5)	-2,010*** (133.6)	-2,009*** (134.0)
Month, 05-2010	-1,973*** (134.4)	-1,977*** (134.8)	-1,991*** (135.9)	-1,990*** (136.3)
Month, 06-2010	-1,986*** (133.5)	-1,991*** (133.9)	-2,002*** (135.0)	-2,002*** (135.3)
Month, 07-2010	-2,008*** (134.4)	-2,011*** (134.7)	-2,024*** (135.9)	-2,024*** (136.0)
Month, 08-2010	-1,972*** (135.2)	-1,975*** (135.6)	-1,987*** (136.6)	-1,986*** (136.8)
Month, 09-2010	-2,057*** (141.1)	-2,060*** (141.5)	-2,074*** (142.9)	-2,073*** (143.1)
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.000853 (0.00469)	-0.000644 (0.00472)	0.00952 (0.00691)	0.00947 (0.00693)

Interaction of Policy & Liquidity Constraint	0.00651 (0.00608)	0.00657 (0.00612)	-0.00273 (0.00754)	-0.00274 (0.00754)
Liquidity Constraint - 30% DSR Level	-64.59 (77.68)	-64.25 (77.64)	-57.17 (77.75)	-57.26 (77.75)
Policy Amount Lagged One Month	-0.00278 (0.00313)	-0.00257 (0.00311)	0.00105 (0.00450)	0.000995 (0.00454)
Policy Amount Lagged Two Months		0.00155 (0.00236)		-0.000362 (0.00326)
Total Long-Term Policy Effect		-0.002 ----		0.01 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.00276 (0.00233)	-0.00899 (0.00658)	-0.00854 (0.00656)	-0.00853 (0.00656)
Age of CU reference person	-2.257 (3.843)	-6.121 (10.99)	-5.686 (11.01)	-5.713 (11.01)
Age-Squared of CU reference person	0.0340 (0.0352)	0.0919 (0.100)	0.0891 (0.101)	0.0893 (0.101)
Change in # of Adults in CU Lagged One Month	20.53** (9.888)	54.36* (27.90)	54.55* (27.95)	54.53* (27.95)
Change in # of Children Under 18 in CU Lagged One Month	-14.49 (10.61)	-43.85 (30.51)	-40.68 (30.55)	-40.87 (30.54)
Month, 11-2009	-349.4*** (50.47)	-1,037*** (146.1)	-1,049*** (147.3)	-1,048*** (147.4)
Month, 12-2009	-164.6***	-474.6***	-484.3***	-484.0***

	(51.37)	(149.4)	(150.6)	(150.6)
Month, 01-2010	-598.2*** (49.26)	-1,755*** (142.9)	-1,771*** (144.4)	-1,770*** (144.3)
Month, 02-2010	-666.0*** (46.64)	-1,957*** (135.1)	-1,980*** (136.7)	-1,979*** (136.9)
Month, 03-2010	-713.0*** (44.84)	-2,085*** (130.2)	-2,108*** (132.1)	-2,107*** (132.2)
Month, 04-2010	-679.2*** (45.09)	-1,987*** (130.9)	-2,011*** (132.5)	-2,010*** (132.9)
Month, 05-2010	-673.3*** (45.87)	-1,972*** (133.1)	-1,991*** (134.7)	-1,990*** (135.1)
Month, 06-2010	-677.4*** (45.53)	-1,983*** (132.1)	-2,001*** (133.6)	-2,000*** (133.9)
Month, 07-2010	-684.0*** (45.80)	-2,004*** (133.0)	-2,022*** (134.6)	-2,021*** (134.7)
Month, 08-2010	-671.3*** (46.74)	-1,965*** (133.6)	-1,982*** (135.1)	-1,981*** (135.2)
Month, 09-2010	-671.2*** (52.70)	-2,050*** (139.7)	-2,068*** (141.6)	-2,068*** (141.8)
Observations	10,740	10,740	10,740	10,740
Number of CUs	2,749	2,749	2,749	2,749
R-Squared	0.199	0.199	0.199	0.199

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00178 (0.00192)	0.00183 (0.00193)	0.00916 (0.00752)	0.00925 (0.00753)
Interaction of Policy & Liquidity Constraint	-0.000802 (0.00220)	-0.000801 (0.00220)	-0.00811 (0.00784)	-0.00812 (0.00784)
Liquidity Constraint - Zero Liquid Assets	5.751 (48.06)	5.547 (48.06)	6.477 (48.06)	6.082 (48.05)

Policy Amount Lagged One Month	0.000821 (0.000721)	0.000867 (0.000737)	0.000992 (0.00236)	0.00109 (0.00238)
Policy Amount Lagged Two Months		0.000321 (0.000588)		0.000618 (0.000927)
Total Long-Term Policy Effect		0.003 ----		0.011* ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0293*** (0.00637)	-0.0293*** (0.00637)	-0.0293*** (0.00637)	-0.0293*** (0.00637)
Age of CU reference person	-36.87*** (11.96)	-36.86*** (11.96)	-36.78*** (11.96)	-36.75*** (11.96)
Age-Squared of CU reference person	0.430*** (0.112)	0.430*** (0.112)	0.430*** (0.112)	0.430*** (0.112)
Change in # of Adults in CU Lagged One Month	16.16 (24.29)	16.17 (24.29)	16.30 (24.29)	16.31 (24.29)
Change in # of Children Under 18 in CU Lagged One Month	27.76 (24.25)	27.94 (24.28)	28.69 (24.24)	29.04 (24.28)
Month, 11-2009	-255.3** (124.9)	-255.3** (124.9)	-255.6** (124.9)	-255.7** (124.9)
Month, 12-2009	221.8** (98.73)	221.7** (98.73)	221.3** (98.74)	221.2** (98.73)
Month, 01-2010	-1,510*** (105.2)	-1,510*** (105.2)	-1,510*** (105.2)	-1,511*** (105.1)
Month, 02-2010	-1,012*** (99.26)	-1,013*** (99.26)	-1,017*** (99.35)	-1,017*** (99.34)
Month, 03-2010	-1,042***	-1,042***	-1,047***	-1,047***

	(100.4)	(100.4)	(100.6)	(100.6)
Month, 04-2010	-618.7*** (97.45)	-619.4*** (97.56)	-623.0*** (97.57)	-624.4*** (97.74)
Month, 05-2010	-632.9*** (93.44)	-633.5*** (93.43)	-633.7*** (93.31)	-634.8*** (93.25)
Month, 06-2010	-585.7*** (95.06)	-586.2*** (95.10)	-586.2*** (95.07)	-587.2*** (95.11)
Month, 07-2010	-620.4*** (98.03)	-620.4*** (98.02)	-621.0*** (98.04)	-621.1*** (98.02)
Month, 08-2010	-620.9*** (93.91)	-621.0*** (93.91)	-621.7*** (93.93)	-621.9*** (93.92)
Month, 09-2010	-767.5*** (96.70)	-767.7*** (96.70)	-768.6*** (96.71)	-768.8*** (96.70)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00103 (0.00110)	0.00108 (0.00112)	0.00556 (0.00444)	0.00564 (0.00444)
Interaction of Policy & Liquidity Constraint	0.000473 (0.00211)	0.000472 (0.00211)	-0.00398 (0.00500)	-0.00399 (0.00500)
Liquidity Constraint - 30% DSR Level	-93.16* (54.38)	-93.05* (54.39)	-90.90* (54.43)	-90.66* (54.46)
Policy Amount Lagged One Month	0.000793 (0.000719)	0.000835 (0.000736)	0.000951 (0.00236)	0.00104 (0.00238)
Policy Amount Lagged Two Months		0.000290 (0.000591)		0.000578 (0.000930)
Total Long-Term Policy Effect		0.002		0.007**

Permanent Monthly After-Tax Income, Lagged One Month	-0.0293*** (0.00637)	-0.0293*** (0.00637)	-0.0292*** (0.00637)	-0.0292*** (0.00637)
Age of CU reference person	-37.00*** (11.96)	-36.99*** (11.96)	-36.94*** (11.96)	-36.92*** (11.95)
Age-Squared of CU reference person	0.432*** (0.112)	0.432*** (0.112)	0.432*** (0.112)	0.432*** (0.112)
Change in # of Adults in CU Lagged One Month	16.65 (24.27)	16.65 (24.27)	16.65 (24.27)	16.67 (24.27)
Change in # of Children Under 18 in CU Lagged One Month	27.93 (24.24)	28.09 (24.28)	29.15 (24.24)	29.47 (24.29)
Month, 11-2009	-256.8** (125.0)	-256.8** (125.0)	-257.1** (125.0)	-257.1** (125.0)
Month, 12-2009	218.9** (98.77)	218.8** (98.77)	218.6** (98.77)	218.5** (98.77)
Month, 01-2010	-1,507*** (105.0)	-1,507*** (105.0)	-1,507*** (105.0)	-1,507*** (105.0)
Month, 02-2010	-1,009*** (99.12)	-1,009*** (99.12)	-1,014*** (99.21)	-1,014*** (99.20)
Month, 03-2010	-1,036*** (100.2)	-1,037*** (100.2)	-1,041*** (100.5)	-1,041*** (100.4)
Month, 04-2010	-613.7*** (97.30)	-614.3*** (97.40)	-617.7*** (97.44)	-619.0*** (97.59)
Month, 05-2010	-628.2*** (93.27)	-628.7*** (93.26)	-628.8*** (93.12)	-629.8*** (93.06)
Month, 06-2010	-581.0*** (94.83)	-581.4*** (94.87)	-581.4*** (94.84)	-582.2*** (94.88)

Month, 07-2010	-614.8*** (97.61)	-614.8*** (97.61)	-615.2*** (97.62)	-615.3*** (97.60)
Month, 08-2010	-615.3*** (93.48)	-615.3*** (93.48)	-615.9*** (93.50)	-616.1*** (93.49)
Month, 09-2010	-762.0*** (96.10)	-762.0*** (96.10)	-762.8*** (96.12)	-763.0*** (96.11)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.056	0.056	0.056	0.056

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 33: Long-Run Effect of the EITC (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0108* (0.00632)	0.00908 (0.00632)	0.0122 (0.0122)	0.0103 (0.0124)
Interaction of Policy & Liquidity Constraint	-0.000803 (0.00997)	-6.42e-05 (0.0101)	-0.00216 (0.0149)	-0.00123 (0.0151)
Liquidity Constraint - Zero Liquid Assets	316.7 (283.4)	316.3 (283.1)	313.4 (283.5)	312.9 (283.2)
Policy Amount Lagged One Month	0.00912 (0.00769)	0.00830 (0.00795)	0.0125 (0.0110)	0.0116 (0.0111)
Policy Amount Lagged Two Months		-0.00920 (0.00715)		-0.00930 (0.00946)
Total Long-Term Policy Effect		0.008 ----		0.013 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0142 (0.0186)	0.0141 (0.0186)	0.0143 (0.0187)	0.0141 (0.0186)
Age of CU reference person	-25.14 (34.96)	-25.20 (34.83)	-24.92 (34.97)	-24.98 (34.84)
Age-Squared of CU reference person	0.197 (0.333)	0.195 (0.331)	0.195 (0.333)	0.194 (0.331)
Change in # of Adults in CU Lagged One Month	105.9 (71.12)	105.9 (71.10)	106.1 (71.10)	106.0 (71.06)

