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The Earned Income Credit and Durable Goods Purchases

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I. Introduction

From humble beginnings in 1975 as a small program designed to offset the payroll taxes paid by low income workers, the Earned Income Credit (EIC) has grown into a major income support program. In 1996, the EIC transferred a total of $28.8 billion to over 19 million families (IRS 1998).

In contrast to other social programs that transfer benefits evenly over the calendar year, including Supplemental Security Income (SSI), Food Stamps (FS), and Temporary Assistance to Needy Families (TANF), the great majority of EIC benefits are paid during the tax filing period in the calendar year following the year of eligibility. Most EIC benefits are paid in one of two forms: reductions in tax liability that accrue to recipients when taxes are paid (between January 1st and April 15th) or increases in tax refunds that accrue when refunds are received (between the end of January and the end of May). As a result, the one-time payment received is larger than the periodic payments of other income support programs. For example, while the average EIC refund among recipients receiving refunds in 1996 was slightly over $1500, the average AFDC monthly check was $374, and the average monthly SSI benefit was $363 (December) (Committee on Ways and Means 1998).

The substantial size of EIC refund checks is sufficient to assist low-income consumers in purchasing big-ticket items. In this paper we ask whether there is evidence that the lumpy nature of EIC payments induces changes in expenditure patterns among recipients. In particular, we think that the EIC payment might alter the seasonal pattern of durable goods expenditure among its recipients. In order to address this issue, we use data from the Consumer Expenditure Survey (CES) and exploit the monthly nature of the data and the concentrated payment period for the benefits.

The use of the EIC to fund durable goods purchases may also help to explain the low levels of interest in the Advance EIC.[1] Since 1979 when the Revenue Act of 1978 made the EIC a permanent program, recipients have been eligible to spread a portion of their benefit receipt evenly across the calendar year. This program provision, called the Advance EIC (AEIC), has experienced miniscule levels of participation despite the fact that recipients ought to prefer receiving the same nominal dollar amount earlier rather than later because of time value of money. In 1996, 192,000 families received $76 million in AEIC payments representing only 1 percent of returns and 0.3 percent of benefit payments (IRS 1999). If individuals plan to use the EIC to fund large purchases and have limited access to credit and to formal financial markets, they may be better off waiting to receive their EIC as a large check. If instead recipients desire to purchase small items, they would be better off receiving their money earlier because they could purchase these items earlier. On the other hand, people with savings accounts, even if they wanted to purchase a large item, would be better off receiving payments earlier because they could earn interest until the purchase occurred. However, for individuals with limited ability to store money safely and the desire to make a substantial purchase, the EIC may serve as a safe mechanism for savings. One further indication that this may be a possible motivation behind the lack of interest in the AEIC is the fact that only 21 percent of EIC recipients in tax year 1994 had any taxable interest earnings as compared with 56 percent of non-EIC recipients (GAO 1996 and IRS 1997).

If the EIC leads to increased durable goods and other purchases, we expect these purchases to take place soon after refund checks are received. Fortunately, refunds are received during a very concentrated portion of the calendar year. Individuals must file taxes between January 1st and April 15th, and the IRS reports that most refunds are sent out between four and six

[1] We note that it is not entirely costless to receive Advanced EIC payments. Eligible recipients must file IRS form W-5 with their employer in order to receive the advanced payments. (Estimated time of completion 43 minutes.) To the extent that low income households have unstable employment

weeks after filing.[2] This suggests that most refund checks should be received between February 1st and May 30th. Data on the timing of both EIC payments where EIC exceeds liability for tax (i.e. the refundable portion) and individual income tax refunds bear out this prediction. Figure 1 shows the percent of total IRS payments of each type paid out by month in 1998. The data show that the great majority of payments occur between February and May, with 92.4 percent of EIC payments and 85.0 percent of individual income tax refunds occurring during this period. The data also show that EIC refunds are received earlier than other refunds. While EIC refunds peak in February (45.6 percent) followed by March (30.1 percent), individual income tax refunds are highest in March (24.1 percent), April (23.1 percent), and May (24.1 percent).[3] The graph in Figure 1 represents a distribution of the timing of payments that is probably slightly later than the distribution of the receipt of refunded dollars by tax filers. About one-half of EIC recipients file returns completed by paid preparers (GAO 1996). Since most professional tax preparation services offer high interest refund anticipation loans that allow filers to receive money as soon as two days after filing, EIC recipients may well be receiving their refunds somewhat earlier than indicated in the IRS data displayed in Figure 1. Note that prior to 1992, the IRS made more EIC payments in March than in any other month.

In order to investigate whether EIC recipients spend more on all types of goods and durable goods in particular during the tax refund season, we utilize the empirical strategy of Paxson (1993) to estimate expenditure equations that allow differences in income seasonality to affect seasonal consumption patterns. The empirical model estimated is derived from an expenditure model that allows for imperfect ability to smooth consumption across seasons such

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relationships it may be difficult for them to keep this form on file. We will return to this issue in the conclusions.

[2] Tax payers can request extensions and file their taxes following the April 15th deadline. This is very rare for low income taxpayers. Only about 0.5 percent of taxpayers with incomes under $30,000 file extensions. Over 20 percent of taxpayers with incomes in excess of $100,000 file extensions (IRS 1998).

[3] Other evidence also suggests that low income filers anticipating refunds filer earlier than average. (Slemrod et al. 1997).

that actual expenditure in each season is a weighted average of income in that season and desired expenditure in that season.

In looking for effects of the EIC on seasonal expenditure patterns, we find that the EIC leads to increased levels of expenditure during the tax-filing season. In particular, we find that EIC eligible households spend approximately 4 percent more in total during February, the modal month of EIC refunds, and between 10 and 12 percent more on durable goods. This supports our conjecture that the EIC facilitates the purchasing of big-ticket items by low-income families. At the same time these estimates suggest that EIC recipients smooth expenditure somewhat since the average increase in expenditure is less than the average refundable EIC amount.

The remainder of the paper is structured as follows. In section two, we discuss the data. In section three, we present our model and estimation strategies. Section four details our results and section five concludes and suggests avenues for future research.

II. Data

To explore the issues discussed above, we use data from the 1982 through 1996 waves of the Consumer Expenditure Survey (CES). The CES is a survey that asks a nationally representative sample of consumer units extensive questions about their monthly expenditure patterns and limited questions about their income, assets, and family structure. The CES unit of analysis, the consumer unit, is an individual or group of individuals living together who are either related by blood or legal arrangements, or who use their income to make joint expenditures in two of the three categories: housing, food, and other living expenses. Throughout the remainder of the paper, we use the terms consumer unit, family and household interchangeably. The CES surveys consumer units four times in consecutive three month increments about their expenditure over the previous three months.[4] For example, one consumer unit may be questioned in February

[4] The CES actually surveys families five times. However, data are only reported for surveys two through five. Throughout the paper we refer to these as surveys one through four.

about expenditure in November through January, in May about expenditure in February through April, in August about expenditure in May through July, and then finally in November about expenditure in August through October. New units enter the sample every month. Most questions refer to the amount consumed in each of the previous three months. However, a limited set of questions ask about the combined amount consumed in the entire three month period and then record monthly amounts that are these quarterly amounts divided by three. The categories surveyed at the quarterly level include food, alcoholic beverages, gasoline and motor oil, reading, personal care, tobacco, and fees and admissions. We structure all expenditure data in a monthly format and do not adjust for the smoothing that may be induced by dividing some quarterly totals by three. We do not believe that this is a problem because expenditure in these categories is likely to be relatively constant from month to month -- a fact that in part explains why expenditure in these areas is not asked separately for each month. All expenditure data are converted to 1998 dollars using the monthly personal consumption expenditures (PCE) total price index.

The CES asks respondents questions about their incomes during the first and fourth waves of questioning. These questions refer to income during the previous twelve month period which only corresponds to the calendar (and tax year) if the recipient is questioned during January. The CES captures a less comprehensive set of income sources than some other data sets, most particularly the Current Population Survey (CPS), but contains information about expenditure in a variety of different categories that are unavailable from other sources.

In order to determine the value of the EIC payments that the consumer unit is eligible to receive, we use data on family structure and income from the CES member files. These files provide information on the income, relationship to reference person and age of the individuals that comprise the consumer unit. The need to use the member information arises from the fact that for families with complicated structures (which are often lower income families), the consumer unit is different from the tax-filing unit. This is especially true for consumer units that

include either multiple generations or cohabiting adults. For each individual in the consumer unit, we determine tax filing status (whether married to another member of the consumer unit or not), tax unit income (the sum of the incomes of married individuals), and the number of children he or she is eligible to claim according to EIC program restrictions. In cases where more than one tax filing unit within the family can claim a child for EIC purposes, we assign that child to the individual with the highest income, in accordance with EIC program rules. We assume that all married individuals file jointly which is a reasonable assumption for our purposes because married people filing separately cannot claim the EIC.

We define consumer unit member income as the sum of salary, non-farm, and farm income. While the adjusted gross income measure used by the IRS for EIC purposes also includes additional sources of income such as interest income, dividends, and alimony these are not available in the member files. In light of these omissions, we are underestimating individual taxable income. Some sense of the size of this underestimation can be generated by comparing Adjusted Gross Income (AGI) estimates from the CES to those from the Current Population Survey (CPS), a survey that contains a more comprehensive array of income variables. For tax year 1995, median household head AGI in the CPS among those households with non-zero AGI was $38,072 while median reference person AGI in the CES was $30,000. (Medians are more relevant than means because of differences in top-coding.)

Because the CES income data do not necessarily correspond to the calendar year, we calculate income data that corresponds to the tax year by taking a weighted average of the incomes reported in the first and fourth interviews where the weights are based on the months for which the tax and interview year overlap. Having calculated tax unit income and the number of eligible children, we impute EIC payments for each tax unit within the consumer unit based on the EIC program schedule. Consumer unit EIC payments equal the sum of the tax units' EIC payments. We calculate EIC benefits based on our best estimate of income and family structure

for the year before the year in we observe February expenditure. In this way, we are predicting EIC payments that will be received in the same time frame that we observe expenditure.

It is important to note that between 1982 and 1996 the EIC increased in generosity numerous times including two major program expansions. Between 1990 and 1991, the average credit grew from $601 to $813 (nominal) per recipient family (Committee on Ways and Means 1998). In addition, the credit rate increased from 14 percent of earned income for all families with children to 16.7 percent for families with one child and 17.3 percent for families with more than one child. The second major expansion occurred between 1993 and 1994. In this expansion the average credit remained relatively flat, but the number of recipient families grew by 20 percent, in part because of the inclusion of a small credit for families without children**.**

In the estimation section, income is defined as total consumer unit before tax income plus imputed EIC benefit. Ideally we would be using a reliable measure of after-tax income. However, after tax income in the CES is imputed as before tax income minus reported tax payments net of refunds. Unfortunately, the measures of both tax payments and tax refunds do not appear to be accurate. In contrast to IRS reports that 70 percent of tax return filers received overpayment refunds in 1996, the CES reports positive refunds in less than 40 percent of consumer units in the same year. This underreporting of refunds in the CES appears to be especially pronounced among low-income filers. While the IRS reports positive refunds for over 70 percent of tax units with incomes below $15,000, less than 20 percent of consumer units with before tax income below $15,000 (and above $1) report any refund amount to the CES[5] (IRS 1998). In light of these data issues, we do not use the refund data from the CES in our analyses. Thus far, we have not adjusted the income data to account for the underreporting in the CES.

[5] While some of these discrepancies can be explained by the fact that not all individuals are required to file taxes, the differences are too large and persist too high into the income distribution to be explained by this fact alone. There is a thirty percentage point gap in refund percentages even among individuals with incomes between $40,000 and $50,000.

We look at consumption expenditure in three different categories: total expenditure, durable goods expenditure, and non-durable goods and services expenditure. Durables is comprised of expenditures on household furnishings and equipment, televisions and other home electronics, and vehicle purchases. Non-durables includes both non-durable goods and services such as expenditures on food, clothing, and entertainment.[6] Expenditures on health care, education, shelter, utilities, vehicle finance charges, vehicle insurance, and other household operations are included in the total expenditure category, but in neither durables nor non-durables. We are most interested in the big-ticket items represented in the durable goods category and will use non-durables as a comparison group. One indication that this definition of durable goods represents the big-ticket items we are most interested in is that durable goods spending has a lower mean and a higher standard deviation than non-durable goods spending.

Table 1 presents variable means for all families and separately for those who we impute are EIC eligible and non-eligible. In approximately 10 percent of the family-month observations, we impute that the family was EIC eligible in that year. In addition, among eligible families the average amount of credit was $794. EIC eligibles have lower income than non-eligibles: $19,547 (1998$) versus $43,643. As expected, EIC families spend less on average per month both on durable and non-durable goods. For all families, monthly durable goods expenditure represents approximately 18 percent of total monthly expenditures while non-durable goods spending represents approximately 41 percent. Finally, EIC families are much more likely to have children, 90 percent versus 35 percent among non-eligible families, and therefore have larger average family size. Among EIC eligible families, we note that average annual total expenditures are greater than average total income. This is a common feature of CES data and

[6] Our definition of non-durables includes food, alcohol, apparel and services, gasoline, other vehicle expenses, public transportation, fees and admissions, pets and toys, other entertainment, personal care, reading, tobacco, cash contributions, and personal insurance and pensions. The interpretation of the regressions below is robust to the exclusion of cash contributions and personal insurance and pensions from the non-durables category. This definition differs slightly from those used by other authors.

arises from the under-reporting of income and the exclusion of money from many income support programs from the income definitions.