Change in # of Children Under 18 in CU Lagged One Month	-2.004 (82.10)	-5.602 (82.23)	-0.232 (81.79)	-3.923 (81.95)
Month, 11-2009	699.1*** (165.4)	697.5*** (164.6)	701.1*** (166.0)	699.3*** (165.1)
Month, 12-2009	1,635*** (180.5)	1,631*** (179.7)	1,639*** (180.9)	1,634*** (180.1)
Month, 01-2010	1,038*** (220.6)	1,035*** (219.5)	1,040*** (221.0)	1,036*** (219.9)
Month, 02-2010	325.4** (146.1)	326.5** (145.3)	325.1** (146.3)	326.3** (145.6)
Month, 03-2010	202.6 (140.5)	206.1 (140.0)	198.2 (141.0)	201.9 (140.5)
Month, 04-2010	131.8 (135.7)	143.7 (135.6)	129.2 (136.0)	141.4 (136.7)
Month, 05-2010	252.3* (136.2)	261.9* (136.1)	249.2* (136.5)	258.9* (136.4)
Month, 06-2010	374.0** (145.7)	385.7*** (146.0)	374.6** (146.0)	386.4*** (146.7)
Month, 07-2010	319.3** (154.9)	320.1** (154.1)	319.7** (155.1)	320.5** (154.3)
Month, 08-2010	223.4 (157.4)	224.5 (156.7)	223.4 (157.7)	224.5 (156.9)
Month, 09-2010	321.5 (218.3)	323.1 (217.5)	321.7 (218.6)	323.3 (217.9)
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.030	0.030	0.030

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0118* (0.00615)	0.0108* (0.00636)	0.0133 (0.0121)	0.0122 (0.0122)

Interaction of Policy & Liquidity Constraint	-0.00226 (0.00801)	-0.00311 (0.00816)	-0.00349 (0.0122)	-0.00430 (0.0123)
Liquidity Constraint - 30% DSR Level	-315.7 (236.2)	-323.8 (236.6)	-313.5 (236.5)	-322.1 (236.8)
Policy Amount Lagged One Month	0.00930 (0.00774)	0.00844 (0.00801)	0.0128 (0.0111)	0.0118 (0.0112)
Policy Amount Lagged Two Months		-0.00972 (0.00722)		-0.0102 (0.00948)
Total Long-Term Policy Effect		0.01 ----		0.014 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0133 (0.0188)	0.0132 (0.0188)	0.0134 (0.0189)	0.0133 (0.0188)
Age of CU reference person	-25.34 (35.48)	-25.46 (35.39)	-25.14 (35.51)	-25.27 (35.41)
Age-Squared of CU reference person	0.198 (0.337)	0.198 (0.336)	0.197 (0.338)	0.196 (0.336)
Change in # of Adults in CU Lagged One Month	109.8 (71.84)	109.9 (71.89)	109.9 (71.84)	110.0 (71.88)
Change in # of Children Under 18 in CU Lagged One Month	1.635 (82.53)	-2.048 (82.72)	3.592 (82.23)	-0.337 (82.46)
Month, 11-2009	703.6*** (166.2)	702.2*** (165.5)	705.9*** (166.9)	704.3*** (166.0)
Month, 12-2009	1,635***	1,631***	1,639***	1,635***

	(181.7)	(180.9)	(182.2)	(181.4)
Month, 01-2010	1,066*** (223.7)	1,063*** (222.8)	1,068*** (224.2)	1,065*** (223.2)
Month, 02-2010	340.5** (147.6)	342.1** (146.9)	339.6** (147.9)	341.4** (147.3)
Month, 03-2010	221.5 (142.2)	225.8 (141.8)	217.0 (142.7)	221.6 (142.3)
Month, 04-2010	141.7 (136.3)	154.8 (136.5)	139.1 (136.7)	153.0 (137.5)
Month, 05-2010	263.0* (136.5)	273.7** (136.6)	259.9* (136.9)	271.1** (137.0)
Month, 06-2010	382.4*** (145.8)	395.5*** (146.3)	383.2*** (146.1)	396.9*** (147.1)
Month, 07-2010	323.7** (155.0)	325.2** (154.4)	324.2** (155.4)	325.7** (154.7)
Month, 08-2010	222.0 (157.2)	223.8 (156.5)	222.1 (157.5)	224.0 (156.8)
Month, 09-2010	316.3 (215.7)	318.6 (215.1)	316.7 (216.1)	319.1 (215.6)
Observations	7,847	7,847	7,847	7,847
Number of CUs	2,426	2,426	2,426	2,426
R-Squared	0.030	0.031	0.030	0.031

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.00776 (0.0104)	0.00746 (0.0104)	0.0149 (0.0158)	0.0148 (0.0159)
Interaction of Policy & Liquidity Constraint	-0.0214 (0.0165)	-0.0214 (0.0165)	-0.0284 (0.0237)	-0.0284 (0.0237)
Liquidity Constraint - Zero Liquid Assets	-27.39 (120.5)	-26.00 (120.6)	-26.62 (120.6)	-26.17 (120.7)

Policy Amount Lagged One Month	-0.00458 (0.00342)	-0.00489 (0.00345)	-0.00455 (0.00480)	-0.00467 (0.00475)
Policy Amount Lagged Two Months		-0.00217 (0.00253)		-0.000711 (0.00517)
Total Long-Term Policy Effect		0.000 ----		0.009 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0188 (0.0193)	-0.0189 (0.0193)	-0.0188 (0.0193)	-0.0188 (0.0193)
Age of CU reference person	-60.55 (44.10)	-60.64 (44.10)	-60.47 (44.11)	-60.49 (44.12)
Age-Squared of CU reference person	0.580 (0.408)	0.580 (0.408)	0.579 (0.408)	0.579 (0.408)
Change in # of Adults in CU Lagged One Month	31.05 (98.81)	30.99 (98.82)	31.16 (98.80)	31.14 (98.81)
Change in # of Children Under 18 in CU Lagged One Month	83.82 (79.42)	82.62 (79.58)	84.67 (79.40)	84.27 (79.40)
Month, 11-2009	74.16 (301.0)	74.38 (301.0)	73.86 (300.9)	73.93 (300.9)
Month, 12-2009	249.7 (260.7)	250.1 (260.7)	249.3 (260.6)	249.4 (260.6)
Month, 01-2010	-658.0*** (246.5)	-657.6*** (246.5)	-658.6*** (246.4)	-658.4*** (246.3)
Month, 02-2010	-91.66 (222.3)	-90.87 (222.4)	-95.99 (221.5)	-95.72 (221.5)
Month, 03-2010	-146.5	-145.3	-150.8	-150.4

	(216.2)	(216.1)	(215.5)	(215.2)
Month, 04-2010	-73.74 (213.5)	-68.87 (214.1)	-77.71 (212.5)	-76.09 (212.9)
Month, 05-2010	-82.11 (212.0)	-78.23 (212.2)	-82.65 (211.7)	-81.37 (211.0)
Month, 06-2010	-74.66 (214.2)	-71.45 (214.6)	-75.16 (214.1)	-74.11 (214.5)
Month, 07-2010	-176.0 (224.9)	-175.6 (224.9)	-176.5 (224.8)	-176.4 (224.7)
Month, 08-2010	-18.86 (223.2)	-18.29 (223.2)	-19.64 (223.1)	-19.45 (223.0)
Month, 09-2010	-363.6 (267.7)	-362.8 (267.8)	-364.6 (267.6)	-364.3 (267.6)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0161 (0.0147)	-0.0164 (0.0149)	-0.0124 (0.0133)	-0.0125 (0.0135)
Interaction of Policy & Liquidity Constraint	0.0231 (0.0165)	0.0231 (0.0165)	0.0194 (0.0155)	0.0194 (0.0155)
Liquidity Constraint - 30% DSR Level	246.1 (171.0)	245.2 (171.0)	247.9 (170.9)	247.7 (170.9)
Policy Amount Lagged One Month	-0.00451 (0.00342)	-0.00481 (0.00344)	-0.00445 (0.00480)	-0.00455 (0.00475)
Policy Amount Lagged Two Months		-0.00210 (0.00254)		-0.000608 (0.00517)
Total Long-Term Policy Effect		-0.023		-0.018

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Permanent Monthly After-Tax Income, Lagged One Month	-0.0187 (0.0193)	-0.0188 (0.0193)	-0.0186 (0.0193)	-0.0186 (0.0193)
Age of CU reference person	-60.50 (44.09)	-60.58 (44.09)	-60.45 (44.09)	-60.47 (44.10)
Age-Squared of CU reference person	0.578 (0.408)	0.579 (0.408)	0.578 (0.408)	0.578 (0.408)
Change in # of Adults in CU Lagged One Month	29.99 (98.50)	29.94 (98.51)	29.99 (98.50)	29.97 (98.51)
Change in # of Children Under 18 in CU Lagged One Month	83.54 (79.47)	82.38 (79.62)	84.53 (79.43)	84.19 (79.43)
Month, 11-2009	78.66 (300.9)	78.86 (300.9)	78.46 (300.9)	78.52 (300.9)
Month, 12-2009	258.4 (261.2)	258.7 (261.3)	258.2 (261.2)	258.2 (261.2)
Month, 01-2010	-664.5*** (247.6)	-664.1*** (247.6)	-664.9*** (247.5)	-664.8*** (247.4)
Month, 02-2010	-101.3 (222.6)	-100.5 (222.7)	-105.5 (221.8)	-105.2 (221.8)
Month, 03-2010	-160.3 (216.2)	-159.1 (216.2)	-163.7 (215.6)	-163.3 (215.3)
Month, 04-2010	-85.06 (213.8)	-80.34 (214.4)	-88.30 (212.9)	-86.92 (213.3)
Month, 05-2010	-93.03 (211.9)	-89.29 (212.1)	-93.42 (211.6)	-92.33 (210.9)
Month, 06-2010	-85.33 (214.6)	-82.26 (214.9)	-85.66 (214.5)	-84.77 (214.9)

Month, 07-2010	-188.4 (224.7)	-188.1 (224.7)	-188.7 (224.6)	-188.6 (224.5)
Month, 08-2010	-30.58 (222.6)	-30.11 (222.6)	-31.12 (222.5)	-30.98 (222.4)
Month, 09-2010	-374.3 (266.4)	-373.7 (266.4)	-375.0 (266.3)	-374.9 (266.2)
Observations	27,032	27,032	27,032	27,032
Number of CUs	2,785	2,785	2,785	2,785
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2009 to quarter three 2010 (i.e. October 2009 to September 2010). The reference month-year is October 2009. All households in the sample had values of the EITC imputed for months February 2010, March 2010, or April 2010 based on the receipt qualifications.