Table 2 displays average expenditure in the three consumption categories (total, durables, and non-durables) by month, separately for all families and for EIC eligible and non-eligible families. A number of patterns emerge from looking at this table. For both EIC eligible and non-eligible families, total expenditures and non-durable goods expenditures peak in December while durable goods expenditures peak in July. For both groups, the lowest levels of expenditure in both categories occur in January and February.[7]

III. Model and Estimation Strategies

We investigate the role of the EIC in the expenditure patterns of recipients using the model of consumption and income seasonality utilized in Paxson (1993). Paxson begins with a perfect consumption smoothing model and then extends the model to allow for the imperfect ability of households to smooth consumption by permitting expenditure in a given period to partially track income from that period. Actual expenditure by individual *i* in month *m*, E_{im}, is written as a weighted average of desired monthly expenditure, E_{im}^{*} and monthly income, Y_{im}:

$$E_{im} = E_{im}^{*}(1-\pi) + Y_{im}\pi \qquad (1)$$

where π is between 0 and 1 and measures the extent to which seasonal expenditure tracks seasonal income. When $\pi = 0$ expenditure is independent of the timing of income; whereas when $\pi = 1$ expenditure perfectly tracks seasonal income. Both optimal expenditure in month *m* and income in month *m* can be written as shares of annual income such that Equation (1) can be rewritten as the following:

$$E_{im} = Y_i\left[\beta_m(1-\pi) + A_{im}\pi\right] \qquad (2)$$

[7] The expenditure patterns observed in levels (as in Table 2) are different from those that emerge from looking at logs which will be seen in the regression results in Tables3 a-c.

where Y_i is annual income for individual *i*. The β_m sum to one across months and measure the effects of preferences and prices on expenditure. A_{im} is the fraction of annual income earned by individual *i* in month *m*, and the sum of A_{im} across months equals one for each individual. As above if $\pi = 0$, the only determinants of the seasonal pattern of expenditure are prices and preferences.

For estimation purposes, Y_i is redefined as average monthly income (total annual income divided by 12), and β_m and A_{im} are multiplied by 12 so they average one across seasons. Equation (2) may then be rewritten as follows by taking the natural logarithm and then taking the first-order Taylor series expansion around $\beta_m = 1$ and $A_{im} = 1$:

$$\ln(E_{im}) = \ln(Y_i) + (1-\pi)\beta_m + \pi A_{im} - 1. \qquad (3)$$

If households perfectly smooth, the coefficient on A_{im} will be zero.

Paxson is concerned about possible measurement error in A_{im}, and so develops a reduced form model of seasonal expenditure.[8] Since we also have concerns about the measurement of A_{im}, in particular income is only reported on a yearly basis and we do not know the month in which the EIC refund is received by a given consumer unit, we estimate the following reduced form equation:

$$\ln(E_{im}) = \alpha_0 + \alpha_1 \ln(Y_i) + M\gamma + (M \times R)\phi + \varepsilon_{im} \qquad (4)$$

In the empirical implementation of equation (4), E_{im} is expenditure by individual *i* in month *m* for the given category of expenditure (durables, non-durables, or total), Y_i is average monthly income for individual *i*, *M* is a vector of monthly dummy variables, *R* is a dummy variable equal to 1 if the family is EIC eligible, α_0, α_1, γ and ϕ are parameters or parameter vectors to be

[8] This is done by rewriting the share of annual income received in month *m* as a component that is common to all individuals, A_m, plus an additional month effect, $Z_i A_m^Z$, for individuals with a particular characteristic, Z, which in our case is an indicator for EIC eligibility. Paxson actually estimates an instrumental variable version of this equation while we only estimate the reduced form specification.

estimated and ε_{im} is the household-month error term.[9] In estimating this equation, we also control for year specific fixed effects and family size. Throughout we calculate standard errors that are robust to observing the same consumer unit multiple times. In the concluding section, we discuss implications of the mismeasurement of *R* caused by our imputation procedure.

In the estimation section, we estimate equation (4) focussing on the coefficients on the interaction between month and EIC eligibility, ϕ. These coefficients measure the extent to which the expenditure pattern of EIC eligible families differs from that of other families. If EIC receipt affects expenditure patterns, in other words if individuals are unable to perfectly smooth consumption, we expect the coefficients ϕ to be largest during the EIC refund season. Similarly, if the EIC leads to the purchase of big-ticket items the difference in the coefficients should be greater for durable goods than for non-durables.

IV. Results

Tables 3a-c present results for a simple regression of log expenditure (by expenditure category) on income, month, and family size, controlling for year fixed effects. These estimates omit any measure of EIC eligibility. We estimate that the elasticity of expenditure with respect to income is approximately 0.25 and find evidence of seasonality in expenditure.[10] Figures 2a-c graph the estimated monthly coefficients relative to September (the omitted month throughout the paper). Looking at the monthly pattern of expenditure, we observe low relative levels of expenditure in the first third of the year. Expenditure is especially low in February, a month that is both shorter than others and follows on the heels of the Christmas spending season. This is followed by increased expenditure in the summer months and another dip in October and November. Finally, there is a large rise in December that accompanies the Christmas season.

[9] Following Paxson, each element of γ, $\gamma_m = (1-\pi)\beta_m + \pi A_m - 1$ and each element of ϕ, $\phi_m = \pi A_m^Z$.

The year dummies show that in most years expenditure was higher than in 1995 (the omitted year). In addition, average monthly expenditure is higher in the mid- and late 1980s than in the early 1980s and the early 1990s. Finally, the coefficient on family size indicates that a one person increase in the number of people in the family increases expenditure by eleven percent.

The monthly pattern of durable goods expenditure is quite similar to that for total expenditure, although the magnitudes of the coefficients tend to be larger. Durable goods purchases are also low in the first part of the year and highest in December. December expenditures are nearly fifty percent higher than expenditures in September. There is an additional durable goods spending increase at the start of summer in May and June. The results for non-durable goods and services are nearly identical to the results for total expenditure.

The remainder of the coefficients in the regressions show that the elasticity of expenditure with respect to income for both durables and non-durables of 0.25 is equal to that for total expenditure. In addition, we find that an extra member in the family increases durable goods spending by 9 percent and non-durable spending by 14 percent. This pattern is not surprising because durable goods are more commonly shared by members of a household. While the patterns for the year effects in these regressions are also similar to those in the regression for total expenditure, the magnitude of these effects is slightly larger in the durable goods regression due to the greater cyclical sensitivity of durable goods spending. In the remainder of the paper, we only present coefficient estimates for the monthly effects and for the interaction between the monthly effects and EIC eligibility (and in some cases other categories). In these additional regressions, the coefficient estimates for the year effects, family size, and income are broadly similar to those in these preliminary regressions.

We now turn to the results comparing non-EIC eligible households to those who are EIC eligible. Tables 4 a-c present monthly effects for each of three expenditure categories. Each

[10] This elasticity is lower than expected because of the combination of the shape of the log function and extremely low income families. If we reestimate the regressions excluding families with very low incomes

section of the table represents a different expenditure category -- Total (section a), Durable Goods (section b), Non-Durable Goods and Services (section c). Column one of each section of the table presents the estimates of the monthly effects for the non-eligible population. Column three presents the additional monthly effects for the EIC population and represents the difference in expenditure in each month between the eligible and non-eligible populations. Therefore, the predicted seasonal pattern for EIC recipients is the sum of columns one and three.

The bottom of each panel reports the p-values for five different tests, the first four analogous to those presented in Paxson (1993). The first statistic reported is the p-value for the test of whether there is any monthly pattern in expenditure. In other words, we test whether the monthly effects for the non-EIC population are jointly zero. The second statistic is the p-value for the test of whether the monthly effects for the EIC population (the sum of the monthly coefficients and the month-EIC indicator interaction) are jointly zero. This test measures whether EIC recipients have any monthly expenditure pattern. The third statistic is the p-value for the test of whether the month effects for the EIC population are different from the month effects for the non-EIC population, i.e. are the coefficient estimates for the month-EIC eligibility interactions jointly significant. Finally, the fourth and fifth statistics reported are from tests for whether the difference in seasonality between the EIC and non-EIC populations are constant over different time periods. The fourth statistic is for the test of whether the difference in seasonality between the EIC and non-EIC population is constant over the entire year while the fifth test statistic is for the test of whether this difference in seasonality is constant from January-October. We construct the final test statistic in order to determine whether there are non-constant seasonal differences in expenditure excluding the effects of Christmas. We are most interested in these final two test statistics because if we can reject that the difference in the expenditure patterns is constant, we may be observing an EIC induced change in expenditure patterns. We graph the estimated

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this elasticity becomes much higher.

seasonal patterns for EIC and non-EIC families, and the marginal effect of the EIC by expenditure category in Figures 3a-c.

For total expenditure, we find evidence of strong seasonality in expenditure for all households, similar to that presented in Table 3a and Figure 2a. We also easily reject the hypothesis that there is no expenditure seasonality for EIC eligible households. Our results show that the seasonal patterns for EIC recipients are different from the patterns for non-recipients. This is evident in the negative and statistically significant coefficient estimates in Column 2 and in the p-value of 0.000 for the third test. This implies that EIC eligible families spend less in every month than the non-eligible population, controlling for income. This arises because estimating a low elasticity of expenditure with respect to income implies that we over-predict average monthly expenditure for low-income households. More importantly, we can also reject that the difference in expenditure between the two populations is constant over the entire year or constant for the first ten months of the year.

Three particular months stand out when assessing the differences between the EIC eligible and non-eligible populations in these total expenditure estimates. First, while EIC eligible households spend an average of 12 percent less per month, they spend 15 percent less than other households in June and 14 percent less in July. This may be because the income of EIC recipients limits their ability to take vacations or buy cars, two activities that are concentrated in the spring and summer months. Second, EIC eligible households spend only 9 percent less in February than other consumers. Additional tests demonstrate that EIC recipients consume more in February, relative to non-recipients, than in any other month. This may be the result of expenditure patterns induced by the EIC. As discussed above, February is the modal month of EIC refund payments. The other major EIC month, March, appears to be more typical although the coefficient is slightly higher than in most other months. These suggestive results will be investigated in more detail below.

Table 4b and Figure 3b present results for durable goods. For durable goods, we also see evidence of differential expenditure seasonality among EIC recipients relative to non-recipients. As above, we easily reject all five of our test statistics. For durable goods, the relative differences in expenditure are no longer high in June and July, however we continue to see a smaller expenditure difference in February. The February difference is more of an outlier for durable goods than it was for total expenditure with a difference between eligibles and non-eligibles of -4 percent relative to an average difference of -14 percent. We also see expenditure differences between eligibles and non-eligibles that are relatively small in both March (-10 percent) and April (-8 percent). We can reject that the difference in February is equal to the difference in all other months (at the 99 percent level) except March (we can only reject at the 95 percent level) and April. This provides support for our hypothesis that the EIC may induce increased durable goods spending. EIC recipients appear to concentrate a higher portion of their durable goods spending during the concentrated period when most EIC payments are received. For durable goods, we also see a pronounced difference in relative expenditure in December with spending just over 21 percent lower among EIC eligible households relative to non-eligible households.

The pattern for non-durable expenditure is similar to that for total expenditure. We continue to see high relative spending levels in February and lower relative levels in June and July. For non-durables, the coefficient estimate on the February-EIC interaction is slightly less exceptional than was the case for durable goods with a difference in expenditure of 8 percent relative to an average difference of 11 percent. We can reject that the February effect equals that in any other month with the exception of December, a month in which the relative level of non-durable spending is also high.

While the EIC may induce the expenditure patterns we observe in February for all three categories of expenditure and in February through April for durable goods spending, other factors correlated with EIC eligibility, namely children and income, may be related to seasonal preferences in expenditure. If this is the case, the coefficients on EIC eligibility are partially

capturing these differences in preferences. In addition, it is possible that there are systematic differences in income seasonality between EIC eligible households and other households due to factors other than EIC receipt. In particular, the seasonal income pattern for poorer families, may differ from that of more well-to-do families. This may also influence our findings. We explore both of these issues below.

Differences in Preferences and Income Seasonality

One possible reason for the difference between EIC and non-EIC families in their monthly expenditure is differences in seasonal preferences for spending. The specification of equation (4) assumes that preferences, as represented by γ, are constant across all families. EIC families are different from other families in two major ways that may be correlated with preferences. First, EIC eligible families are much more likely to have children (see Table 1). Second, in order to receive EIC, families must have income below a certain threshold. As a result, EIC eligible families are on average much poorer than non-eligible families. We think it may be possible that families with children or with low-income have different seasonal spending preferences than other families. For example, families with children may wish to purchase more in the back to school shopping season than families without children.

If families with children desire to purchase more in the first part of the year, particularly in February, the results from Tables 4a-c may simply reflect this difference in preferences rather than expenditure patterns induced by the seasonality of their income due to the EIC. In order to address this, we look for different seasonal expenditure patterns for families with and without children, not controlling for EIC receipt.[11] We replace the interaction between month and EIC eligibility in equation (3) with an interaction between month and a dummy equal to one if the consumer unit contains any children. The results are depicted in Figures 4a-c and displayed in Tables 5a-c. We are able to reject our first four hypothesis tests for all three spending categories.