Table 34: Short-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.611** (0.298)	0.177** (0.0858)	0.333*** (0.125)	0.283*** (0.104)
Interaction of Policy & Liquidity Constraint	-0.266* (0.151)	-0.215 (0.159)	-0.378** (0.164)	-0.305* (0.166)
Liquidity Constraint - Zero Liquid Assets	40.80 (601.5)		49.85 (601.2)	
Liquidity Constraint - 30% DSR Level		-179.7 (359.8)		-163.8 (360.0)
Total Effect From Liquidity Constrained Households	0.345 ----	-0.038 ----	-0.045 ----	-0.022 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0324 (0.0360)	-0.0325 (0.0363)	-0.0327 (0.0361)	-0.0328 (0.0363)
Age of CU reference person	-36.73 (69.22)	-36.11 (69.79)	-36.35 (69.32)	-34.86 (69.86)
Age-Squared of CU reference person	0.408 (0.609)	0.401 (0.615)	0.402 (0.610)	0.387 (0.615)

Change in # of Adults in CU Lagged One Month	-69.41 (152.3)	-68.49 (153.5)	-67.78 (152.4)	-66.59 (153.6)
Change in # of Children Under 18 in CU Lagged One Month	11.74 (140.1)	13.77 (141.1)	9.157 (140.3)	11.45 (141.3)
Month, 11-2008	-4,387*** (773.8)	-4,406*** (778.2)	-4,409*** (777.1)	-4,419*** (781.0)
Month, 12-2008	-1,804** (778.2)	-1,818** (782.2)	-1,814** (781.7)	-1,820** (785.1)
Month, 01-2009	-5,296*** (814.0)	-5,329*** (817.6)	-5,321*** (817.6)	-5,346*** (820.5)
Month, 02-2009	-7,390*** (746.2)	-7,426*** (749.8)	-7,422*** (749.6)	-7,450*** (752.3)
Month, 03-2009	-8,371*** (724.1)	-8,412*** (727.6)	-8,409*** (727.3)	-8,443*** (730.0)
Month, 04-2009	-8,125*** (727.8)	-8,168*** (731.3)	-8,161*** (731.0)	-8,197*** (733.7)
Month, 05-2009	-8,126*** (730.5)	-8,167*** (733.6)	-8,192*** (734.0)	-8,226*** (736.2)
Month, 06-2009	-7,795*** (742.2)	-7,831*** (744.9)	-7,861*** (745.2)	-7,889*** (747.0)
Month, 07-2009	-7,939*** (735.5)	-7,979*** (738.2)	-7,975*** (738.9)	-8,008*** (740.7)
Month, 08-2009	-7,420*** (751.1)	-7,452*** (754.0)	-7,456*** (754.6)	-7,480*** (756.6)
Month, 09-2009	-7,993*** (767.2)	-8,028*** (770.6)	-8,028*** (770.8)	-8,055*** (773.3)
Observations	12,034	12,034	12,034	12,034
Number of CUs	2,729	2,729	2,729	2,729

R-Squared	0.109	0.109	0.109	0.109
<i>Panel B. The Level Amount of Total Consumption Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.0302 (0.160)	-0.108 (0.136)	-0.0390 (0.227)	-0.116 (0.178)
Interaction of Policy & Liquidity Constraint	-0.128 (0.178)	0.0543 (0.232)	-0.120 (0.208)	0.0616 (0.205)
Liquidity Constraint - Zero Liquid Assets	-1,288** (610.0)		-1,288** (610.3)	
Liquidity Constraint - 30% DSR Level		-2,149 (2,014)		-2,150 (2,016)
Total Effect From Liquidity Constrained Households	-0.158 ----	-0.054 ----	-0.159 ----	-0.054 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0613 (0.125)	0.0617 (0.125)	0.0613 (0.125)	0.0617 (0.125)
Age of CU reference person	-765.0 (699.0)	-773.6 (699.6)	-765.0 (699.0)	-773.7 (699.6)
Age-Squared of CU reference person	7.140 (5.696)	7.205 (5.702)	7.140 (5.696)	7.205 (5.702)

Change in # of Adults in CU Lagged One Month	-142.4 (635.4)	-133.2 (635.4)	-142.5 (635.4)	-133.2 (635.4)
Change in # of Children Under 18 in CU Lagged One Month	650.6 (794.3)	655.4 (794.0)	650.8 (794.3)	655.7 (794.1)
Month, 11-2008	424.1 (3,400)	360.5 (3,398)	424.1 (3,400)	360.5 (3,398)
Month, 12-2008	1,491 (2,685)	1,414 (2,696)	1,491 (2,685)	1,414 (2,696)
Month, 01-2009	-4,937* (2,619)	-4,912* (2,620)	-4,936* (2,619)	-4,912* (2,620)
Month, 02-2009	-4,655* (2,495)	-4,577* (2,492)	-4,654* (2,495)	-4,577* (2,492)
Month, 03-2009	-3,890 (2,425)	-3,752 (2,423)	-3,890 (2,425)	-3,752 (2,423)
Month, 04-2009	-2,732 (2,352)	-2,583 (2,348)	-2,732 (2,352)	-2,583 (2,348)
Month, 05-2009	-2,802 (2,336)	-2,641 (2,335)	-2,798 (2,336)	-2,637 (2,335)
Month, 06-2009	-914.7 (2,364)	-748.6 (2,378)	-911.1 (2,365)	-744.9 (2,379)
Month, 07-2009	-2,934 (2,450)	-2,745 (2,426)	-2,934 (2,450)	-2,744 (2,426)
Month, 08-2009	-1,118 (2,519)	-905.6 (2,547)	-1,118 (2,519)	-905.6 (2,547)
Month, 09-2009	-5,582* (3,107)	-5,322* (3,036)	-5,582* (3,107)	-5,322* (3,036)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733

R-Squared	0.002	0.002	0.002	0.002
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Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 35: Short-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.0470 (0.116)	0.0176 (0.0220)	-0.00930 (0.0271)	0.0204 (0.0251)
Interaction of Policy & Liquidity Constraint	0.0109 (0.0372)	-0.0566* (0.0340)	0.0102 (0.0380)	-0.0588* (0.0355)
Liquidity Constraint - Zero Liquid Assets	28.63 (111.7)		28.67 (111.7)	
Liquidity Constraint - 30% DSR Level		-96.02 (75.55)		-95.64 (75.58)
Total Effect From Liquidity Constrained Households	-0.036 ----	-0.039 ----	0.001 ----	-0.039 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0148* (0.00776)	-0.0149* (0.00786)	-0.0148* (0.00776)	-0.0149* (0.00786)
Age of CU reference person	-31.78** (13.75)	-32.40** (13.94)	-31.77** (13.75)	-32.36** (13.94)
Age-Squared of CU reference person	0.331***	0.337***	0.331***	0.336***

	(0.123)	(0.125)	(0.123)	(0.125)
Change in # of Adults in CU Lagged One Month	34.68 (31.39)	35.75 (31.87)	34.69 (31.38)	35.78 (31.87)
Change in # of Children Under 18 in CU Lagged One Month	-11.35 (34.06)	-10.73 (34.46)	-11.37 (34.06)	-10.82 (34.46)
Month, 11-2008	-1,004*** (197.4)	-1,019*** (199.7)	-1,004*** (197.4)	-1,019*** (199.7)
Month, 12-2008	-571.5*** (188.7)	-587.8*** (191.0)	-571.7*** (188.8)	-588.2*** (191.1)
Month, 01-2009	-1,897*** (187.1)	-1,921*** (189.2)	-1,897*** (187.2)	-1,922*** (189.4)
Month, 02-2009	-2,133*** (176.7)	-2,159*** (178.5)	-2,134*** (176.8)	-2,160*** (178.6)
Month, 03-2009	-2,240*** (173.0)	-2,266*** (174.8)	-2,241*** (173.0)	-2,267*** (174.9)
Month, 04-2009	-2,170*** (173.1)	-2,195*** (174.8)	-2,170*** (173.1)	-2,196*** (175.0)
Month, 05-2009	-2,164*** (174.3)	-2,189*** (175.9)	-2,165*** (174.4)	-2,190*** (176.1)
Month, 06-2009	-2,107*** (176.7)	-2,131*** (178.5)	-2,107*** (176.8)	-2,133*** (178.6)
Month, 07-2009	-2,153*** (175.7)	-2,179*** (177.4)	-2,153*** (175.8)	-2,180*** (177.5)
Month, 08-2009	-2,018*** (178.0)	-2,041*** (179.5)	-2,018*** (178.0)	-2,042*** (179.6)
Month, 09-2009	-2,175*** (181.5)	-2,200*** (183.1)	-2,175*** (181.5)	-2,201*** (183.2)
Observations	10,023	10,023	10,023	10,023

Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.191	0.192	0.191	0.192

Panel B. The Level Amount of Nondurable Goods Expenditures

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	-0.00558 (0.00908)	-0.00496 (0.00667)	-0.00291 (0.0108)	-0.00286 (0.00817)
Interaction of Policy & Liquidity Constraint	-0.00518 (0.0139)	-0.00814 (0.0173)	-0.00765 (0.0125)	-0.0101 (0.0153)
Liquidity Constraint - Zero Liquid Assets	-43.43 (35.80)		-43.24 (35.80)	
Liquidity Constraint - 30% DSR Level		-114.0** (50.52)		-113.8** (50.51)
Total Effect From Liquidity Constrained Households	-0.011 ----	-0.013 ----	-0.011 ----	-0.013 ----
Temporary Perception of Income Changes				
Permanent Monthly After-Tax Income, Lagged One Month	-0.0510*** (0.00619)	-0.0510*** (0.00619)	-0.0510*** (0.00619)	-0.0510*** (0.00619)

Age of CU reference person	-27.22 (17.92)	-27.61 (17.94)	-27.22 (17.92)	-27.59 (17.93)
Age-Squared of CU reference person	0.359** (0.159)	0.362** (0.159)	0.359** (0.159)	0.362** (0.159)
Change in # of Adults in CU Lagged One Month	23.81 (24.05)	24.28 (24.02)	23.83 (24.05)	24.28 (24.02)
Change in # of Children Under 18 in CU Lagged One Month	26.02 (27.53)	26.27 (27.52)	25.95 (27.53)	26.21 (27.52)
Month, 11-2008	-134.3 (114.2)	-137.7 (114.3)	-134.3 (114.2)	-137.7 (114.3)
Month, 12-2008	134.3 (100.7)	130.1 (100.6)	134.3 (100.7)	130.1 (100.6)
Month, 01-2009	-1,560*** (109.4)	-1,559*** (109.3)	-1,560*** (109.4)	-1,559*** (109.3)
Month, 02-2009	-1,097*** (98.48)	-1,093*** (98.48)	-1,097*** (98.48)	-1,093*** (98.48)
Month, 03-2009	-1,053*** (96.05)	-1,046*** (96.02)	-1,053*** (96.05)	-1,046*** (96.02)
Month, 04-2009	-643.1*** (97.05)	-635.9*** (97.08)	-643.1*** (97.06)	-635.9*** (97.08)
Month, 05-2009	-643.7*** (94.96)	-636.3*** (94.94)	-644.7*** (94.99)	-637.3*** (94.97)
Month, 06-2009	-585.4*** (95.64)	-577.9*** (95.51)	-586.5*** (95.83)	-578.9*** (95.70)
Month, 07-2009	-618.1*** (99.68)	-609.6*** (99.62)	-618.1*** (99.68)	-609.6*** (99.62)
Month, 08-2009	-589.4*** (104.3)	-580.0*** (104.1)	-589.4*** (104.3)	-580.0*** (104.1)

Month, 09-2009	-831.8*** (111.8)	-820.7*** (111.5)	-831.9*** (111.8)	-820.7*** (111.5)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.087	0.087	0.087

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 36: Short-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.0400 (0.109)	-0.00536 (0.0637)	0.0356 (0.0733)	0.00596 (0.0755)
Interaction of Policy & Liquidity Constraint	0.0615 (0.116)	0.113 (0.0928)	0.0476 (0.126)	0.103 (0.0991)
Liquidity Constraint - Zero Liquid Assets	322.5 (393.9)		322.3 (393.9)	
Liquidity Constraint - 30% DSR Level		-194.3 (209.8)		-193.0 (210.0)
Total Effect From Liquidity Constrained Households	0.102 ----	0.108 ----	0.084 ----	0.109 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0234 (0.0226)	0.0231 (0.0227)	0.0235 (0.0226)	0.0232 (0.0227)
Age of CU reference person	23.63 (49.87)	22.69 (50.00)	23.67 (49.89)	22.78 (50.02)
Age-Squared of CU reference person	-0.0866 (0.444)	-0.0773 (0.445)	-0.0873 (0.444)	-0.0783 (0.445)