In particular, we can reject a constant difference in seasonality between households with and without children. However, we cannot reject that the difference in durable goods spending between families with and without children is constant during the first ten months of the year.

There are two important patterns evidenced in the coefficients on the interaction between month and having children. First, while having children may induce higher total expenditure in February, there is little evidence that having children increases durable goods expenditure in February. The difference in total expenditure between households with and without children is smaller in February than in most other months. However, for durable goods, the coefficient on the February-children interaction is only higher than the coefficient on the August interaction. The results for non-durables are similar to the results for total expenditure. Second, having children increases expenditure in December for all three categories of spending. This is especially true of durable goods: families with children consume 4 percent less in the average month than families without children, but consume 12 percent more in December. This result may easily be attributed to Christmas. Having children also seems to lead to a drop in total expenditure in both May and June and an increase in both total and non-durable expenditure in August. The high relative levels of total and non-durable expenditure in February among families with children may contribute to the results we find for EIC eligible versus non-eligible households. While the similarity in expenditure patterns for durable goods between EIC families and all families with children is less pronounced, we still think it may be important to control for preference differences between families with and without children in investigating the effects of the EIC on durable goods expenditure as well.

In order to account for potential differences in preferences by child status, we estimate equation (4) restricting the sample to families with children. The results for this subset of families are presented in Tables 6a-c and depicted in Figures 5a-c. The effect of the EIC for this sub-sample closely parallels the results for the entire population. For all three expenditure

[11] We define children as having anyone in the household under 19.

categories, we continue to reject that there is a constant difference in seasonality between EIC and non-EIC households both for the entire year and for January through October. We continue to observe the largest differences between the EIC and non-EIC populations in total and non-durable expenditure in the summer months and the smallest difference for all types of spending in February. As was the case for the entire sample, the February-EIC interaction coefficient is most distinctive for durable goods, and the March and April durable goods interactions also continue to be relatively high. Testing these numbers versus the other monthly interactions, we can reject that the February-EIC interaction coefficient equals any of the other monthly interactions at the 95 percent level with the exception of May for total expenditure, and March (88 percent level) and April (90 percent level) for durable goods. This provides continued support for our hypothesis that the EIC leads to increased expenditure in tax season, especially for durable goods. We conclude that the differences observed in Tables 4 a-c are not being driven by the different child status of the two groups.

A final result that emerges from these tables and figures is that the differences in durable goods expenditure between EIC families with children and other families with children is highest in December. There is some reason to believe that this large December difference may not be due to the EIC, but rather to the fact that EIC families tend to be low income and may be limited in their ability to partake in the national Christmas spending spree. In light of this concern, we now turn to a comparison between the spending patterns of low and high-income families.

We are interested in whether the patterns in expenditure that we observed when comparing the EIC and non-EIC populations above can largely be explained by differences in income. This would be the case if either there is seasonality in income for low-income workers (including EIC recipients) that peaks at the same time as EIC receipt or if monthly spending preferences are related to income.

We begin by trying to rule out the potential for differences in income seasonality that are related to income level and correlated with EIC refund timing. There are other forms of income

seasonality observed during a calendar year in addition to that induced by the earned income credit. Other forms of tax refunds, particularly Federal overpayment refunds, are also mostly paid out between February and April, and most tax filers receive a refund. In 1996, approximately 70 percent of filers received an average refund of $1,335. While this is a substantial sum, it only amounts to approximately 3.5 percent of average adjusted gross income among all filers. In contrast, the 1996 average refundable portion of the EIC of $1,506 represented over 10 percent of AGI among EIC recipients, and EIC refunds were nearly 15 percent of AGI for those EIC recipients with incomes below $20,000. As mentioned earlier, we do not use the refund data from the CES in our analyses, but the presence of these other refunds is important to keep in mind.

The second potential source of income seasonality is seasonality in earnings from employment. In order to look at the pattern of earnings over the calendar year, we investigate the monthly pattern of earnings using the Outgoing Rotation Group (ORG) files from the monthly CPS from 1995 and 1996. These years are chosen because they are in the middle of the current expansion and the data are unlikely to be confounded by business cycle effects. We regress log income on a series of monthly dummies (excluding September) for individuals with yearly income above and below $30,000. Figure 6 shows the monthly dummy coefficients from these two regressions. The earnings measure is earnings last week.[12] Figure 7 shows the results from the same regressions when one-fourth of the value of imputed EIC payments are added to weekly earnings for eligible individuals. We allocate the imputed EIC benefits by month in proportion to the share of total refundable benefits paid out by the IRS in each month of 1996, as depicted in Figure1.

There are two patterns that emerge from these figures. First, while there is some earnings seasonality, especially among low-income workers, it follows a pattern quite distinct from that induced by the EIC. In particular, earnings peak during the summer and fall months and are low

during the spring and in December. Second, as shown in Figure 7, the income change induced by the EIC dwarfs these other income changes. Once EIC payments are added, the difference between February and December average earnings is 23 percent, and between March and December is 16 percent. By contrast, absent the EIC, the largest difference induced by seasonal earnings variation is 7 percent (between July and December). We conclude that difference in income seasonality between low and high-income individuals is unlikely to generate the seasonality differences observed in the expenditure regressions.

We now turn to the potential for seasonal spending preferences to be correlated with income. In Tables 7a-c and Figures 8a-c, we present results comparing expenditure seasonality for lower and higher income households where lower income is defined as having before EIC income below $29,200 (The upper limit of the second household income quintile in 1997, U.S. Census Bureau 1999). The tables and figures show that low-income individuals have seasonal expenditure patterns that are different from higher income households. In addition, we can easily reject that the monthly difference in expenditure is constant both all year and excluding November and December.

Two important patterns emerge from these results. First, as was hypothesized at the end of the last section, for all three categories of expenditure, we find that poorer households are distinct in their relatively lower levels of December expenditure. Coupled with this result we find that low-income individuals consume relatively more in January. Second, we do not see any spike in February for low-income families as a whole. Specifically, in many instances, we cannot reject that the coefficient on the interaction between February and low-income is identical or less than that in other months. This suggests that the high relative level of expenditure among EIC families in February is not driven by the fact that EIC families are low income.

To explore this further, we estimate equation (4) again, this time restricting the sample to families with pre-EIC income below $29,200. The results in Tables 8a-c explore differences in

[12] The sample used is the earnings sample of the outgoing rotation group files.

seasonality between all low-income individuals and low-income EIC recipients. These results are also pictured in Figures 9a-c. We continue to reject all five of our test statistics for all three categories of expenditure.

In this set of regressions we see higher levels of expenditure in February among EIC eligible families compared to other low-income families, although on average EIC families consume less than other low-income families. Our coefficient estimates suggest that EIC eligible families spend less than other low-income families in all three expenditure categories in all months except February and December. We can reject that any of the other coefficients is as large as the February coefficient at the 95 percent level with three exceptions. First, for all three spending categories, the December coefficient is either as large or larger than the February coefficient. Second, we cannot reject that the April durable goods coefficient equals the February coefficient. Finally, we can not reject that the August non-durable expenditure coefficient equals the February coefficient estimate. The higher relative coefficients in December and August correspond to the results we found earlier when looking at families with and without children. Our previous results suggest that these positive coefficients are the result of the presence of children in most eligible families.

The higher relative coefficients on the interaction between February and EIC eligibility in the regressions presented in Tables 4a-c cannot be explained away by preferences resulting from the low income or child status of eligible families. However, we do find that the patterns on December expenditure can be explained by the combination of higher levels of Christmas spending by families with children combined with lower levels of Christmas spending among families of limited means.

Before concluding, we look at the effects of EIC on expenditure from one additional angle by taking advantage of the program expansions that have taken place since 1975.

Program Expansions

If EIC receipt rather than the combination of being low income and having children is causing the expenditure pattern observed in the data, the patterns should be more pronounced after the program expansions. Similarly, households that would be eligible under the new rules, but were not eligible when they were observed in the sample should have a different expenditure pattern than individuals who were eligible when sampled.

To take advantage of the first of these ideas, we look at whether there was a different expenditure pattern among EIC recipients before and after the program expansions that occurred between 1990 and 1991. Between 1990 and 1991, the average credit grew from $549 to $808 (47 percent) while the number of recipient families grew from 12,612,000 to 13,105,000 (4 percent) (Committee on Ways and Means 1998). This was largely an expansion in generosity rather than in eligibility. In order to look at the effect of this expansion on expenditure, we add another set of monthly interactions that allow the seasonal pattern of expenditure to differ across EIC recipients before and after the 1991 expansions. The new estimation equation is:

$$\ln(E_{im}) = \alpha_0 + \alpha_1 \ln(Y_i) + M\gamma + (M \times R)\phi + (M \times R \times (Year > 1990))\tau + \varepsilon_{im} \quad (5)$$

Where $Year > 1990$ is an indicator variable equal to one if the consumer unit is observed after 1990 and τ is a vector of additional monthly effects arising from being EIC eligible after 1990. The results for all three expenditure categories are presented in Tables 9a-c. Here we use a slightly different set of test statistics that focus on the difference between EIC families before and after the expansions. Test one is a test of whether there is any difference between the two eligible groups, i.e., are the coefficients on the Month-Eligibility-Year interactions, τ, jointly equal to zero? Test two is a test of whether this difference is constant, i.e., are all the τ's equal? Test three is a test of whether there is a constant difference excluding November and December. Figures 10a-c present the pattern of expenditure for EIC eligible households before 1991, $\gamma + \phi$, the marginal effect of being eligible in 1991 and after, τ, and the pattern of expenditure for EIC eligible households in 1991 and after, $\gamma + \phi + \tau$.

For total expenditure we are unable to reject that there is no difference between the effects of EIC during the two time periods, and we can reject that the difference is constant over the first ten months only at the 90 percent level of significance. While the February coefficient is the largest, it is not significantly different from those in a number of other months. In particular, we cannot reject that the marginal effect in February is equal to the marginal effects in March, May, June, July, September, and October.

For durable goods, we can reject the following: that there is no difference between pre- and post-expansion families, that the difference is constant, and that the difference is constant during the first ten months of the year. In this case, we also see that the expansions had a large positive effect on spending in February relative to other months and relative to pre-expansion families. Post-expansion families spent 16 percent more in February on durable goods than pre-expansion families while in all other months they spent an average of 3 percent less. At the 99 percent level of significance, we can reject that the coefficient for February is equal to that in any other month, with the exception of March (we can reject at the 95 percent level), the other major month of EIC receipt.

In the case of non-durable expenditures, we cannot reject that there is no difference between pre and post expansion families and that the difference is constant. While the marginal effect in February of being eligible and being sampled after 1990 continues to be among the largest of all the monthly interaction coefficients, we cannot reject that it is equal to the coefficients in all other months except for April, September, and November.

This investigation into changes in expenditure induced by expansions in the EIC lends further credence to our hypothesis that the EIC increases spending during the month when most EIC payments are received. While the results for total expenditure and non-durable goods expenditure are weaker than before we explored the expansions in the EIC, the durable goods results continue to be very strong. An interesting conclusion we can draw from these results is that the seasonal expenditure effect of the EIC is exclusively measurable in the post 1990

expansion period. We believe this is true because the EIC grew in generosity. In 1993 the modal month for EIC receipt switched from March to February. We believe we do not see a March effect prior to 1993 because the program generosity was not sufficient to generate a measurable effect.

One potential issue with using the 1991 expansion as a dividing point is that the various expansions changed both the generosity of the program and the composition of the eligible population. This is especially true of the program expansion in 1994 when a group of poor families without children was given a small EIC. In light of this, we take advantage of the regime changes in a second way by comparing families that received the EIC with the set of families that would have received the EIC in 1995, but were ineligible in the year in which they were sampled. We estimate the following equation:

$$\ln(E_{im}) = \alpha_0 + \alpha_1 \ln(Y_i) + M\gamma + (M \times E_{1995})\psi + (M \times E_{1995} \times R)\phi + \varepsilon_{im} \quad (6)$$

Where $E_{1995} = 1$ if the consumer unit would have been EIC eligible in 1995 independent of whether they were EIC eligible when sampled. The vector ψ represents the marginal difference of being EIC eligible under 1995 rules relative to being ineligible under the 1995 rules, independent of the eligibility of the consumer unit in the year in which it was sampled. Because of the nature of the expansion there will be some families that would have been eligible in 1995 had they been sampled in 1995 but were ineligible under the rules in existence when they were sampled. The parameter ϕ represents the additional effect of actually being eligible when sampled. If the EIC affects expenditure we expect to see a seasonal effect in the ϕ parameters but no seasonal pattern in the ψ parameters.

The results for equation (5) are presented in Tables 10a-c and depicted in Figures 11a-c. We show three sets of monthly interactions. Column 1 shows the expenditure pattern of all families, γ, column 3 shows the marginal effect of being eligible according to the 1995 rules, ψ, and column 5 shows the marginal effect of being EIC eligible when sampled, ϕ. At the bottom

of the table we present four test statistics. First, we test whether individuals eligible in 1995 have different expenditure patterns from the ineligible, $\psi = 0$. Second we test whether there is a difference between those eligible according to 1995 program parameters and those eligible when observed in the sample, i.e., is $\phi = 0$. Finally, we test whether this difference between the eligible according to the 1995 rules and eligible when sampled is constant both over the whole year and for the first ten months of the year.

For total expenditure, we reject only the first two of our hypotheses. We fail to reject that the difference in expenditure pattern for the eligible when sampled relative to the eligible under 1995 rules is a constant. We find that the marginal effect of being interviewed in a year in which you are eligible relative to being eligible in 1995 is largest in February. We can only reject that the February-eligible when sampled interaction coefficient equals the interaction coefficient estimated in June, July, August, September and November.

For durable goods expenditure, we can easily reject our first two hypotheses; however, for the tests of constant difference between eligible under 1995 rules and eligible when sampled, we can reject only at the 89 percent significance level. We continue to see the strongest effect of eligibility in February. It is the only marginal effect that is greater than zero. However, we can only reject that the coefficient on the February-eligible when sampled interaction is different from the interaction coefficients in May, June, August, September, November, and December at the 95 percent level, and different from March as well at the 90 percent level.

For non-durable goods, we can reject all four hypothesis tests. In particular, we can reject that the differences between EIC eligible under 1995 rules and EIC eligible when sampled is constant. However, the February interaction coefficient is now the second largest; the largest interaction coefficient is now December. In addition, we can only reject that the February interaction coefficient is equal to the estimated coefficients in June, September, October, November, and marginally in March.

The results in this alternative analysis of regime changes are suggestive but are not nearly as strong as those that arise from comparing the effects of the EIC before and after the 1991 expansions.

Assessing Magnitudes

The results point to the conclusion that the EIC leads to increased spending on durable goods and to a lesser extent non-durable goods and services during the month of February, the most common month for EIC refunds during the most recent and most generous years of the EIC. For durable goods, the EIC increases February expenditure for all eligible families by 10 percent (a coefficient of -0.04 relative to an average coefficient of -0.14). For eligible families with children, durable goods expenditure in February is higher by 12 percent (a coefficient of -0.11 relative to an average coefficient of -0.23), and for low income families, February durable goods expenditure is higher by 10 percent (a coefficient of +0.04 relative to an average coefficient of -0.06). Finally, for families eligible before 1991 EIC increases February durable goods expenditure by 1 percent (a coefficient of -0.12 relative to an average coefficient of -0.13) compared to19 percent higher for families eligible after 1991 (a coefficient of 0.04 relative to an average coefficient of -0.15). For all specifications, EIC eligibility increases non-durable goods expenditures in February between 3 and 4 percent. Similarly for total expenditures, EIC eligibility increases spending between 2 and 5 percent in all specification.

If we assume that the EIC increases durable goods expenditure by 10 percent, non-durable expenditure by 3 percent and total expenditure by 4 percent, this translates into monthly spending increases of $40, $28 and $89, respectively. If we further assume that of the $794 average EIC payment, 76 percent is refunded (the average refundable portion over the 1982-1997 period) and 46 percent is paid out in February this yields an average expected payment among EIC recipients of $278 in February. A comparison between these two calculations suggests that

EIC recipients are spending about one-third of their refunds in the month in which the refund is received.

We believe that the estimate that families spend approximately one-third of their EIC refund in February may be biased downward due to imperfect EIC imputation. We know that some of the families imputed as EIC eligible are not actually receiving the EIC. This could be due to either their failure to file taxes or underreporting of income to the CES. As a result, the EIC should have no effect on their income seasonality and therefore no induced effect on their expenditure pattern.

VI. Implications

Our results suggest that EIC receipt induces a change in seasonal expenditure patterns. In particular, we observe an increase in February expenditure relative to that in other months with results that are strongest for durable goods. These results suggest that EIC recipients are unable to smooth expenditure perfectly. However, the evidence also implies that recipients spend less than the full amount of their refund in the month of receipt. In effect, some smoothing does occur.

Our finding that EIC recipients spend approximately one-third of the refundable portion of the EIC during the month of receipt suggests that if the advance EIC (AEIC) were costless, the average EIC household would be better off taking the advance EIC even if they are relying on the refundable portion as a forced savings mechanism. We draw this conclusion since the AEIC only allows employers to remit up to 60 percent of the total EIC as a supplement to pay. As a result, it would seem that households could use the non-advance refundable portion of the EIC as a savings mechanism while using the AEIC to greater smooth their income. As discussed earlier the AEIC is not costless, both because of the basic paperwork required as well as the greater employment instability among its targeted beneficiaries. Thus, any policy changes to reduce the

costs of receiving the AEIC may lead to increases in its take-up rate and improved welfare for EIC recipient households.

The work in this paper shows that income seasonality caused by EIC receipt leads to changes in seasonal expenditure patterns particularly for durable goods. In future work we hope to expand this analysis to look at narrower categories of expenditure. In this way, we hope to understand better the specific ways in which EIC refunds are spent. In addition, we plan to investigate measures of savings and credit to see what mechanisms facilitate the smoothing we observe in the data.

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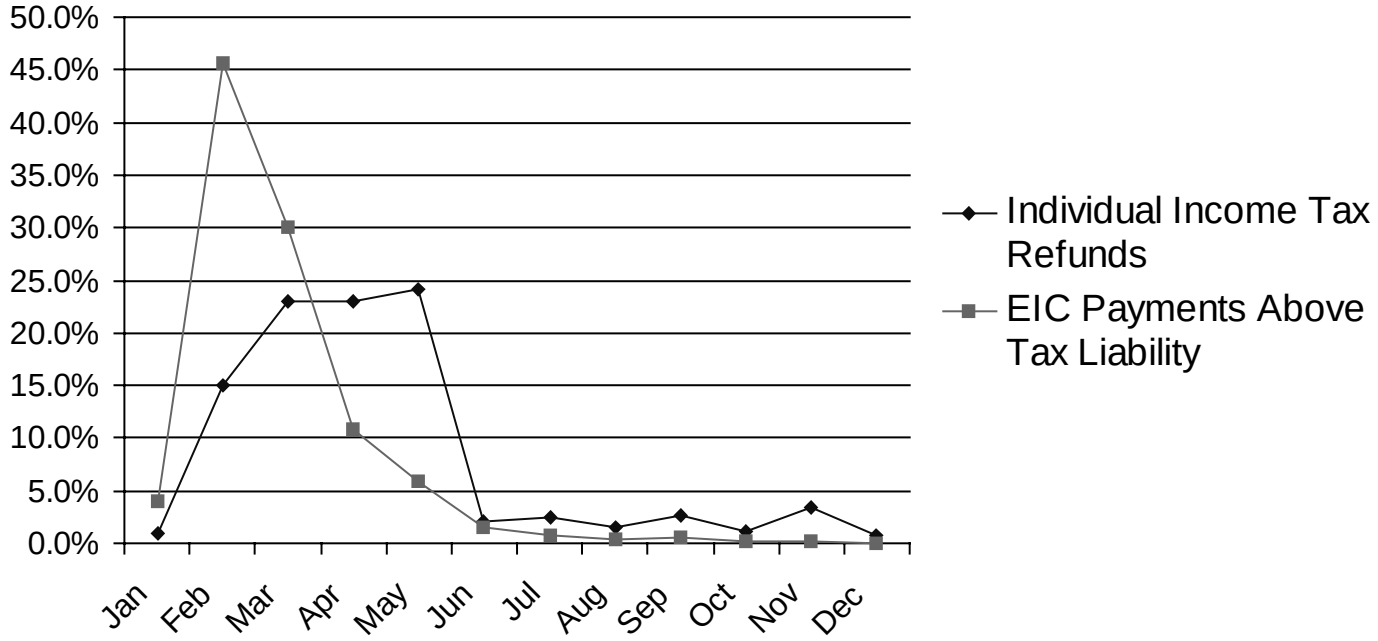
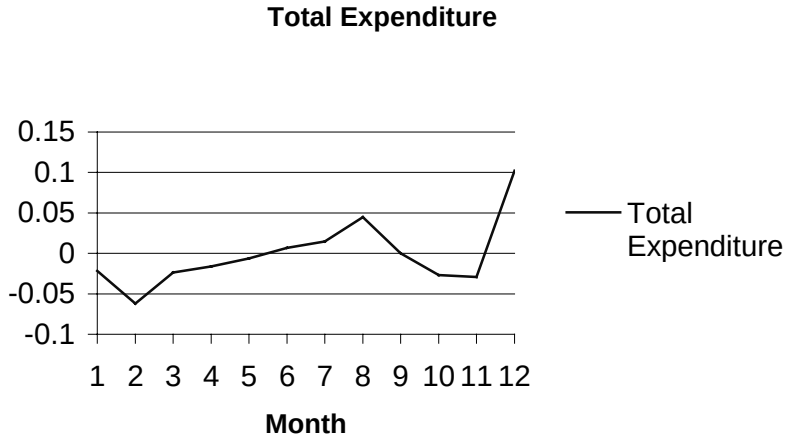
Figure 1: The Timing of Federal Income Tax Refunds



Figures 2a-c


Total Expenditure
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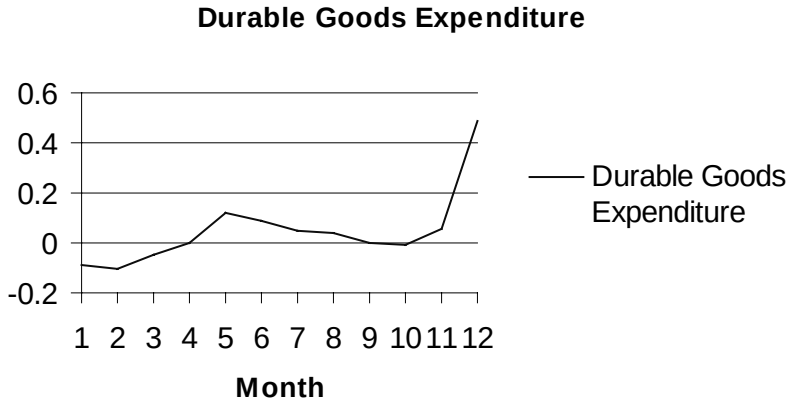
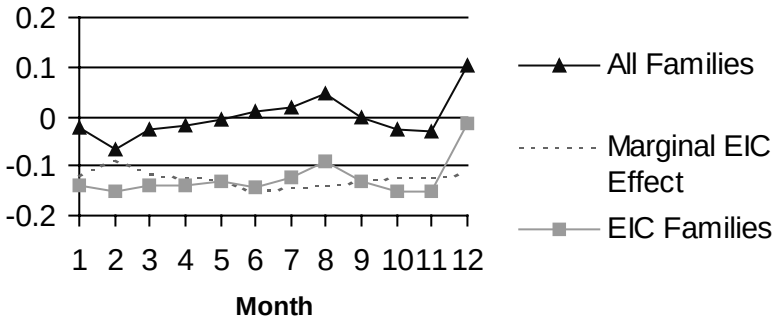
0.1
0.05
0
-0.05
-0.1
1 2 3 4 5 6 7 8 9 10 11 12
Month
Total Expenditure


Durable Goods Expenditure
0.6
0.4
0.2
0
-0.2
1 2 3 4 5 6 7 8 9 10 11 12
Month
Durable Goods Expenditure

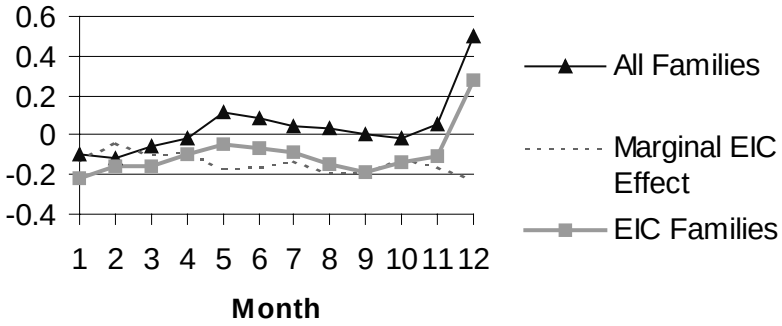

Non-Durable Goods and Services Expenditure
0.2
0.15
0.1
0.05
0
-0.05
-0.1
1 2 3 4 5 6 7 8 9 10 11 12
Month
Non-Durable Goods and Services Expenditure

Figures 3a-c

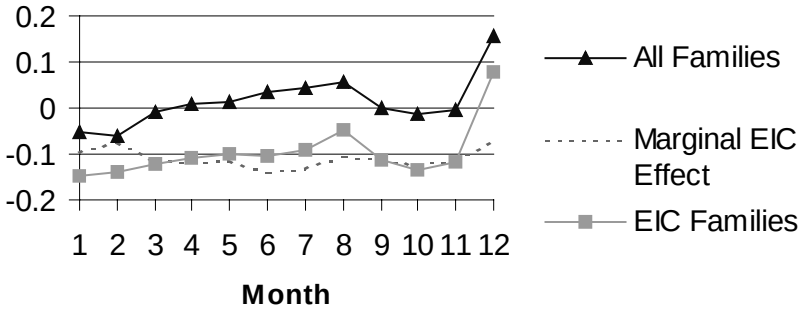
Total Expenditure:
Non-Eligible vs. EIC Eligible