Change in # of Adults in CU Lagged One Month	-14.64 (92.30)	-13.16 (92.64)	-14.66 (92.29)	-13.10 (92.64)
Change in # of Children Under 18 in CU Lagged One Month	-8.118 (99.36)	-5.976 (99.22)	-8.458 (99.38)	-6.235 (99.26)
Month, 11-2008	696.0*** (254.0)	695.8*** (255.4)	696.7*** (254.3)	696.5*** (255.6)
Month, 12-2008	1,651*** (251.7)	1,642*** (253.2)	1,652*** (251.9)	1,644*** (253.4)
Month, 01-2009	1,328*** (313.2)	1,336*** (315.4)	1,329*** (313.5)	1,336*** (315.6)
Month, 02-2009	73.98 (214.0)	74.41 (215.5)	74.04 (214.2)	74.68 (215.7)
Month, 03-2009	-110.6 (199.7)	-107.5 (201.8)	-110.8 (199.9)	-107.5 (202.0)
Month, 04-2009	15.03 (206.2)	17.57 (208.5)	14.83 (206.4)	17.45 (208.7)
Month, 05-2009	-33.69 (200.1)	-32.85 (202.5)	-37.92 (200.8)	-36.34 (203.3)
Month, 06-2009	104.9 (212.9)	95.67 (214.6)	99.80 (213.5)	92.32 (215.1)
Month, 07-2009	76.05 (214.8)	69.18 (217.1)	75.95 (215.0)	69.23 (217.3)
Month, 08-2009	280.6 (236.4)	262.8 (238.6)	280.6 (236.6)	263.1 (238.8)
Month, 09-2009	-43.58 (257.0)	-64.39 (255.7)	-44.20 (257.2)	-64.82 (255.9)
Observations	7,393	7,393	7,393	7,129
Number of CUs	2,364	2,364	2,364	2,364

R-Squared	0.036	0.037	0.036	0.037
<i>Panel B. The Level Amount of Durable Goods Expenditures</i>				
	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	2SLS	2SLS
Policy Amount	0.0184 (0.0468)	-0.00811 (0.0521)	0.0568 (0.0699)	0.0250 (0.0610)
Interaction of Policy & Liquidity Constraint	-0.00941 (0.0735)	0.0619 (0.0718)	-0.0449 (0.0919)	0.0316 (0.0722)
Liquidity Constraint - Zero Liquid Assets	-129.0 (171.2)		-126.2 (171.3)	
Liquidity Constraint - 30% DSR Level		-507.5 (419.9)		-503.6 (419.9)
Total Effect From Liquidity Constrained Households	0.009 ----	0.054 ----	0.012 ----	0.057 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0241 (0.0451)	0.0242 (0.0451)	0.0241 (0.0451)	0.0242 (0.0451)
Age of CU reference person	-44.59 (59.39)	-46.97 (59.83)	-44.52 (59.39)	-46.65 (59.82)
Age-Squared of CU reference person	0.482 (0.495)	0.501 (0.499)	0.481 (0.495)	0.498 (0.499)

Change in # of Adults in CU Lagged One Month	-17.21 (122.1)	-14.56 (121.8)	-16.94 (122.1)	-14.47 (121.8)
Change in # of Children Under 18 in CU Lagged One Month	-78.49 (140.7)	-77.04 (140.7)	-79.39 (140.8)	-77.93 (140.8)
Month, 11-2008	-660.6 (449.0)	-676.0 (449.3)	-660.9 (449.0)	-675.8 (449.3)
Month, 12-2008	-186.3 (372.9)	-206.3 (370.3)	-186.8 (372.9)	-206.1 (370.3)
Month, 01-2009	-1,126*** (358.2)	-1,123*** (358.2)	-1,127*** (358.2)	-1,123*** (358.2)
Month, 02-2009	-839.7** (332.7)	-824.3** (332.4)	-840.4** (332.7)	-824.4** (332.3)
Month, 03-2009	-878.6*** (336.3)	-849.5** (333.2)	-879.4*** (336.3)	-849.7** (333.2)
Month, 04-2009	-576.7* (318.9)	-547.9* (319.2)	-577.4* (318.9)	-548.1* (319.2)
Month, 05-2009	-630.9** (312.8)	-600.6* (312.9)	-646.5** (313.4)	-616.3** (313.3)
Month, 06-2009	-439.8 (323.0)	-411.9 (322.9)	-455.5 (322.7)	-427.1 (322.7)
Month, 07-2009	-658.0** (328.7)	-625.7* (328.7)	-658.6** (328.7)	-625.9* (328.7)
Month, 08-2009	-507.3 (367.1)	-471.9 (369.1)	-508.1 (367.1)	-472.2 (369.1)
Month, 09-2009	-1,158*** (381.8)	-1,117*** (382.6)	-1,158*** (381.8)	-1,117*** (382.6)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733

R-Squared	0.002	0.002	0.002	0.002
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Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Effect From Liquidity Constrained Households" variable is the summation of the "Policy Amount" and "Interaction of Policy & Liquidity Constraint" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 37: Long-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Total Consumption Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.193* (0.105)	0.188* (0.105)	0.310** (0.126)	0.300** (0.127)
Interaction of Policy & Liquidity Constraint	-0.265* (0.151)	-0.265* (0.152)	-0.375** (0.165)	-0.376** (0.165)
Liquidity Constraint - Zero Liquid Assets	60.36 (602.6)	67.57 (603.3)	69.08 (602.4)	82.69 (603.5)
Policy Amount Lagged One Month	-0.117 (0.0915)	-0.125 (0.0929)	-0.116 (0.0994)	-0.132 (0.102)
Policy Amount Lagged Two Months		-0.0431 (0.0808)		-0.0803 (0.0866)
Total Long-Term Policy Effect		0.020 ----		0.088 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0344 (0.0361)	-0.0348 (0.0361)	-0.0347 (0.0362)	-0.0355 (0.0362)
Age of CU reference person	-37.37 (69.32)	-38.17 (69.37)	-36.98 (69.42)	-38.49 (69.51)
Age-Squared of CU reference person	0.423 (0.610)	0.437 (0.611)	0.417 (0.611)	0.443 (0.613)
Change in # of Adults in CU Lagged One Month	-70.88 (152.4)	-70.79 (152.5)	-69.27 (152.6)	-69.11 (152.8)

Change in # of Children Under 18 in CU Lagged One Month	16.39 (140.2)	19.15 (140.2)	13.82 (140.3)	18.99 (140.4)
Month, 11-2008	-4,469*** (777.3)	-4,523*** (789.1)	-4,490*** (781.1)	-4,591*** (797.3)
Month, 12-2008	-1,900** (783.2)	-1,969** (799.6)	-1,909** (787.3)	-2,039** (808.5)
Month, 01-2009	-5,376*** (817.8)	-5,440*** (833.2)	-5,400*** (821.5)	-5,521*** (841.2)
Month, 02-2009	-7,461*** (750.2)	-7,522*** (763.6)	-7,492*** (753.7)	-7,607*** (771.1)
Month, 03-2009	-8,438*** (728.7)	-8,497*** (741.9)	-8,475*** (731.8)	-8,587*** (749.3)
Month, 04-2009	-8,194*** (731.8)	-8,254*** (744.2)	-8,228*** (734.9)	-8,341*** (751.5)
Month, 05-2009	-8,186*** (734.4)	-8,244*** (746.4)	-8,250*** (737.8)	-8,360*** (754.0)
Month, 06-2009	-7,798*** (745.7)	-7,852*** (757.3)	-7,863*** (748.6)	-7,964*** (763.7)
Month, 07-2009	-7,962*** (738.9)	-7,998*** (745.9)	-7,996*** (742.2)	-8,066*** (752.6)
Month, 08-2009	-7,488*** (755.1)	-7,527*** (762.0)	-7,523*** (758.4)	-7,596*** (769.1)
Month, 09-2009	-8,065*** (770.7)	-8,124*** (783.2)	-8,098*** (774.3)	-8,211*** (790.9)
Observations	12,034	12,034	12,034	12,034
Number of CUs	2,729	2,729	2,729	2,729
R-Squared	0.110	0.110	0.110	0.110

*Panel B. The Natural Log of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.156* (0.0868)	0.151* (0.0875)	0.260** (0.105)	0.251** (0.106)

Interaction of Policy & Liquidity Constraint	-0.214 (0.159)	-0.213 (0.159)	-0.302* (0.167)	-0.302* (0.167)
Liquidity Constraint - 30% DSR Level	-176.8 (360.1)	-176.6 (360.3)	-161.2 (360.2)	-160.8 (360.4)
Policy Amount Lagged One Month	-0.118 (0.0922)	-0.126 (0.0936)	-0.117 (0.100)	-0.133 (0.103)
Policy Amount Lagged Two Months		-0.0430 (0.0813)		-0.0800 (0.0871)
Total Long-Term Policy Effect		-0.018 ----		0.038 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0345 (0.0363)	-0.0349 (0.0363)	-0.0347 (0.0364)	-0.0355 (0.0364)
Age of CU reference person	-36.70 (69.85)	-37.49 (69.89)	-35.48 (69.92)	-36.95 (69.99)
Age-Squared of CU reference person	0.416 (0.615)	0.430 (0.616)	0.402 (0.616)	0.427 (0.617)
Change in # of Adults in CU Lagged One Month	-69.93 (153.6)	-69.81 (153.7)	-68.05 (153.7)	-67.85 (153.9)
Change in # of Children Under 18 in CU Lagged One Month	18.52 (141.2)	21.29 (141.1)	16.20 (141.3)	21.39 (141.3)
Month, 11-2008	-4,487*** (781.5)	-4,540*** (793.2)	-4,499*** (784.8)	-4,598*** (801.0)
Month, 12-2008	-1,914**	-1,982**	-1,916**	-2,045**

	(787.1)	(803.4)	(790.6)	(811.7)
Month, 01-2009	-5,407*** (821.3)	-5,471*** (836.8)	-5,424*** (824.4)	-5,544*** (844.2)
Month, 02-2009	-7,495*** (753.7)	-7,555*** (767.3)	-7,518*** (756.5)	-7,631*** (774.1)
Month, 03-2009	-8,476*** (732.1)	-8,534*** (745.6)	-8,505*** (734.5)	-8,615*** (752.3)
Month, 04-2009	-8,234*** (735.3)	-8,293*** (747.9)	-8,262*** (737.6)	-8,372*** (754.6)
Month, 05-2009	-8,225*** (737.5)	-8,282*** (749.8)	-8,282*** (740.0)	-8,390*** (756.5)
Month, 06-2009	-7,831*** (748.3)	-7,884*** (760.2)	-7,888*** (750.2)	-7,988*** (765.8)
Month, 07-2009	-7,999*** (741.5)	-8,035*** (748.6)	-8,027*** (743.9)	-8,095*** (754.5)
Month, 08-2009	-7,519*** (758.0)	-7,557*** (765.1)	-7,545*** (760.6)	-7,617*** (771.4)
Month, 09-2009	-8,099*** (774.1)	-8,158*** (787.0)	-8,124*** (777.0)	-8,235*** (794.0)
Observations	12,034	12,034	12,034	12,034
Number of CUs	2,729	2,729	2,729	2,729
R-Squared	0.110	0.110	0.110	0.110

*Panel C. The Level Amount of Total Consumption Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00839 (0.155)	-0.0189 (0.158)	-0.0369 (0.222)	-0.0534 (0.225)
Interaction of Policy & Liquidity Constraint	-0.128 (0.178)	-0.128 (0.178)	-0.120 (0.207)	-0.120 (0.207)
Liquidity Constraint - Zero Liquid Assets	-1,304** (609.4)	-1,290** (611.4)	-1,290** (609.6)	-1,267** (610.2)