Durable Goods Expenditure:
Non-Eligible vs. EIC Eligible

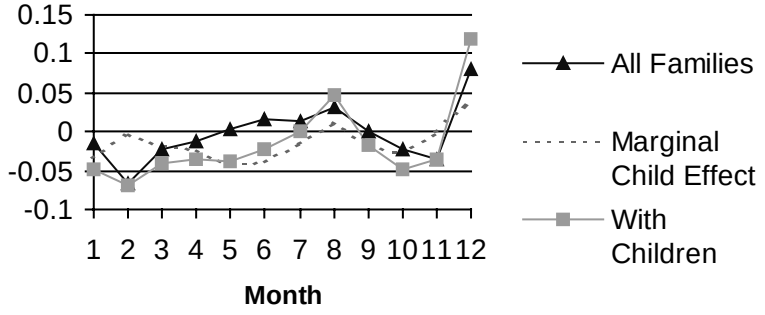


Non-Durable Goods and Services Expenditure:
Non-Eligible vs. EIC Eligible

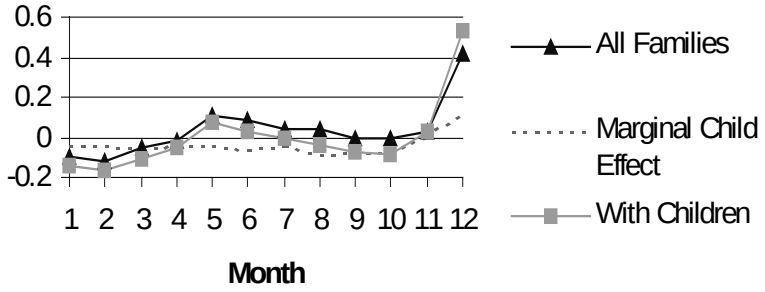


Figures 4a-c

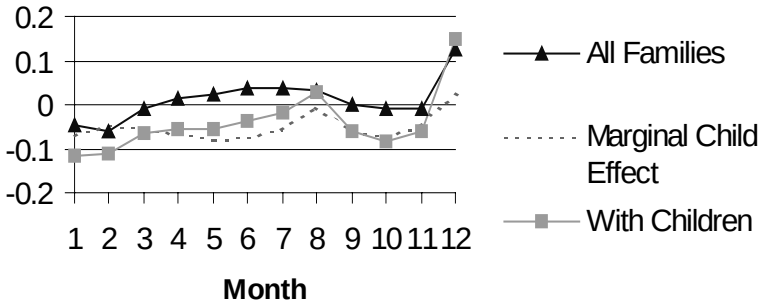
Total Expenditure:
With vs Without Children



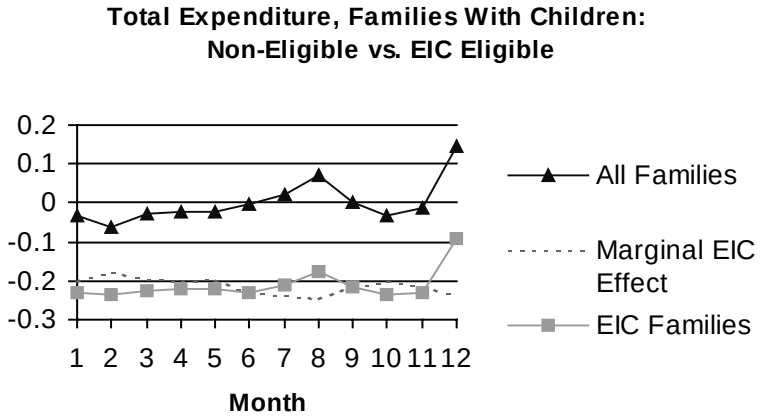
Durable Goods Expenditure:
With vs Without Children

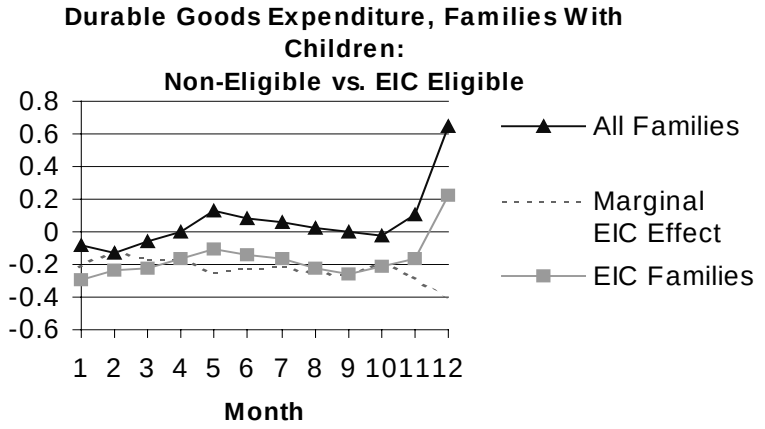


Non-Durable Goods and Services:
With vs Without Children



Figures 5a-c


Total Expenditure, Families With Children:
Non-Eligible vs. EIC Eligible
0.2
0.1
0
-0.1
-0.2
-0.3
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families


Durable Goods Expenditure, Families With Children:
Non-Eligible vs. EIC Eligible
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families

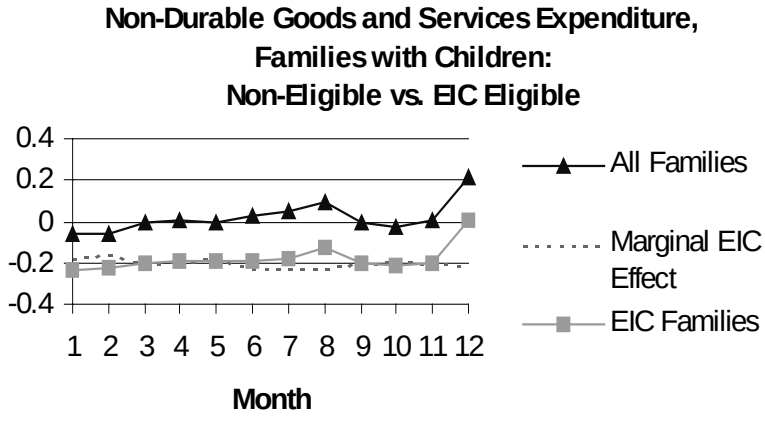

Non-Durable Goods and Services Expenditure, Families with Children:
Non-Eligible vs. EIC Eligible
0.4
0.2
0
-0.2
-0.4
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families

Figure 6: Monthly Earnings Patterns by Income

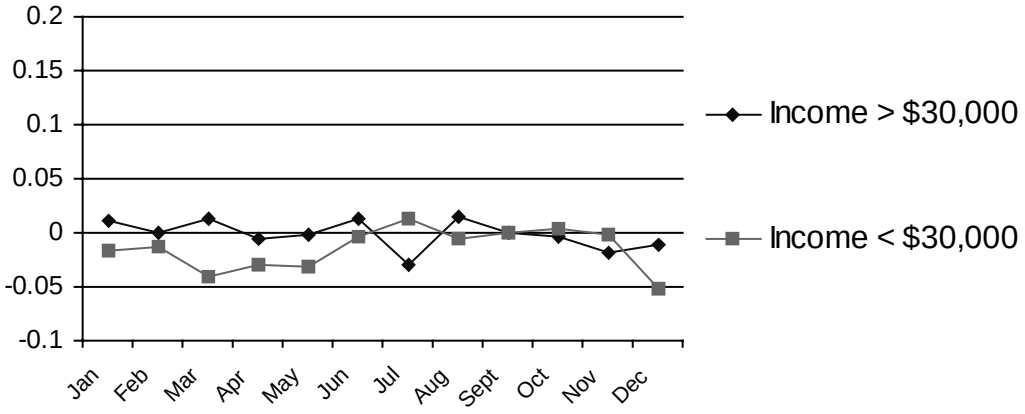
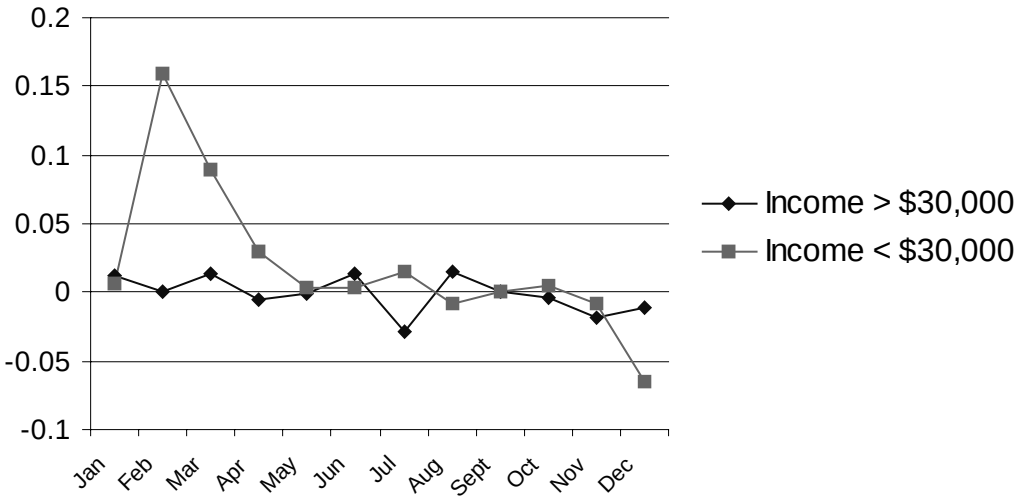
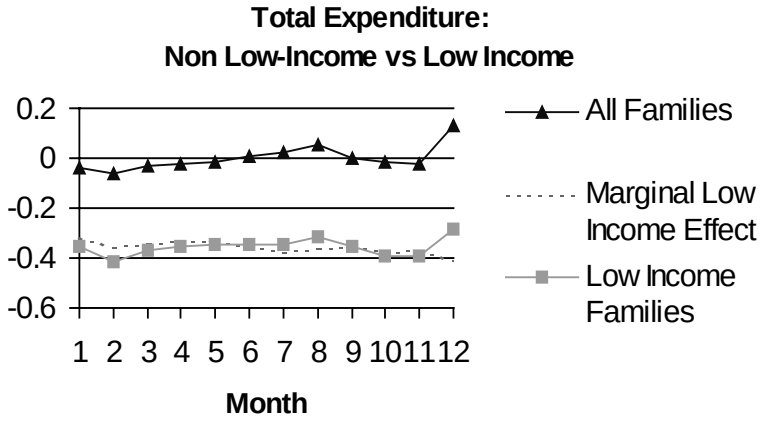
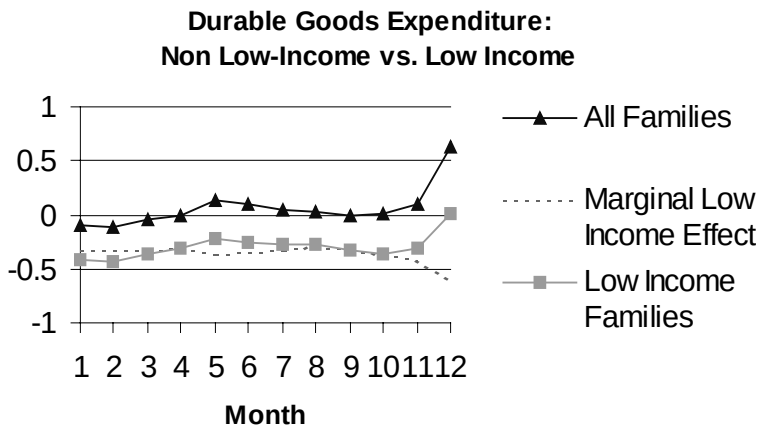


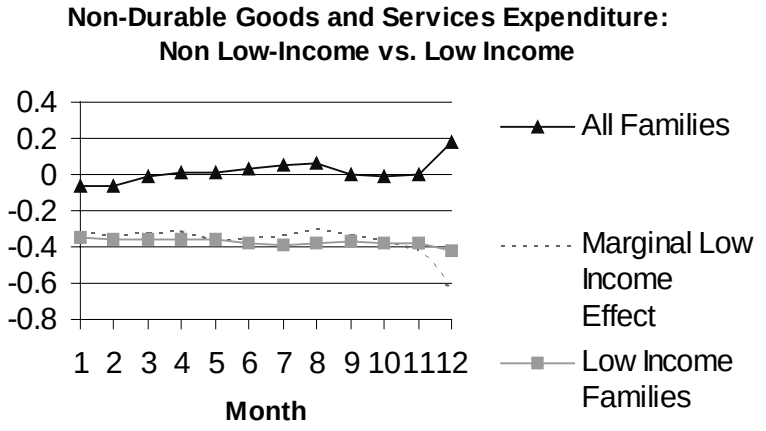
Figure 7: Monthly Earnings Patterns by Income, Including EIC



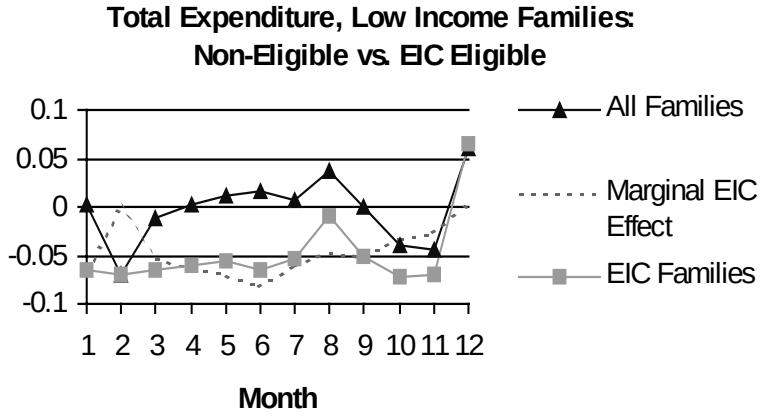
Figures 8a-c

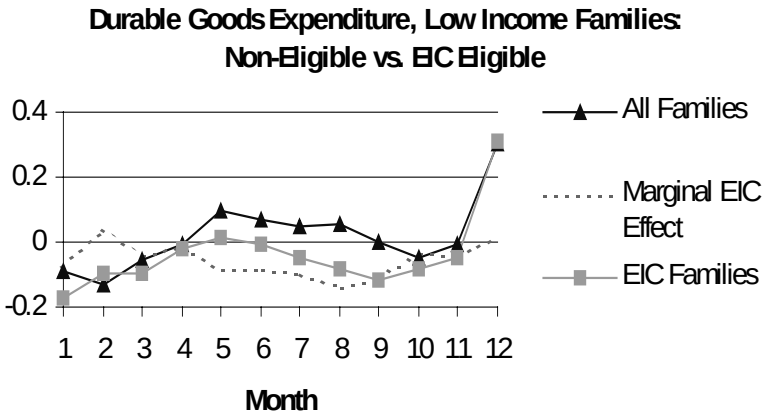

Total Expenditure:
Non Low-Income vs Low Income
0.2
0
-0.2
-0.4
-0.6
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal Low Income Effect
Low Income Families

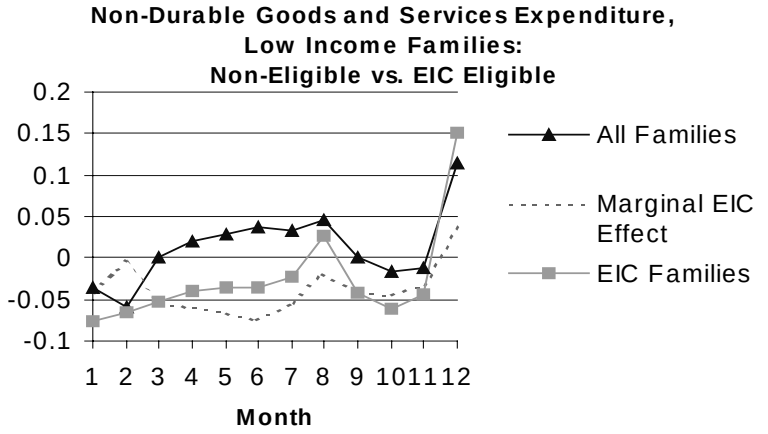

Durable Goods Expenditure:
Non Low-Income vs. Low Income
1
0.5
0
-0.5
-1
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal Low Income Effect
Low Income Families


Non-Durable Goods and Services Expenditure:
Non Low-Income vs. Low Income
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal Low Income Effect
Low Income Families

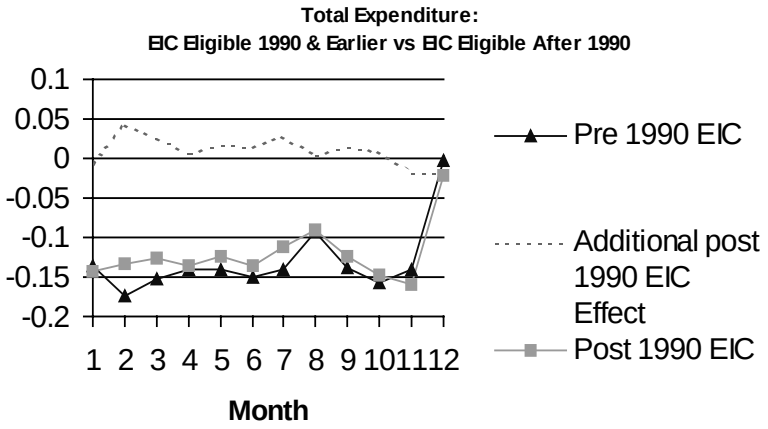
Figures 9a-c

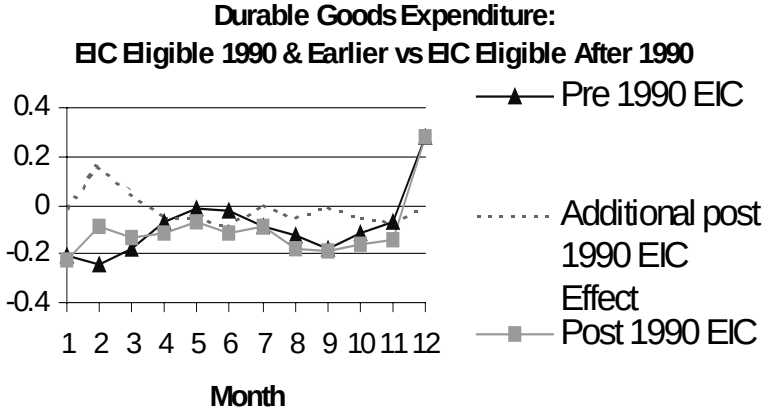

Total Expenditure, Low Income Families:
Non-Eligible vs. EIC Eligible
0.1
0.05
0
-0.05
-0.1
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families

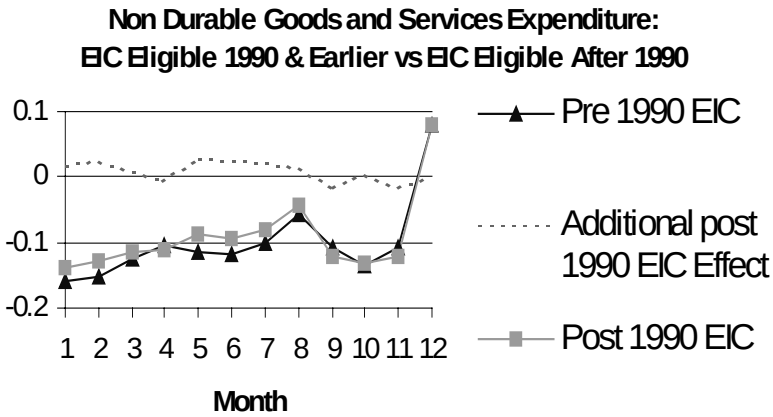

Durable Goods Expenditure, Low Income Families:
Non-Eligible vs. EIC Eligible
0.4
0.2
0
-0.2
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families


Non-Durable Goods and Services Expenditure,
Low Income Families:
Non-Eligible vs. EIC Eligible
0.2
0.15
0.1
0.05
0
-0.05
-0.1
1 2 3 4 5 6 7 8 9 10 11 12
Month
All Families
Marginal EIC Effect
EIC Families

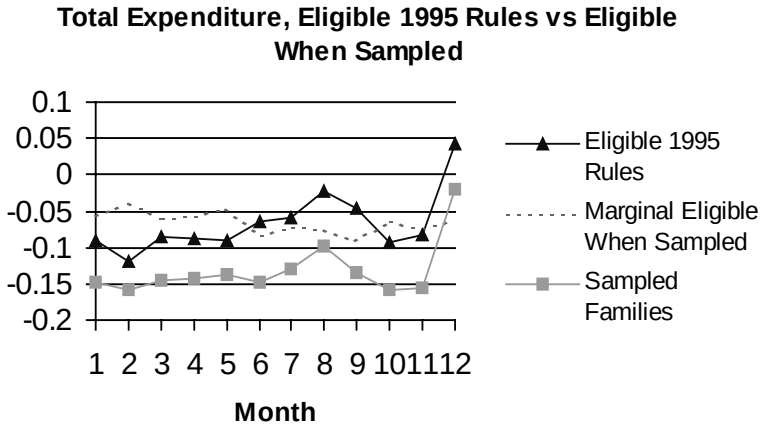
Figures 10a-c

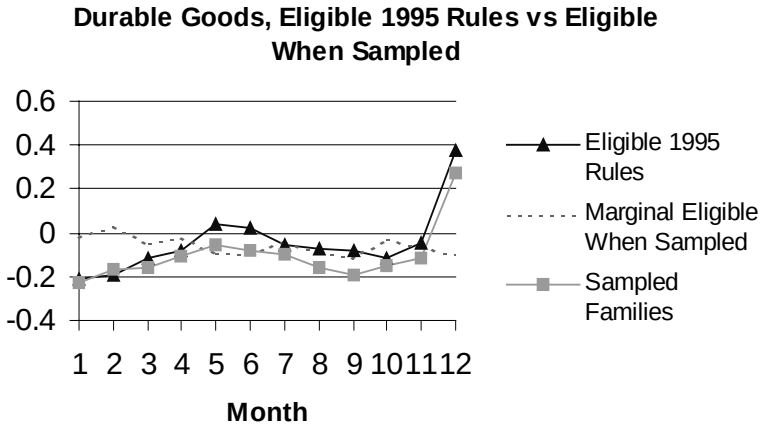






Figures 11a-c





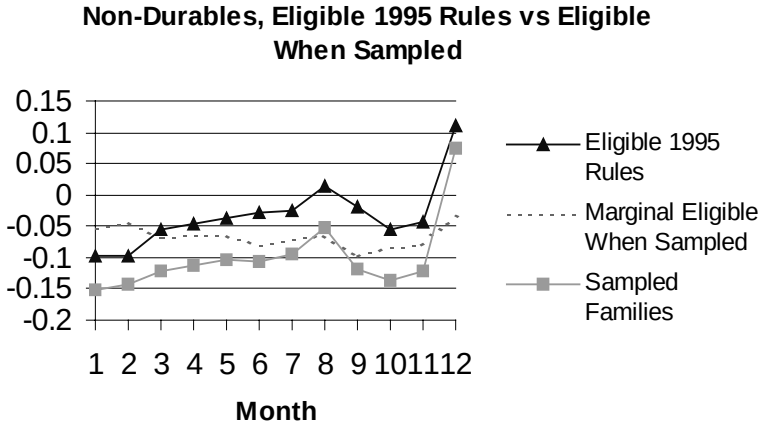


Table 1: Variable Means

	All Families	EIC Eligible Families	Non-Eligible Families
Dummy=1 if EIC Eligible	0.098 (0.297)	1 (0)	0 (0)
Predicted Yearly EIC Benefit (1998$)	77.56 (319.15)	794.16 (688.38)	0 (0)
Before Tax Income (1998$)	41289.78 (33762.77)	19547.05 (14708.45)	43643.09 (34397.43)
Total Expenditure (1998$)	2749.67 (3036.23)	2230.71 (2373.16)	2805.83 (3094.28)
Durable Goods Consumption (1998$)	494.07 (2188.43)	398.79 (1791.68)	504.38 (2226.89)
Non-Durable Goods Consumption (1998$)	1137.41 (1295.12)	944.10 (1009.11)	1158.33 (1320.10)
Dummy=1 if Family has Children <19	0.406 (0.491)	0.895 (0.306)	0.353 (0.478)
Family Size	2.701 (1.517)	3.813 (1.525)	2.581 (1.467)
N (Number of Family Months)	627706	61304	566402

Table 2: Expenditure Patterns by Month

	All Families	EIC Eligible Families	Non-Eligible Families
January			
Total Expenditure	2641.846	2156.264	2694.383
	(2918.241)	(2246.781)	(2977.112)
Durables	424.076	344.513	432.684
	(2069.673)	(1628.532)	(2111.719)
Non-Durables	1044.809	875.551	1063.122
	(1115.694)	(831.832)	(1140.686)
February			
Total Expenditure	2541.050	2128.025	2585.675
	(2720.739)	(2161.561)	(2770.753)
Durables	435.159	389.317	440.112
	(2086.22)	(1797.879)	(2114.980)
Non-Durables	1032.182	879.054	1048.727
	(982.852)	(694.517)	(1007.699)
March			
Total Expenditure	2664.004	2181.263	2716.293
	(2949.992)	(2324.049)	(3005.359)
Durables	475.095	400.220	483.205
	(2175.644)	(1822.705)	(2210.358)
Non-Durables	1105.276	911.327	1126.284
	(1318.064)	(917.059)	(1352.731)
April			
Total Expenditure	2705.078	2185.982	2761.724
	(3020.816)	(2243.793)	(3088.565)

Durables	501.950 (2255.769)	414.073 (1839.460)	511.539 (2296.538)
Non-Durables	1128.55 (1320.783)	915.483 (700.871)	1151.800 (1369.580)
May			
Total Expenditure	2745.571 (3068.375)	2239.175 (2431.736)	2800.680 (3124.928)
Durables	530.026 (2273.786)	425.271 (1817.751)	541.426 (2317.738)
Non-Durables	1138.175 (1357.913)	943.899 (1094.423)	1159.317 (1381.926)
June			
Total Expenditure	2794.457 (3025.018)	2217.171 (2318.392)	2858.055 (3086.433)
Durables	533.236 (2263.292)	422.286 (1834.145)	545.459 (2305.381)
Non-Durables	1166.072 (1226.022)	945.354 (958.097)	1190.387 (1249.664)
July			
Total Expenditure	2854.403 (3230.944)	2275.715 (2453.766)	2917.306 (3298.335)
Durables	545.217 (2355.039)	442.451 (1925.966)	556.387 (2396.807)
Non-Durables	1182.515 (1370.406)	948.525 (751.773)	1207.950 (1419.201)
August			
Total Expenditure	2924.381 (3319.873)	2328.873 (2396.273)	2988.214 (3397.868)