Policy Amount Lagged One Month	0.118 (0.212)	0.0983 (0.210)	0.0101 (0.204)	-0.0221 (0.206)
Policy Amount Lagged Two Months		-0.0988 (0.311)		-0.148 (0.267)
Total Long-Term Policy Effect		-0.02 ----		-0.224 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0622 (0.125)	0.0619 (0.126)	0.0614 (0.125)	0.0609 (0.125)
Age of CU reference person	-763.7 (699.2)	-765.6 (699.6)	-764.9 (699.3)	-767.8 (700.0)
Age-Squared of CU reference person	7.118 (5.700)	7.149 (5.705)	7.138 (5.701)	7.185 (5.711)
Change in # of Adults in CU Lagged One Month	-142.3 (635.4)	-141.4 (634.4)	-142.4 (635.4)	-141.0 (634.7)
Change in # of Children Under 18 in CU Lagged One Month	646.3 (794.4)	651.6 (792.5)	650.4 (794.5)	658.4 (793.5)
Month, 11-2008	465.1 (3,409)	414.2 (3,428)	427.6 (3,411)	350.4 (3,435)
Month, 12-2008	1,532 (2,693)	1,464 (2,702)	1,494 (2,696)	1,392 (2,721)
Month, 01-2009	-4,896* (2,629)	-4,964* (2,663)	-4,933* (2,631)	-5,036* (2,674)
Month, 02-2009	-4,614* (2,505)	-4,682* (2,507)	-4,651* (2,508)	-4,754* (2,528)
Month, 03-2009	-3,849	-3,918	-3,886	-3,990

	(2,434)	(2,451)	(2,437)	(2,468)
Month, 04-2009	-2,691 (2,363)	-2,760 (2,382)	-2,728 (2,366)	-2,832 (2,400)
Month, 05-2009	-2,776 (2,344)	-2,837 (2,359)	-2,796 (2,346)	-2,888 (2,374)
Month, 06-2009	-969.5 (2,354)	-1,017 (2,366)	-915.9 (2,354)	-985.7 (2,375)
Month, 07-2009	-2,972 (2,448)	-2,958 (2,448)	-2,937 (2,445)	-2,915 (2,441)
Month, 08-2009	-1,079 (2,532)	-1,083 (2,532)	-1,114 (2,535)	-1,122 (2,537)
Month, 09-2009	-5,543* (3,121)	-5,610* (3,142)	-5,579* (3,124)	-5,680* (3,157)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

*Panel D. The Level Amount of Total Consumption Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0867 (0.140)	-0.0980 (0.143)	-0.115 (0.181)	-0.132 (0.185)
Interaction of Policy & Liquidity Constraint	0.0538 (0.232)	0.0545 (0.232)	0.0615 (0.207)	0.0626 (0.207)
Liquidity Constraint - 30% DSR Level	-2,152 (2,014)	-2,151 (2,013)	-2,150 (2,015)	-2,148 (2,015)
Policy Amount Lagged One Month	0.116 (0.212)	0.0957 (0.210)	0.00615 (0.204)	-0.0267 (0.206)
Policy Amount Lagged Two Months		-0.103 (0.311)		-0.152 (0.267)
Total Long-Term Policy Effect		-0.105		-0.311

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Permanent Monthly After-Tax Income, Lagged One Month	0.0625 (0.125)	0.0622 (0.126)	0.0617 (0.125)	0.0613 (0.125)
Age of CU reference person	-772.3 (699.9)	-774.4 (700.3)	-773.7 (699.9)	-776.7 (700.6)
Age-Squared of CU reference person	7.183 (5.706)	7.216 (5.711)	7.204 (5.707)	7.252 (5.717)
Change in # of Adults in CU Lagged One Month	-133.1 (635.4)	-132.2 (634.5)	-133.2 (635.5)	-131.8 (634.7)
Change in # of Children Under 18 in CU Lagged One Month	651.2 (794.2)	656.7 (792.2)	655.4 (794.3)	663.6 (793.3)
Month, 11-2008	400.8 (3,408)	347.9 (3,427)	362.6 (3,410)	283.6 (3,434)
Month, 12-2008	1,454 (2,705)	1,383 (2,713)	1,416 (2,708)	1,311 (2,733)
Month, 01-2009	-4,871* (2,629)	-4,943* (2,663)	-4,910* (2,632)	-5,015* (2,674)
Month, 02-2009	-4,536* (2,502)	-4,608* (2,503)	-4,574* (2,505)	-4,680* (2,525)
Month, 03-2009	-3,712 (2,432)	-3,783 (2,448)	-3,750 (2,435)	-3,856 (2,466)
Month, 04-2009	-2,542 (2,359)	-2,614 (2,378)	-2,581 (2,362)	-2,687 (2,395)
Month, 05-2009	-2,615 (2,342)	-2,679 (2,357)	-2,636 (2,344)	-2,731 (2,372)
Month, 06-2009	-801.4 (2,369)	-851.6 (2,381)	-747.8 (2,369)	-820.9 (2,390)

Month, 07-2009	-2,780 (2,425)	-2,767 (2,424)	-2,746 (2,421)	-2,726 (2,418)
Month, 08-2009	-865.7 (2,561)	-871.6 (2,561)	-903.4 (2,564)	-912.8 (2,566)
Month, 09-2009	-5,282* (3,050)	-5,353* (3,072)	-5,320* (3,054)	-5,426* (3,087)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 38: Long-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Nondurable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00997 (0.0249)	-0.0129 (0.0250)	-0.00819 (0.0272)	-0.0109 (0.0274)
Interaction of Policy & Liquidity Constraint	0.0109 (0.0372)	0.0110 (0.0372)	0.00981 (0.0379)	0.0101 (0.0380)
Liquidity Constraint - Zero Liquid Assets	28.53 (111.7)	31.87 (111.9)	27.89 (111.7)	30.76 (111.8)
Policy Amount Lagged One Month	0.000675 (0.0215)	-0.00390 (0.0222)	0.00536 (0.0220)	0.00120 (0.0228)
Policy Amount Lagged Two Months		-0.0247 (0.0201)		-0.0210 (0.0211)
Total Long-Term Policy Effect		-0.041 ----		-0.031 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0148* (0.00777)	-0.0150* (0.00778)	-0.0148* (0.00778)	-0.0149* (0.00778)
Age of CU reference person	-31.77** (13.75)	-32.44** (13.76)	-31.70** (13.75)	-32.27** (13.77)
Age-Squared of CU reference person	0.331*** (0.123)	0.341*** (0.123)	0.330*** (0.123)	0.338*** (0.124)
Change in # of Adults in CU Lagged One Month	34.69 (31.39)	34.93 (31.45)	34.73 (31.38)	34.93 (31.42)

Change in # of Children Under 18 in CU Lagged One Month	-11.37 (34.07)	-9.281 (34.11)	-11.57 (34.07)	-9.774 (34.12)
Month, 11-2008	-1,003*** (197.3)	-1,038*** (200.4)	-1,000*** (197.2)	-1,030*** (200.8)
Month, 12-2008	-571.0*** (188.7)	-614.9*** (192.6)	-567.4*** (188.4)	-604.8*** (192.7)
Month, 01-2009	-1,897*** (186.7)	-1,936*** (190.2)	-1,895*** (186.7)	-1,928*** (190.5)
Month, 02-2009	-2,133*** (176.5)	-2,171*** (180.0)	-2,131*** (176.4)	-2,164*** (179.9)
Month, 03-2009	-2,240*** (172.8)	-2,278*** (176.2)	-2,238*** (172.6)	-2,270*** (176.2)
Month, 04-2009	-2,170*** (172.9)	-2,208*** (176.5)	-2,168*** (172.7)	-2,200*** (176.5)
Month, 05-2009	-2,164*** (174.1)	-2,201*** (177.5)	-2,162*** (174.0)	-2,194*** (177.6)
Month, 06-2009	-2,107*** (176.7)	-2,143*** (179.9)	-2,107*** (176.7)	-2,137*** (180.0)
Month, 07-2009	-2,153*** (175.6)	-2,181*** (178.4)	-2,152*** (175.6)	-2,176*** (178.3)
Month, 08-2009	-2,017*** (177.8)	-2,046*** (180.6)	-2,015*** (177.6)	-2,039*** (180.4)
Month, 09-2009	-2,174*** (181.2)	-2,213*** (184.7)	-2,172*** (181.1)	-2,205*** (184.6)
Observations	10,023	10,023	10,023	10,023
Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.191	0.191	0.191	0.191

*Panel B. The Natural Log of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0177 (0.0221)	0.0149 (0.0223)	0.0213 (0.0251)	0.0187 (0.0254)

Interaction of Policy & Liquidity Constraint	-0.0566* (0.0340)	-0.0568* (0.0340)	-0.0588* (0.0355)	-0.0588* (0.0354)
Liquidity Constraint - 30% DSR Level	-96.00 (75.54)	-95.03 (75.61)	-95.51 (75.56)	-94.72 (75.62)
Policy Amount Lagged One Month	0.000520 (0.0218)	-0.00406 (0.0225)	0.00519 (0.0223)	0.00102 (0.0231)
Policy Amount Lagged Two Months		-0.0248 (0.0204)		-0.0211 (0.0214)
Total Long-Term Policy Effect		-0.014 ----		-0.001 ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0149* (0.00787)	-0.0150* (0.00788)	-0.0148* (0.00788)	-0.0150* (0.00788)
Age of CU reference person	-32.39** (13.94)	-33.04** (13.95)	-32.29** (13.95)	-32.85** (13.96)
Age-Squared of CU reference person	0.337*** (0.125)	0.346*** (0.125)	0.335*** (0.125)	0.343*** (0.125)
Change in # of Adults in CU Lagged One Month	35.76 (31.87)	35.98 (31.92)	35.81 (31.86)	36.00 (31.90)
Change in # of Children Under 18 in CU Lagged One Month	-10.75 (34.46)	-8.656 (34.49)	-11.01 (34.47)	-9.207 (34.50)
Month, 11-2008	-1,018*** (199.6)	-1,053*** (202.6)	-1,016*** (199.6)	-1,045*** (203.1)
Month, 12-2008	-587.4***	-631.2***	-584.2***	-621.5***

	(190.9)	(194.8)	(190.7)	(194.9)
Month, 01-2009	-1,921*** (188.8)	-1,960*** (192.3)	-1,919*** (188.8)	-1,952*** (192.6)
Month, 02-2009	-2,159*** (178.3)	-2,197*** (181.7)	-2,158*** (178.2)	-2,190*** (181.7)
Month, 03-2009	-2,265*** (174.6)	-2,303*** (177.9)	-2,264*** (174.5)	-2,296*** (178.0)
Month, 04-2009	-2,195*** (174.6)	-2,233*** (178.2)	-2,194*** (174.5)	-2,226*** (178.2)
Month, 05-2009	-2,188*** (175.7)	-2,226*** (179.1)	-2,188*** (175.7)	-2,220*** (179.3)
Month, 06-2009	-2,131*** (178.4)	-2,167*** (181.6)	-2,133*** (178.6)	-2,163*** (181.8)
Month, 07-2009	-2,178*** (177.3)	-2,206*** (180.0)	-2,179*** (177.3)	-2,202*** (179.9)
Month, 08-2009	-2,040*** (179.4)	-2,069*** (182.1)	-2,039*** (179.2)	-2,063*** (181.9)
Month, 09-2009	-2,200*** (182.8)	-2,239*** (186.2)	-2,199*** (182.8)	-2,231*** (186.2)
Observations	10,023	10,023	10,023	10,023
Number of CUs	2,692	2,692	2,692	2,692
R-Squared	0.192	0.192	0.192	0.192

*Panel C. The Level Amount of Nondurable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00830 (0.00894)	-0.0128 (0.00914)	-0.00632 (0.0105)	-0.0111 (0.0106)
Interaction of Policy & Liquidity Constraint	-0.00520 (0.0139)	-0.00529 (0.0140)	-0.00732 (0.0125)	-0.00735 (0.0125)
Liquidity Constraint - Zero Liquid Assets	-41.35 (35.81)	-34.97 (35.91)	-40.96 (35.81)	-34.40 (35.90)