Durables	522.428 (2275.355)	387.361 (1809.661)	536.906 (2319.281)
Non-Durables	1201.736 (1471.658)	1003.362 (875.637)	1222.999 (1520.226)
September			
Total Expenditure	2760.474 (3111.942)	2221.572 (2503.676)	2818.114 (3164.694)
Durables	496.688 (2226.787)	368.276 (1739.845)	510.423 (2272.287)
Non-Durables	1115.284 (1329.590)	931.466 (1324.492)	1134.945 (1328.644)
October			
Total Expenditure	2702.244 (3140.441)	2236.478 (2992.695)	2751.557 (3151.683)
Durables	493.144 (2270.636)	429.552 (2014.721)	499.877 (2295.978)
Non-Durables	1103.992 (1443.550)	931.399 (1867.480)	1122.265 (1389.896)
November			
Total Expenditure	2636.517 (2764.310)	2146.110 (2036.313)	2689.167 (2826.326)
Durables	458.625 (2027.699)	359.583 (1566.317)	469.258 (2070.865)
Non-Durables	1096.582 (1036.515)	915.323 (703.833)	1116.041 (1064.250)
December			
Total Expenditure	3006.306 (3084.974)	2432.757 (2272.285)	3069.350 (3155.251)

Durables	516.120 (1975.719)	405.652 (1687.612)	528.262 (2004.507)
Non-Durables	1320.298 (1428.795)	1111.667 (804.370)	1343.230 (1479.675)

Table 3a: Log Total Expenditure: Overall Patterns

	Coefficient	Standard Error
Log Income	0.254	(0.003)
January	-0.021	(0.004)
February	-0.061	(0.004)
March	-0.023	(0.004)
April	-0.016	(0.004)
May	-0.006	(0.004)
June	0.007	(0.004)
July	0.016	(0.004)
August	0.045	(0.003)
October	-0.026	(0.003)
November	-0.029	(0.003)
December	0.103	(0.004)
1981	-0.022	(0.012)
1982	0.016	(0.008)
1983	0.012	(0.008)
1984	0.036	(0.008)
1985	0.031	(0.008)
1986	0.023	(0.008)
1987	0.011	(0.008)
1988	0.048	(0.008)
1989	0.043	(0.008)
1990	0.028	(0.008)
1991	0.017	(0.008)
1992	0.010	(0.008)
1993	0.004	(0.008)
1994	0.015	(0.007)
1996	0.012	(0.008)
1997	0.026	(0.013)
Family Size	0.112	(0.001)
Constant	5.347	(0.022)

Notes: There are 627706 consumer unit-month observations and 126828 consumer units. The omitted categories are September and 1995. Standard errors are Huber/White standard errors allowing for dependence within families.

Table 3b: Log Durable Goods Expenditure: Overall Patterns

	Coefficient	Standard Error
Log Income	0.253	(0.003)
January	-0.088	(0.010)
February	-0.106	(0.010)
March	-0.045	(0.010)
April	-0.002	(0.010)
May	0.121	(0.009)
June	0.087	(0.009)
July	0.050	(0.009)
August	0.037	(0.009)
October	-0.012	(0.009)
November	0.056	(0.009)
December	0.491	(0.009)
1981	-0.170	(0.027)
1982	0.048	(0.016)
1983	0.072	(0.016)
1984	0.113	(0.015)
1985	0.114	(0.016)
1986	0.108	(0.015)
1987	0.087	(0.015)
1988	0.114	(0.015)
1989	0.069	(0.015)
1990	0.062	(0.015)
1991	-0.019	(0.015)
1992	-0.032	(0.015)
1993	-0.003	(0.015)
1994	0.030	(0.014)
1996	0.015	(0.014)
1997	0.075	(0.028)
Family Size	0.095	(0.002)
Constant	1.990	(0.028)

See notes to Table 3a.

Table 3c: Log Non-Durables Expenditure: Overall Patterns

	Coefficient	Standard Error
Log Income	0.251	(0.003)
January	-0.049	(0.004)
February	-0.059	(0.003)
March	-0.008	(0.003)
April	0.009	(0.003)
May	0.014	(0.003)
June	0.032	(0.003)
July	0.040	(0.003)
August	0.056	(0.003)
October	-0.014	(0.003)
November	-0.005	(0.003)
December	0.158	(0.004)
1981	0.079	(0.013)
1982	0.120	(0.009)
1983	0.098	(0.009)
1984	0.097	(0.009)
1985	0.087	(0.009)
1986	0.046	(0.008)
1987	0.043	(0.008)
1988	0.088	(0.009)
1989	0.087	(0.008)
1990	0.077	(0.008)
1991	0.045	(0.008)
1992	0.019	(0.008)
1993	0.007	(0.008)
1994	0.013	(0.008)
1996	0.007	(0.008)
1997	0.020	(0.013)
Family Size	0.137	(0.001)
Constant	4.385	(0.022)

See notes for Table 3a.

Table 4a: Log Total Expenditure, Non-Eligible vs. EIC Eligible

	Month		Month x EIC Eligible	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.023	(0.004)	-0.118	(0.010)
February	-0.066	(0.004)	-0.086	(0.010)
March	-0.025	(0.004)	-0.115	(0.010)
April	-0.016	(0.004)	-0.122	(0.010)
May	-0.006	(0.004)	-0.126	(0.010)
June	0.010	(0.004)	-0.152	(0.010)
July	0.017	(0.003)	-0.142	(0.010)
August	0.046	(0.003)	-0.138	(0.010)
September			-0.130	(0.010)
October	-0.026	(0.003)	-0.125	(0.010)
November	-0.029	(0.004)	-0.121	(0.010)
December	0.102	(0.004)	-0.115	(0.009)

See notes for Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 4b: Log Durable Goods Expenditure, Non-Eligible vs. EIC Eligible

	Month		Month x EIC Eligible	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.095	(0.010)	-0.125	(0.023)
February	-0.121	(0.010)	-0.037	(0.024)
March	-0.054	(0.010)	-0.099	(0.024)
April	-0.012	(0.010)	-0.085	(0.025)
May	0.119	(0.010)	-0.164	(0.024)
June	0.084	(0.010)	-0.153	(0.024)
July	0.045	(0.010)	-0.131	(0.025)
August	0.037	(0.009)	-0.188	(0.024)
September			-0.187	(0.024)
October	-0.018	(0.010)	-0.120	(0.025)
November	0.054	(0.010)	-0.160	(0.023)
December	0.495	(0.010)	-0.214	(0.022)

See notes for Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 4c: Log Non-Durables Expenditure, Non-Eligible vs. EIC Eligible

	Month		Month x EIC Eligible	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.051	(0.004)	-0.098	(0.009)
February	-0.062	(0.004)	-0.076	(0.009)
March	-0.008	(0.004)	-0.112	(0.010)
April	0.010	(0.004)	-0.118	(0.010)
May	0.015	(0.003)	-0.115	(0.010)
June	0.035	(0.003)	-0.139	(0.010)
July	0.042	(0.003)	-0.132	(0.010)
August	0.055	(0.003)	-0.104	(0.010)
September			-0.115	(0.010)
October	-0.013	(0.003)	-0.120	(0.010)
November	-0.005	(0.003)	-0.112	(0.010)
December	0.155	(0.004)	-0.075	(0.009)

See notes to Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 5a: Log Total Expenditure, Consumer Units without Children Under 18 vs. Consumer Units with Children Under 18

	Month		Month x If Children Under 18	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.015	(0.003)	-0.032	(0.006)
February	-0.068	(0.005)	-0.002	(0.006)
March	-0.023	(0.005)	-0.017	(0.006)
April	-0.014	(0.005)	-0.023	(0.007)
May	0.004	(0.005)	-0.042	(0.007)
June	0.016	(0.005)	-0.039	(0.007)
July	0.015	(0.004)	-0.015	(0.007)
August	0.032	(0.004)	0.014	(0.007)
September			-0.018	(0.007)
October	-0.022	(0.004)	-0.027	(0.007)
November	-0.037	(0.005)	0.002	(0.006)
December	0.080	(0.005)	0.039	(0.007)

See notes to Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 5b: Log Durable Goods Expenditure, Consumer Units without Children Under 18 vs. Consumer Units with Children Under 18

	Month		Month x If Children Under 18	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.098	(0.012)	-0.043	(0.015)
February	-0.115	(0.012)	-0.045	(0.015)
March	-0.050	(0.012)	-0.058	(0.016)
April	-0.016	(0.012)	-0.035	(0.016)
May	0.109	(0.012)	-0.040	(0.016)
June	0.083	(0.012)	-0.059	(0.016)
July	0.040	(0.012)	-0.046	(0.016)
August	0.043	(0.011)	-0.085	(0.016)
September			-0.069	(0.016)
October	-0.010	(0.012)	-0.073	(0.016)
November	0.028	(0.012)	0.001	(0.015)
December	0.415	(0.012)	0.120	(0.014)

See notes to Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.232

Table 5c: Log Non-Durables Expenditure, Consumer Units without Children Under 18 vs. Consumer Units with Children Under 18

	Month		Month x If Children Under 18	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.044	(0.003)	-0.070	(0.006)
February	-0.062	(0.005)	-0.049	(0.006)
March	-0.009	(0.005)	-0.057	(0.007)
April	0.012	(0.005)	-0.067	(0.007)
May	0.023	(0.005)	-0.081	(0.007)
June	0.038	(0.004)	-0.074	(0.007)
July	0.039	(0.004)	-0.057	(0.007)
August	0.034	(0.004)	-0.005	(0.007)
September			-0.059	(0.007)
October	-0.008	(0.004)	-0.075	(0.007)
November	-0.009	(0.005)	-0.049	(0.007)
December	0.124	(0.005)	0.024	(0.007)

See notes for Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 6a: Log Total Expenditure Among Families with Children, Non Eligible vs. EIC Eligible

	Month (only households with children)		Month x EIC Eligible (only households with children)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.034	(0.006)	-0.199	(0.011)
February	-0.061	(0.006)	-0.176	(0.011)
March	-0.027	(0.006)	-0.198	(0.011)
April	-0.022	(0.006)	-0.199	(0.011)
May	-0.024	(0.006)	-0.194	(0.012)
June	-0.002	(0.005)	-0.230	(0.012)
July	0.023	(0.005)	-0.236	(0.012)
August	0.071	(0.005)	-0.245	(0.012)
September			-0.215	(0.012)
October	-0.033	(0.005)	-0.202	(0.012)
November	-0.015	(0.006)	-0.216	(0.011)
December	0.143	(0.006)	-0.236	(0.011)

Notes: There are 254941 consumer unit-month observations and 48625 consumer units. The omitted categories are September and 1995. Standard errors are Huber/White standard errors allowing for dependence within families.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 6b: Log Durable Goods Expenditure Among Families with Children, Non Eligible vs. EIC Eligible

	Month (only households with children)		Month x EIC Eligible (only households with children)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.083	(0.017)	-0.215	(0.027)
February	-0.126	(0.017)	-0.106	(0.027)
March	-0.061	(0.017)	-0.160	(0.028)
April	-0.002	(0.018)	-0.165	(0.028)
May	0.135	(0.017)	-0.242	(0.028)
June	0.087	(0.017)	-0.229	(0.028)
July	0.054	(0.017)	-0.214	(0.029)
August	0.024	(0.017)	-0.247	(0.028)
September			-0.260	(0.028)
October	-0.026	(0.016)	-0.188	(0.028)
November	0.108	(0.017)	-0.276	(0.027)
December	0.649	(0.017)	-0.423	(0.026)

See notes to Table 6a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.001

Table 6c: Log Non-Durables Expenditure Among Families with Children, Non Eligible vs. EIC Eligible

	Month (only households with children)		Month x EIC Eligible (only households with children)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.060	(0.005)	-0.180	(0.011)
February	-0.061	(0.005)	-0.163	(0.011)
March	-0.007	(0.005)	-0.199	(0.011)
April	0.004	(0.005)	-0.193	(0.011)
May	-0.001	(0.005)	-0.186	(0.011)
June	0.029	(0.005)	-0.221	(0.011)
July	0.047	(0.005)	-0.225	(0.011)
August	0.094	(0.004)	-0.224	(0.011)
September			-0.199	(0.011)
October	-0.023	(0.004)	-0.194	(0.011)
November	0.004	(0.005)	-0.204	(0.011)
December	0.211	(0.006)	-0.211	(0.011)

See notes for Table 6a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 7a: Log Total Expenditure, Non Low Income vs. Low Income

	Month		Month x Low Income	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.038	(0.004)	-0.317	(0.007)
February	-0.063	(0.004)	-0.350	(0.007)
March	-0.031	(0.004)	-0.335	(0.007)
April	-0.025	(0.004)	-0.330	(0.007)
May	-0.013	(0.004)	-0.335	(0.007)
June	0.008	(0.004)	-0.353	(0.007)
July	0.026	(0.004)	-0.376	(0.007)
August	0.050	(0.004)	-0.365	(0.008)
September			-0.354	(0.008)
October	-0.017	(0.004)	-0.373	(0.007)
November	-0.020	(0.004)	-0.372	(0.007)
December	0.130	(0.004)	-0.411	(0.007)

See notes for Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 7b: Log Durable Goods Expenditure, Non Low Income vs. Low Income

	Month		Month x Low Income	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.092	(0.013)	-0.319	(0.015)
February	-0.107	(0.013)	-0.325	(0.015)
March	-0.048	(0.013)	-0.320	(0.015)
April	-0.012	(0.013)	-0.301	(0.015)
May	0.138	(0.013)	-0.363	(0.015)
June	0.097	(0.013)	-0.349	(0.016)
July	0.051	(0.013)	-0.327	(0.016)
August	0.024	(0.013)	-0.298	(0.016)
September			-0.327	(0.016)
October	0.003	(0.013)	-0.360	(0.015)
November	0.093	(0.013)	-0.409	(0.015)
December	0.624	(0.013)	-0.619	(0.014)

See notes for Table 3a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.002

Table 7c: Log Non-Durables Expenditure, Non Low Income vs. Low Income

	Month		Month x Low Income	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.061	(0.004)	-0.344	(0.007)
February	-0.063	(0.004)	-0.360	(0.007)
March	-0.012	(0.004)	-0.358	(0.007)
April	0.006	(0.004)	-0.361	(0.007)
May	0.010	(0.004)	-0.358	(0.007)
June	0.036	(0.004)	-0.376	(0.007)
July	0.048	(0.004)	-0.388	(0.007)
August	0.062	(0.003)	-0.383	(0.007)
September			-0.370	(0.007)
October	-0.010	(0.004)	-0.378	(0.007)
November	-0.0004	(0.004)	-0.380	(0.007)
December	0.183	(0.004)	-0.423	(0.007)

See notes for Table 3a.