Policy Amount Lagged One Month	-0.0148 (0.0102)	-0.0234** (0.00975)	-0.0164 (0.0113)	-0.0257** (0.0109)
Policy Amount Lagged Two Months		-0.0425*** (0.0113)		-0.0431*** (0.0127)
Total Long-Term Policy Effect		-0.079*** ----		-0.080*** ----
Permanent Monthly After-Tax Income, Lagged One Month	-0.0511*** (0.00620)	-0.0512*** (0.00619)	-0.0511*** (0.00620)	-0.0513*** (0.00619)
Age of CU reference person	-27.39 (17.92)	-28.22 (17.90)	-27.40 (17.92)	-28.26 (17.90)
Age-Squared of CU reference person	0.362** (0.159)	0.375** (0.159)	0.362** (0.159)	0.375** (0.159)
Change in # of Adults in CU Lagged One Month	23.80 (24.05)	24.20 (24.07)	23.81 (24.05)	24.22 (24.07)
Change in # of Children Under 18 in CU Lagged One Month	26.55 (27.55)	28.81 (27.64)	26.56 (27.55)	28.87 (27.65)
Month, 11-2008	-139.4 (114.7)	-161.3 (115.4)	-140.0 (114.8)	-162.4 (115.7)
Month, 12-2008	129.2 (101.1)	100.1 (102.0)	128.6 (101.1)	98.94 (102.4)
Month, 01-2009	-1,565*** (109.8)	-1,595*** (110.9)	-1,566*** (109.9)	-1,596*** (111.3)
Month, 02-2009	-1,102*** (98.86)	-1,132*** (100.1)	-1,103*** (98.96)	-1,133*** (100.5)
Month, 03-2009	-1,058***	-1,087***	-1,058***	-1,088***

	(96.48)	(97.47)	(96.58)	(97.91)
Month, 04-2009	-648.1*** (97.45)	-677.5*** (98.51)	-648.7*** (97.55)	-678.7*** (98.91)
Month, 05-2009	-646.9*** (95.22)	-673.1*** (96.13)	-648.1*** (95.30)	-674.8*** (96.50)
Month, 06-2009	-578.5*** (95.18)	-598.9*** (95.95)	-578.7*** (95.24)	-599.0*** (96.18)
Month, 07-2009	-613.4*** (99.54)	-607.4*** (99.18)	-612.9*** (99.51)	-606.6*** (99.09)
Month, 08-2009	-594.3*** (104.9)	-596.1*** (104.7)	-594.8*** (105.0)	-597.0*** (104.9)
Month, 09-2009	-836.7*** (112.1)	-865.5*** (113.4)	-837.3*** (112.2)	-866.7*** (114.0)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.088	0.087	0.088

*Panel D. The Level Amount of Nondurable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00771 (0.00664)	-0.0124* (0.00680)	-0.00626 (0.00799)	-0.0112 (0.00816)
Interaction of Policy & Liquidity Constraint	-0.00809 (0.0173)	-0.00780 (0.0173)	-0.00970 (0.0154)	-0.00936 (0.0154)
Liquidity Constraint - 30% DSR Level	-113.6** (50.54)	-113.0** (50.58)	-113.4** (50.54)	-112.7** (50.57)
Policy Amount Lagged One Month	-0.0147 (0.0102)	-0.0233** (0.00975)	-0.0165 (0.0113)	-0.0258** (0.0109)
Policy Amount Lagged Two Months		-0.0426*** (0.0113)		-0.0431*** (0.0127)
Total Long-Term Policy Effect		-0.078***		-0.080***

Permanent Monthly After-Tax Income, Lagged One Month	-0.0511*** (0.00620)	-0.0512*** (0.00620)	-0.0511*** (0.00620)	-0.0512*** (0.00620)
Age of CU reference person	-27.77 (17.94)	-28.61 (17.92)	-27.78 (17.93)	-28.63 (17.92)
Age-Squared of CU reference person	0.365** (0.159)	0.378** (0.159)	0.365** (0.159)	0.378** (0.159)
Change in # of Adults in CU Lagged One Month	24.27 (24.02)	24.68 (24.04)	24.27 (24.02)	24.68 (24.04)
Change in # of Children Under 18 in CU Lagged One Month	26.80 (27.53)	29.07 (27.63)	26.82 (27.54)	29.14 (27.64)
Month, 11-2008	-142.8 (114.7)	-164.7 (115.4)	-143.4 (114.8)	-165.8 (115.8)
Month, 12-2008	125.0 (101.0)	95.90 (101.9)	124.4 (101.1)	94.71 (102.3)
Month, 01-2009	-1,564*** (109.8)	-1,594*** (110.9)	-1,565*** (109.9)	-1,595*** (111.3)
Month, 02-2009	-1,098*** (98.87)	-1,128*** (100.1)	-1,099*** (98.97)	-1,129*** (100.5)
Month, 03-2009	-1,051*** (96.46)	-1,080*** (97.46)	-1,051*** (96.56)	-1,082*** (97.89)
Month, 04-2009	-641.0*** (97.49)	-670.6*** (98.57)	-641.6*** (97.58)	-671.9*** (98.96)
Month, 05-2009	-639.7*** (95.22)	-666.2*** (96.14)	-640.9*** (95.30)	-667.9*** (96.51)
Month, 06-2009	-571.2*** (95.06)	-592.0*** (95.85)	-571.3*** (95.11)	-592.0*** (96.07)

Month, 07-2009	-605.1*** (99.48)	-599.5*** (99.14)	-604.6*** (99.45)	-598.7*** (99.05)
Month, 08-2009	-585.1*** (104.6)	-587.5*** (104.5)	-585.7*** (104.8)	-588.3*** (104.7)
Month, 09-2009	-825.8*** (111.8)	-855.3*** (113.2)	-826.4*** (111.9)	-856.5*** (113.8)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.087	0.088	0.087	0.088

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 39: Long-Run Effect of the RDTR (All Coefficients)

<i>Panel A. The Natural Log of Durable Goods Expenditures (Zero Liquid Assets Liquidity Constraint)</i>				
VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0207 (0.0607)	0.0246 (0.0613)	0.0393 (0.0738)	0.0409 (0.0740)
Interaction of Policy & Liquidity Constraint	0.0621 (0.116)	0.0654 (0.115)	0.0456 (0.125)	0.0479 (0.125)
Liquidity Constraint - Zero Liquid Assets	324.1 (394.2)	320.7 (393.6)	318.5 (393.6)	316.7 (393.4)
Policy Amount Lagged One Month	-0.0100 (0.0591)	-0.00430 (0.0597)	0.0235 (0.0630)	0.0266 (0.0639)
Policy Amount Lagged Two Months		0.0348 (0.0576)		0.0183 (0.0575)
Total Long-Term Policy Effect		0.055 ----		0.086 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0233 (0.0226)	0.0233 (0.0226)	0.0238 (0.0226)	0.0238 (0.0226)
Age of CU reference person	23.60 (49.89)	24.83 (49.83)	23.76 (49.85)	24.40 (49.77)
Age-Squared of CU reference person	-0.0852 (0.444)	-0.103 (0.444)	-0.0908 (0.444)	-0.0999 (0.443)
Change in # of Adults in CU Lagged One Month	-14.68 (92.33)	-13.89 (92.20)	-14.56 (92.23)	-14.14 (92.17)

Change in # of Children Under 18 in CU Lagged One Month	-7.874 (99.41)	-8.827 (99.20)	-9.045 (99.32)	-9.535 (99.20)
Month, 11-2008	693.3*** (255.7)	701.1*** (255.1)	703.2*** (256.3)	707.3*** (256.5)
Month, 12-2008	1,648*** (252.9)	1,666*** (254.6)	1,660*** (253.4)	1,669*** (255.9)
Month, 01-2009	1,324*** (313.7)	1,345*** (316.2)	1,337*** (314.7)	1,348*** (317.9)
Month, 02-2009	71.75 (214.6)	86.86 (215.4)	79.29 (215.0)	87.27 (216.9)
Month, 03-2009	-112.5 (200.4)	-97.12 (201.0)	-106.3 (200.5)	-98.19 (202.1)
Month, 04-2009	12.83 (206.9)	27.72 (207.1)	19.99 (207.2)	27.86 (208.6)
Month, 05-2009	-35.13 (200.5)	-21.83 (200.5)	-34.75 (200.9)	-27.57 (202.1)
Month, 06-2009	108.7 (213.9)	118.6 (213.2)	90.78 (213.0)	96.14 (213.3)
Month, 07-2009	78.49 (215.6)	74.65 (213.3)	70.26 (214.4)	68.25 (213.2)
Month, 08-2009	278.3 (236.9)	272.8 (234.7)	285.9 (237.1)	283.0 (235.9)
Month, 09-2009	-45.90 (257.8)	-31.02 (258.3)	-38.77 (258.4)	-30.88 (259.7)
Observations	7,393	7,393	7,393	7,393
Number of CUs	2,364	2,364	2,364	2,364
R-Squared	0.036	0.036	0.036	0.036

*Panel B. The Natural Log of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.00621 (0.0643)	-0.00163 (0.0644)	0.00989 (0.0761)	0.0117 (0.0762)

Interaction of Policy & Liquidity Constraint	0.113 (0.0929)	0.115 (0.0926)	0.102 (0.0992)	0.104 (0.0991)
Liquidity Constraint - 30% DSR Level	-193.7 (209.9)	-195.5 (209.9)	-194.9 (210.1)	-195.9 (210.2)
Policy Amount Lagged One Month	-0.00704 (0.0594)	-0.000973 (0.0599)	0.0261 (0.0633)	0.0296 (0.0641)
Policy Amount Lagged Two Months		0.0368 (0.0578)		0.0199 (0.0576)
Total Long-Term Policy Effect		0.034 ----		0.061 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0230 (0.0227)	0.0231 (0.0227)	0.0236 (0.0227)	0.0236 (0.0227)
Age of CU reference person	22.67 (50.01)	23.95 (49.95)	22.89 (50.00)	23.58 (49.92)
Age-Squared of CU reference person	-0.0763 (0.445)	-0.0945 (0.445)	-0.0821 (0.445)	-0.0919 (0.445)
Change in # of Adults in CU Lagged One Month	-13.20 (92.65)	-12.37 (92.52)	-12.95 (92.62)	-12.50 (92.56)
Change in # of Children Under 18 in CU Lagged One Month	-5.793 (99.25)	-6.837 (99.04)	-6.931 (99.24)	-7.484 (99.12)
Month, 11-2008	693.8*** (257.0)	702.1*** (256.2)	704.2*** (257.7)	708.7*** (257.7)
Month, 12-2008	1,640***	1,660***	1,653***	1,663***

	(254.4)	(255.8)	(254.9)	(257.2)
Month, 01-2009	1,333*** (315.9)	1,355*** (318.4)	1,346*** (317.0)	1,358*** (320.2)
Month, 02-2009	72.81 (216.0)	88.84 (216.7)	80.64 (216.5)	89.35 (218.3)
Month, 03-2009	-108.9 (202.5)	-92.55 (203.0)	-102.3 (202.7)	-93.43 (204.2)
Month, 04-2009	15.97 (209.2)	31.90 (209.3)	23.37 (209.6)	32.05 (210.9)
Month, 05-2009	-33.91 (202.9)	-19.60 (202.9)	-32.64 (203.5)	-24.65 (204.7)
Month, 06-2009	98.23 (215.4)	108.8 (214.7)	82.71 (214.6)	88.59 (214.8)
Month, 07-2009	70.79 (217.7)	67.03 (215.3)	63.32 (216.6)	61.28 (215.3)
Month, 08-2009	261.1 (239.2)	255.8 (236.8)	269.6 (239.5)	266.7 (238.1)
Month, 09-2009	-66.13 (256.5)	-50.08 (257.1)	-58.41 (257.3)	-49.63 (258.6)
Observations	7,393	7,393	7,393	7,393
Number of CUs	2,364	2,364	2,364	2,364
R-Squared	0.037	0.037	0.037	0.037

*Panel C. The Level Amount of Durable Goods Expenditures
(Zero Liquid Assets Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	0.0144 (0.0439)	0.0175 (0.0441)	0.0509 (0.0647)	0.0472 (0.0643)
Interaction of Policy & Liquidity Constraint	-0.00944 (0.0735)	-0.00938 (0.0735)	-0.0443 (0.0916)	-0.0443 (0.0916)
Liquidity Constraint - Zero Liquid Assets	-125.9 (171.2)	-130.2 (171.7)	-122.3 (171.4)	-117.1 (171.6)

Policy Amount Lagged One Month	-0.0216 (0.0529)	-0.0159 (0.0485)	-0.0282 (0.0666)	-0.0356 (0.0598)
Policy Amount Lagged Two Months		0.0282 (0.0768)		-0.0340 (0.0723)
Total Long-Term Policy Effect		0.03 ----		-0.022 ----
Permanent Monthly After-Tax Income, Lagged One Month	0.0240 (0.0451)	0.0241 (0.0451)	0.0239 (0.0450)	0.0238 (0.0450)
Age of CU reference person	-44.83 (59.40)	-44.28 (59.34)	-44.84 (59.42)	-45.52 (59.35)
Age-Squared of CU reference person	0.486 (0.495)	0.477 (0.495)	0.486 (0.496)	0.497 (0.495)
Change in # of Adults in CU Lagged One Month	-17.22 (122.1)	-17.49 (122.1)	-16.96 (122.1)	-16.64 (122.1)
Change in # of Children Under 18 in CU Lagged One Month	-77.71 (140.6)	-79.21 (140.5)	-78.35 (140.6)	-76.52 (140.6)
Month, 11-2008	-668.1 (444.9)	-653.5 (452.1)	-670.7 (442.5)	-688.4 (455.7)
Month, 12-2008	-193.7 (370.6)	-174.4 (378.2)	-196.5 (368.9)	-219.9 (383.2)
Month, 01-2009	-1,134*** (355.0)	-1,114*** (364.8)	-1,137*** (353.2)	-1,160*** (369.9)
Month, 02-2009	-847.1** (329.1)	-827.6** (337.6)	-850.1*** (327.1)	-873.7** (342.9)
Month, 03-2009	-886.1***	-866.5**	-889.0***	-912.7***

	(333.7)	(345.0)	(331.9)	(350.8)
Month, 04-2009	-584.1* (315.6)	-564.6* (325.3)	-587.1* (313.6)	-610.7* (331.3)
Month, 05-2009	-635.6** (310.9)	-618.2* (319.9)	-652.3** (310.6)	-673.4** (326.8)
Month, 06-2009	-429.8 (329.7)	-416.3 (338.4)	-442.1 (333.6)	-458.1 (348.2)
Month, 07-2009	-651.1* (332.6)	-655.1** (331.5)	-649.6* (334.2)	-644.7* (331.4)
Month, 08-2009	-514.5 (365.5)	-513.2 (365.8)	-517.4 (363.9)	-519.1 (364.8)
Month, 09-2009	-1,165*** (379.5)	-1,146*** (383.2)	-1,168*** (377.9)	-1,191*** (390.0)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

*Panel D. The Level Amount of Durable Goods Expenditures
(Debt Threshold Liquidity Constraint)*

VARIABLES	(1) OLS	(2) OLS	(3) 2SLS	(4) 2SLS
Policy Amount	-0.0121 (0.0495)	-0.00900 (0.0496)	0.0191 (0.0561)	0.0153 (0.0557)
Interaction of Policy & Liquidity Constraint	0.0620 (0.0718)	0.0618 (0.0718)	0.0323 (0.0718)	0.0325 (0.0718)
Liquidity Constraint - 30% DSR Level	-507.0 (420.1)	-507.4 (420.1)	-503.0 (420.0)	-502.4 (420.1)
Policy Amount Lagged One Month	-0.0213 (0.0530)	-0.0157 (0.0486)	-0.0283 (0.0666)	-0.0356 (0.0599)
Policy Amount Lagged Two Months		0.0280 (0.0767)		-0.0339 (0.0723)
Total Long-Term Policy Effect		0.003		-0.054

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Permanent Monthly After-Tax Income, Lagged One Month	0.0240 (0.0451)	0.0241 (0.0451)	0.0240 (0.0450)	0.0239 (0.0451)
Age of CU reference person	-47.21 (59.84)	-46.66 (59.77)	-46.97 (59.85)	-47.64 (59.78)
Age-Squared of CU reference person	0.505 (0.499)	0.497 (0.499)	0.503 (0.500)	0.514 (0.499)
Change in # of Adults in CU Lagged One Month	-14.57 (121.8)	-14.84 (121.7)	-14.49 (121.8)	-14.17 (121.8)
Change in # of Children Under 18 in CU Lagged One Month	-76.26 (140.6)	-77.76 (140.6)	-76.89 (140.7)	-75.06 (140.7)
Month, 11-2008	-683.4 (445.2)	-669.0 (452.3)	-685.6 (442.8)	-703.3 (456.0)
Month, 12-2008	-213.7 (368.0)	-194.5 (375.7)	-215.9 (366.3)	-239.3 (380.7)
Month, 01-2009	-1,130*** (355.0)	-1,111*** (364.9)	-1,133*** (353.2)	-1,157*** (369.9)
Month, 02-2009	-831.6** (328.8)	-812.2** (337.3)	-834.2** (326.7)	-857.8** (342.6)
Month, 03-2009	-856.9*** (330.6)	-837.4** (342.1)	-859.5*** (328.8)	-883.2** (347.8)
Month, 04-2009	-555.4* (315.9)	-535.9* (325.7)	-558.0* (313.9)	-581.8* (331.6)
Month, 05-2009	-605.4* (311.0)	-587.9* (320.1)	-622.3** (310.5)	-643.6** (326.9)
Month, 06-2009	-402.2 (329.4)	-388.5 (338.3)	-413.9 (333.2)	-430.3 (348.2)

Month, 07-2009	-619.2* (332.4)	-622.8* (331.4)	-617.2* (333.9)	-612.6* (331.4)
Month, 08-2009	-479.2 (367.6)	-477.7 (368.0)	-481.9 (365.9)	-484.0 (367.0)
Month, 09-2009	-1,124*** (380.3)	-1,105*** (384.2)	-1,127*** (378.7)	-1,150*** (391.1)
Observations	25,536	25,536	25,536	25,536
Number of CUs	2,733	2,733	2,733	2,733
R-Squared	0.002	0.002	0.002	0.002

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The "Total Long-Term Policy Effect" variable is the summation of the "Policy Amount", the "Policy Amount Lagged One Month", and the "Policy Amount Lagged Two Months" variables and its summation is tested for significance using an F-test. Therefore, no standard error is provided for that variable. This sample contains households which were surveyed from quarter four 2008 to quarter three 2009 (i.e. October 2008 to September 2009). The reference month-year is October 2008. All households in the sample had values of the RDTR imputed for months May 2009 or June 2009 based on the receipt qualifications.

Table 40: Hausman Test Results

<i>Panel A. The Natural Log Dependent Variables</i>				
VARIABLES	<i>Liquid Assets Constraint</i>		<i>DSR Constraint</i>	
	(1) Chi-Squared	(2) P-Value	(3) Chi-Squared	(4) P-Value
Equation 1 - MWPTC				
Total Consumption	3.470	1.0000	0.460	1.0000
Nondurable Goods	4.340	0.9998	4.530	0.9997
Durable Goods	7.960	0.9871	3.850	0.9999
Equation 1 - EITC				
Total Consumption	0.180	1.0000	0.310	1.0000
Nondurable Goods	6.970	0.9839	10.300	0.8907
Durable Goods	0.010	1.0000	0.020	1.0000
Equation 1 - RDTR				
Total Consumption	3.080	0.9999	2.55	1.0000
Nondurable Goods	0.000	1.0000	0.040	1.0000
Durable Goods	0.100	1.0000	0.070	1.0000
Equation 2 - MWPTC				
Total Consumption	24.350	0.2275	16.260	0.7003
Nondurable Goods	13.150	0.8710	10.490	0.9583
Durable Goods	8.460	0.9884	3.480	1.0000
Equation 2 - EITC				
Total Consumption	0.680	1.0000	1.130	1.0000
Nondurable Goods	10.530	0.9131	16.060	0.5885
Durable Goods	0.020	1.0000	0.050	1.0000
Equation 2 - RDTR				
Total Consumption	2.970	1.0000	2.470	1.0000
Nondurable Goods	0.130	1.0000	0.160	1.0000
Durable Goods	0.770	1.0000	0.720	1.0000
Equation 3 - MWPTC				
Total Consumption	19.370	0.5612	15.090	0.8187
Nondurable Goods	17.180	0.7004	10.200	0.9763
Durable Goods	8.450	0.9929	3.380	1.0000
Equation 3 - EITC				
Total Consumption	3.180	1.0000	5.500	0.9989
Nondurable Goods	14.290	0.7667	13.170	0.7815
Durable Goods	0.020	1.0000	0.050	1.0000
Equation 3 - RDTR				
Total Consumption	3.290	1.0000	2.780	1.0000
Nondurable Goods	0.190	1.0000	0.220	1.0000
Durable Goods	0.930	1.0000	0.890	1.0000
<i>Panel B. The Level Amount Dependent Variables</i>				
VARIABLES	<i>Liquid Assets Constraint</i>		<i>DSR Constraint</i>	
	(1) Chi-Squared	(2) P-Value	(3) Chi-Squared	(4) P-Value

Table Estimates	(1) Chi-Squared	(2) P-Value	(3) Chi-Squared	(4) P-Value
Equation 1 - MWPTC				
Total Consumption	0.040	1.0000	0.070	1.0000
Nondurable Goods	3.490	1.0000	3.320	1.0000
Durable Goods	0.040	1.0000	0.000	1.0000
Equation 1 - EITC				
Total Consumption	0.200	1.0000	0.200	1.0000
Nondurable Goods	1.420	1.0000	1.410	1.0000
Durable Goods	0.120	1.0000	0.090	1.0000
Equation 1 - RDTR				
Total Consumption	0.000	1.0000	0.000	1.0000
Nondurable Goods	0.090	1.0000	0.080	1.0000
Durable Goods	0.670	1.0000	0.690	1.0000
Equation 2 - MWPTC				
Total Consumption	3.560	1.0000	3.580	1.0000
Nondurable Goods	23.640	0.2583	22.450	0.3168
Durable Goods	0.770	1.0000	0.700	1.0000
Equation 2 - EITC				
Total Consumption	0.220	1.0000	0.220	1.0000
Nondurable Goods	1.440	1.0000	1.420	1.0000
Durable Goods	0.120	1.0000	0.090	1.0000
Equation 2 - RDTR				
Total Consumption	0.350	1.0000	0.360	1.0000
Nondurable Goods	0.220	1.0000	0.240	1.0000
Durable Goods	0.760	1.0000	0.790	1.0000
Equation 3 - MWPTC				
Total Consumption	4.110	1.0000	4.120	1.0000
Nondurable Goods	25.320	0.2338	24.020	0.2922
Durable Goods	0.750	1.0000	0.690	1.0000
Equation 3 - EITC				
Total Consumption	0.230	1.0000	0.230	1.0000
Nondurable Goods	1.460	1.0000	1.440	1.0000
Durable Goods	0.160	1.0000	0.130	1.0000
Equation 3 - RDTR				
Total Consumption	0.400	1.0000	0.410	1.0000
Nondurable Goods	0.350	1.0000	0.370	1.0000
Durable Goods	5.370	0.9990	5.330	0.9991

*** p<0.01, ** p<0.05, * p<0.1

Table 41: Summary Statistics Of Liquidity Constrained MWPTC Households*Panel A. Zero Liquid Assets Liquidity Constraint Only*

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	4,084	54.66	54	18.54
Permanent Monthly After-Tax Income	4,076	8,054	7,406	3,844
Number of adults in CU	4,084	1.903	2	0.908
Number of children under 18 in CU	4,084	0.620	0	1.185
Homeownership				
Doesn't Own Home	2,202	53.92%	----	----
Owens Home	1,882	46.08%	----	----
Education				
No High School	992	24.29%	----	----
High School	1,194	29.24%	----	----
Some College	790	19.34%	----	----
Associate's	421	10.31%	----	----
Bachelor's	467	11.43%	----	----
Master's	140	3.43%	----	----
Professional/Doctorate	80	1.96%	----	----
Race				
White	2,357	57.71%	----	----
Black	767	18.78%	----	----
Hispanic	713	17.46%	----	----
Native American	35	0.86%	----	----
Asian	196	4.80%	----	----
Multi-Race	16	0.39%	----	----
Marital Status				
Not Married	2,166	53.04%	----	----
Married	1,918	46.96%	----	----
Gender				
Male	1,872	45.84%	----	----
Female	2,212	54.16%	----	----
Region				
Northeast	764	18.80%	----	----
Midwest	885	21.78%	----	----
South	1,688	41.55%	----	----
West	726	17.87%	----	----

Panel B. Debt Threshold Liquidity Constraint Only

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	4,674	48.65	48	13.36
Permanent Monthly After-Tax Income	4,642	12,109	11,725	4,919
Number of adults in CU	4,674	2.071	2	0.781

Number of children under 18 in CU	4,674	0.741	0	1.051
Homeownership				
Doesn't Own Home	348	7.45%	----	----
Owns Home	4,326	92.55%	----	----
Education				
No High School	169	3.62%	----	----
High School	869	18.59%	----	----
Some College	983	21.03%	----	----
Associate's	455	9.73%	----	----
Bachelor's	1,452	31.07%	----	----
Master's	606	12.97%	----	----
Professional/Doctorate	140	3.00%	----	----
Race				
White	3,715	79.48%	----	----
Black	284	6.08%	----	----
Hispanic	418	8.94%	----	----
Native American	13	0.28%	----	----
Asian	149	3.19%	----	----
Multi-Race	95	2.03%	----	----
Marital Status				
Not Married	1,384	29.61%	----	----
Married	3,290	70.39%	----	----
Gender				
Male	2,350	50.28%	----	----
Female	2,324	49.72%	----	----
Region				
Northeast	969	20.92%	----	----
Midwest	995	21.49%	----	----
South	1,549	33.45%	----	----
West	1,118	24.14%	----	----

These summary statistics measure CUs which were liquidity constrained across one definition only.

Table 42: Summary Statistics Of Liquidity Constrained EITC Households*Panel A. Zero Liquid Assets Liquidity Constraint Only*

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	7,335	55.69	57	19.10
Permanent Monthly After-Tax Income	7,315	7,223	6,871	3,679
Number of adults in CU	7,632	1.781	2	0.892
Number of children under 18 in CU	7,632	0.530	0	1.032
Homeownership				
Doesn't Own Home	3,828	51.22%	----	----
Owns Home	3,645	48.78%	----	----
Education				
No High School	2,164	29.50%	----	----
High School	2,050	27.95%	----	----
Some College	1,143	15.58%	----	----
Associate's	522	7.12%	----	----
Bachelor's	964	13.14%	----	----
Master's	360	4.91%	----	----
Professional/Doctorate	132	1.80%	----	----
Race				
White	4,318	58.87%	----	----
Black	1,284	17.51%	----	----
Hispanic	1,244	16.96%	----	----
Native American	16	0.22%	----	----
Asian	326	4.44%	----	----
Pacific Islander	34	0.46%	----	----
Multi-Race	113	1.54%	----	----
Marital Status				
Not Married	4,283	58.39%	----	----
Married	3,052	41.61%	----	----
Gender				
Male	3,144	42.86%	----	----
Female	4,191	57.14%	----	----
Region				
Northeast	1,474	20.18%	----	----
Midwest	1,569	21.48%	----	----
South	2,870	39.30%	----	----
West	1,390	19.03%	----	----

Panel B. Debt Threshold Liquidity Constraint Only

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	8,913	48.24	48	13.97
Permanent Monthly After-Tax Income	8,910	10,480	10,106	4,440

Number of adults in CU	9,405	2.004	2	0.857
Number of children under 18 in CU	9,405	0.679	0	1.016
Homeownership				
Doesn't Own Home	1,187	12.71%	----	----
Owns Home	8,151	87.29%	----	----
Education				
No High School	581	6.52%	----	----
High School	1,621	18.19%	----	----
Some College	2,085	23.39%	----	----
Associate's	860	9.65%	----	----
Bachelor's	2,414	27.08%	----	----
Master's	935	10.49%	----	----
Professional/Doctorate	417	4.68%	----	----
Race				
White	6,635	74.44%	----	----
Black	629	7.06%	----	----
Hispanic	1,072	12.03%	----	----
Native American	41	0.46%	----	----
Asian	368	4.13%	----	----
Pacific Islander	32	0.36%	----	----
Multi-Race	136	1.53%	----	----
Marital Status				
Not Married	3,130	35.12%	----	----
Married	5,783	64.88%	----	----
Gender				
Male	4,563	51.19%	----	----
Female	4,350	48.81%	----	----
Region				
Northeast	1,505	17.00%	----	----
Midwest	2,108	23.81%	----	----
South	2,831	31.98%	----	----
West	2,408	27.20%	----	----

These summary statistics measure CUs which were liquidity constrained across one definition only.

Table 43: Summary Statistics Of Liquidity Constrained RDTR Households*Panel A. Zero Liquid Assets Liquidity Constraint Only*

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	7,622	53.77	53	18.88
Permanent Monthly After-Tax Income	7,592	7,534	7,220	3,697
Number of adults in CU	7,681	1.820	2	0.897
Number of children under 18 in CU	7,897	0.568	0	1.091
Homeownership				
Doesn't Own Home	4,141	53.51%	----	----
Owens Home	3,598	46.49%	----	----
Education				
No High School	1,743	22.87%	----	----
High School	2,334	30.62%	----	----
Some College	1,346	17.66%	----	----
Associate's	697	9.14%	----	----
Bachelor's	1,040	13.64%	----	----
Master's	340	4.46%	----	----
Professional/Doctorate	122	1.60%	----	----
Race				
White	4,652	61.03%	----	----
Black	1,249	16.39%	----	----
Hispanic	1,254	16.45%	----	----
Native American	39	0.51%	----	----
Asian	356	4.67%	----	----
Pacific Islander	11	0.14%	----	----
Multi-Race	61	0.80%	----	----
Marital Status				
Not Married	4,357	57.16%	----	----
Married	3,265	42.84%	----	----
Gender				
Male	3,536	46.39%	----	----
Female	4,086	53.61%	----	----
Region				
Northeast	1,611	21.28%	----	----
Midwest	1,612	21.29%	----	----
South	2,948	38.93%	----	----
West	1,401	18.50%	----	----

Panel B. Debt Threshold Liquidity Constraint Only

VARIABLES	(1) N	(2) mean	(3) p50	(4) sd
Age of CU reference person	7,912	49.13	48	13.76
Permanent Monthly After-Tax Income	7,887	10,526	10,253	3,885

Number of adults in CU	8,186	2.059	2	0.856
Number of children under 18 in CU	8,357	0.717	0	1.076
Homeownership				
Doesn't Own Home	639	7.68%	----	----
Owns Home	7,677	92.32%	----	----
Education				
No High School	351	4.44%	----	----
High School	1,662	21.01%	----	----
Some College	1,487	18.79%	----	----
Associate's	916	11.58%	----	----
Bachelor's	2,269	28.68%	----	----
Master's	941	11.89%	----	----
Professional/Doctorate	286	3.61%	----	----
Race				
White	6,385	80.70%	----	----
Black	554	7.00%	----	----
Hispanic	607	7.67%	----	----
Native American	31	0.39%	----	----
Asian	200	2.53%	----	----
Pacific Islander	0	0.00%	----	----
Multi-Race	135	1.71%		
Marital Status				
Not Married	2,409	30.45%	----	----
Married	5,503	69.55%	----	----
Gender				
Male	3,945	49.86%	----	----
Female	3,967	50.14%	----	----
Region				
Northeast	1,548	19.68%	----	----
Midwest	1,728	21.97%	----	----
South	2,704	34.37%	----	----
West	1,887	23.99%	----	----

These summary statistics measure CUs which were liquidity constrained across one definition only.

Table 44: ANOVA Test Results Of Equal Means

<i>Panel A. The MWPTC Sample</i>		
VARIABLES	(1) F-Stat	(2) P-Value
Age of CU reference person	307.98***	0.000
Permanent Monthly After-Tax Income	1803.05***	0.000
Number of adults in CU	86.61***	0.000
Number of children under 18 in CU	25.58***	0.000
Homeownership	3083.12***	0.000
Education	1396.96***	0.000
Race	126.45***	0.000
Marital Status	525.89***	0.000
Gender	17.24***	0.000
Region	1.10	0.2935
Overall MANOVA		
Wilks' Lambda	619.48***	0.000
Pillai's Trace	619.48***	0.000
Lawley-Hotelling Trace	619.48***	0.000
Roy's largest root	619.48***	0.000
<i>Panel B. The Expansion of the EITC Sample</i>		
VARIABLES	(1) F-Stat	(2) P-Value
Age of CU reference person	820.97***	0.000
Permanent Monthly After-Tax Income	2516.78***	0.000
Number of adults in CU	274.89***	0.000
Number of children under 18 in CU	89.60***	0.000
Homeownership	3564.73***	0.000
Education	1983.21***	0.000
Race	118.80***	0.000
Marital Status	928.66***	0.000
Gender	112.79***	0.000
Region	55.89***	0.000
Overall MANOVA		
Wilks' Lambda	860.95***	0.000
Pillai's Trace	860.95***	0.000
Lawley-Hotelling Trace	860.95***	0.000
Roy's largest root	860.95***	0.000
<i>Panel C. The RDTR Sample</i>		
VARIABLES	(1) F-Stat	(2) P-Value

Age of CU reference person	309.29***	0.000
Permanent Monthly After-Tax Income	2405.62***	0.000
Number of adults in CU	294.63***	0.000
Number of children under 18 in CU	76.47***	0.000
Homeownership	5372.49***	0.000
Education	1863.7***	0.000
Race	288.59***	0.000
Marital Status	1215.08***	0.000
Gender	18.73***	0.000
Region	22.98***	0.000
Overall MANOVA		
Wilks' Lambda	931.42***	0.000
Pillai's Trace	931.42***	0.000
Lawley-Hotelling Trace	931.42***	0.000
Roy's largest root	931.42***	0.000

*** p<0.01, ** p<0.05, * p<0.1. The null hypothesis of each ANOVA test is no significance differences in the variable mean between CUs which were only liquidity constrained by having zero assets and CUs which were only liquidity constrained by having a debt-to-income ratio above the threshold level. A significant p-value indicates that the two different groups of liquidity constrained households have significant differences between the particular variable. The "Overall MANOVA" tests if there are no significant differences between all variables combined by liquidity constraint group. A significant p-value indicates that the two different groups of liquidity constrained households have significant differences between all variables combined.

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