Test 1: No seasonality in non- recipients	p=0.000
Test 2: No seasonality in recipients	p=0.000
Test 3: No difference in seasonality /Non-	p=0.000
Test 4: Constant difference in seasonality /Non-	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 8a: Log Total Expenditure Among Low Income Families, Non Eligible vs. EIC Eligible

	Month (low income households only)		Month x EIC Eligible (low income households only)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	0.002	(0.007)	-0.067	(0.011)
February	-0.069	(0.007)	-0.001	(0.011)
March	-0.011	(0.007)	-0.053	(0.011)
April	0.002	(0.006)	-0.062	(0.011)
May	0.012	(0.006)	-0.069	(0.011)
June	0.016	(0.006)	-0.082	(0.011)
July	0.007	(0.006)	-0.060	(0.012)
August	0.038	(0.006)	-0.047	(0.011)
September			-0.051	(0.011)
October	-0.040	(0.006)	-0.032	(0.011)
November	-0.043	(0.006)	-0.026	(0.011)
December	0.061	(0.007)	0.003	(0.010)

Notes: There are 274086 consumer unit-month observations and 62599 consumer units. The omitted categories are September and 1995. Standard errors are Huber/White standard errors allowing for dependence within families.

Test 1: No seasonality in non- recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 8b: Log Durable Goods Expenditure Among Low Income Families, Non Eligible vs. EIC Eligible

	Month (low income households only)		Month x EIC Eligible (low income households only)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.091	(0.015)	-0.079	(0.026)
February	-0.134	(0.015)	0.040	(0.027)
March	-0.055	(0.015)	-0.043	(0.028)
April	-0.005	(0.015)	-0.014	(0.028)
May	0.099	(0.015)	-0.086	(0.028)
June	0.070	(0.015)	-0.081	(0.028)
July	0.047	(0.015)	-0.094	(0.028)
August	0.056	(0.014)	-0.136	(0.028)
September			-0.120	(0.027)
October	-0.047	(0.014)	-0.036	(0.028)
November	-0.006	(0.015)	-0.042	(0.027)
December	0.302	(0.015)	0.011	(0.025)

See notes for Table 8a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 8c: Log Non-Durables Expenditure Among Low Income Families, Non EIC Eligible vs. EIC Eligible

	Month (low income households only)		Month x EIC Eligible (low income households only)	
	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.035	(0.007)	-0.042	(0.011)
February	-0.060	(0.007)	-0.006	(0.011)
March	0.002	(0.006)	-0.055	(0.011)
April	0.019	(0.006)	-0.059	(0.011)
May	0.029	(0.006)	-0.065	(0.011)
June	0.037	(0.006)	-0.073	(0.011)
July	0.033	(0.005)	-0.055	(0.011)
August	0.045	(0.005)	-0.019	(0.011)
September			-0.041	(0.011)
October	-0.017	(0.005)	-0.044	(0.011)
November	-0.011	(0.006)	-0.033	(0.011)
December	0.114	(0.007)	0.036	(0.011)

See notes for Table 8a.

Test 1: No seasonality in non-EIC recipients	p=0.000
Test 2: No seasonality in EIC recipients	p=0.000
Test 3: No difference in seasonality EIC/Non-EIC	p=0.000
Test 4: Constant difference in seasonality EIC/Non-EIC	p=0.000
Test 5: Constant difference in seasonality Jan-Oct	p=0.000

Table 9a: Log Total Expenditure: Non-Eligible vs. EIC Eligible vs. EIC Eligible After 1990

	Month		Added Pattern for All EIC Recipients		Added Pattern for EIC Recipients after 1990	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.022	(0.004)	-0.114	(0.014)	-0.008	(0.018)
February	-0.066	(0.004)	-0.109	(0.014)	0.042	(0.018)
March	-0.025	(0.004)	-0.128	(0.013)	0.027	(0.018)
April	-0.016	(0.004)	-0.125	(0.014)	0.006	(0.018)
May	-0.006	(0.004)	-0.136	(0.014)	0.018	(0.019)
June	0.010	(0.004)	-0.159	(0.015)	0.014	(0.019)
July	0.017	(0.003)	-0.158	(0.014)	0.028	(0.019)
August	0.046	(0.003)	-0.140	(0.015)	0.004	(0.019)
September			-0.138	(0.014)	0.015	(0.018)
October	-0.026	(0.003)	-0.130	(0.015)	0.010	(0.019)
November	-0.029	(0.004)	-0.110	(0.014)	-0.020	(0.018)
December	0.102	(0.004)	-0.105	(0.013)	-0.018	(0.018)

See notes for Table 3a.

Test 1: No difference in seasonality EIC before 1990/EIC after 1990	p=0.132
Test 2: Constant difference in seasonality EIC before 1990/EIC after 1990	p=0.104
Test 3: Constant difference in seasonality January-October	p=0.242

Table 9b: Log Durable Goods Expenditure: Non-Eligible vs. EIC Eligible vs. EIC Eligible After 1990

	Month		Added Pattern for All EIC Recipients		Added Pattern for EIC Recipients after 1990	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.094	(0.010)	-0.115	(0.034)	-0.018	(0.044)
February	-0.121	(0.010)	-0.124	(0.034)	0.162	(0.046)
March	-0.054	(0.010)	-0.123	(0.034)	0.048	(0.046)
April	-0.012	(0.010)	-0.060	(0.035)	-0.047	(0.047)
May	0.119	(0.010)	-0.137	(0.035)	-0.051	(0.046)
June	0.084	(0.010)	-0.106	(0.035)	-0.089	(0.046)
July	0.045	(0.010)	-0.132	(0.035)	0.003	(0.047)
August	0.037	(0.009)	-0.160	(0.036)	-0.052	(0.046)
September			-0.183	(0.034)	-0.007	(0.046)
October	-0.018	(0.010)	-0.093	(0.035)	-0.051	(0.047)
November	0.054	(0.010)	-0.121	(0.034)	-0.071	(0.045)
December	0.495	(0.010)	-0.212	(0.031)	-0.004	(0.042)

See notes for Table 3a.

Test 1: No difference in seasonality EIC before 1990/EIC after 1990 p=0.013
Test 2: Constant difference in seasonality EIC before 1990/EIC after 1990 p=0.009
Test 3: Constant difference in seasonality January-October p=0.005

Table 9c: Log Non-Durables Expenditure: Non-Eligible vs. EIC Eligible vs. EIC Eligible After 1990

	Month		Added Pattern for All EIC Recipients		Added Pattern for EIC Recipients after 1990	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.051	(0.004)	-0.108	(0.014)	0.019	(0.018)
February	-0.062	(0.004)	-0.089	(0.013)	0.024	(0.018)
March	-0.008	(0.004)	-0.116	(0.013)	0.010	(0.018)
April	0.010	(0.004)	-0.115	(0.013)	-0.005	(0.018)
May	0.015	(0.003)	-0.130	(0.013)	0.030	(0.018)
June	0.035	(0.003)	-0.152	(0.014)	0.025	(0.018)
July	0.042	(0.003)	-0.143	(0.014)	0.021	(0.018)
August	0.055	(0.003)	-0.112	(0.014)	0.015	(0.019)
September			-0.107	(0.014)	-0.014	(0.018)
October	-0.013	(0.003)	-0.122	(0.014)	0.004	(0.018)
November	-0.005	(0.003)	-0.104	(0.013)	-0.014	(0.018)
December	0.155	(0.004)	-0.075	(0.013)	-0.00001	(0.017)

See notes for Table 3a.

Test 1: No difference in seasonality EIC before 1990/EIC after 1990	p=0.290
Test 2: Constant difference in seasonality EIC before 1990/EIC after 1990	p=0.242
Test 3: Constant difference in seasonality January-October	p=0.265

Table 10a: Log Total Expenditure: Non-Eligible vs. Eligible According to 1995 Rules vs. EIC Eligible when Sampled

	Month		Added Pattern for Eligible 1995 Rules		Added Pattern for Eligible when Sampled	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.021	(0.004)	-0.069	(0.011)	-0.057	(0.014)
February	-0.065	(0.004)	-0.053	(0.011)	-0.039	(0.014)
March	-0.023	(0.004)	-0.063	(0.011)	-0.059	(0.014)
April	-0.014	(0.004)	-0.074	(0.011)	-0.056	(0.014)
May	-0.003	(0.004)	-0.089	(0.011)	-0.046	(0.014)
June	0.012	(0.004)	-0.076	(0.012)	-0.084	(0.015)
July	0.020	(0.004)	-0.078	(0.012)	-0.073	(0.015)
August	0.048	(0.003)	-0.070	(0.012)	-0.075	(0.015)
September			-0.046	(0.012)	-0.090	(0.015)
October	-0.025	(0.004)	-0.068	(0.011)	-0.065	(0.014)
November	-0.029	(0.004)	-0.053	(0.011)	-0.075	(0.014)
December	0.103	(0.004)	-0.061	(0.011)	-0.061	(0.014)

See notes for Table 3a.

Test 1: No difference in seasonality Ineligible/ Eligible 1995 Rules p=0.000
Test 2: No difference in seasonality Eligible 1995 Rules/ Eligible when Sampled p=0.000
Test 3: Constant difference in seasonality Eligible 1995 Rules / Eligible when Sampled p=0.218
Test 4: Constant difference in seasonality January-October p=0.142

Table 10b: Log Durable Goods Expenditure: Non-Eligible vs. Eligible According to 1995 Rules vs. EIC Eligible when Sampled

	Month		Added Pattern for Eligible 1995 Rules		Added Pattern for Eligible when Sampled	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.092	(0.010)	-0.116	(0.028)	-0.022	(0.035)
February	-0.121	(0.010)	-0.077	(0.029)	0.031	(0.036)
March	-0.055	(0.010)	-0.061	(0.029)	-0.045	(0.036)
April	-0.012	(0.010)	-0.068	(0.029)	-0.025	(0.036)
May	0.119	(0.010)	-0.081	(0.028)	-0.092	(0.035)
June	0.082	(0.010)	-0.060	(0.030)	-0.100	(0.037)
July	0.046	(0.010)	-0.100	(0.029)	-0.041	(0.037)
August	0.039	(0.010)	-0.110	(0.030)	-0.090	(0.037)
September			-0.082	(0.030)	-0.114	(0.036)
October	-0.017	(0.010)	-0.100	(0.029)	-0.031	(0.036)
November	0.055	(0.010)	-0.103	(0.028)	-0.067	(0.035)
December	0.498	(0.010)	-0.124	(0.027)	-0.102	(0.034)

See notes for Table 3a.

Test 1: No difference in seasonality Ineligible/ Eligible 1995 Rules p=0.000
Test 2: No difference in seasonality Eligible 1995 Rules/ Eligible when Sampled p=0.001
Test 3: Constant difference in seasonality Eligible 1995 Rules / Eligible when Sampled p=0.086
Test 4: Constant difference in seasonality January-October p=0.109

Table 10c: Log Non-Durables Expenditure: Non-Eligible vs. Eligible According to 1995 Rules vs. EIC Eligible when Sampled

	Month		Added Pattern for Eligible 1995 Rules		Added Pattern for Eligible when Sampled	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
January	-0.048	(0.004)	-0.050	(0.011)	-0.054	(0.014)
February	-0.061	(0.004)	-0.037	(0.011)	-0.043	(0.014)
March	-0.006	(0.004)	-0.050	(0.011)	-0.067	(0.014)
April	0.012	(0.004)	-0.060	(0.011)	-0.064	(0.014)
May	0.017	(0.004)	-0.056	(0.011)	-0.065	(0.014)
June	0.038	(0.004)	-0.068	(0.012)	-0.078	(0.014)
July	0.045	(0.003)	-0.069	(0.012)	-0.069	(0.014)
August	0.057	(0.003)	-0.043	(0.012)	-0.065	(0.015)
September			-0.020	(0.011)	-0.098	(0.014)
October	-0.012	(0.003)	-0.043	(0.011)	-0.082	(0.014)
November	-0.004	(0.004)	-0.039	(0.011)	-0.078	(0.014)
December	0.156	(0.004)	-0.046	(0.011)	-0.035	(0.013)

See notes for Table 3a.

Test 1: No difference in seasonality Ineligible/ Eligible 1995 Rules p=0.000
Test 2: No difference in seasonality Eligible 1995 Rules/ Eligible when Sampled p=0.000
Test 3: Constant difference in seasonality Eligible 1995 Rules / Eligible when Sampled p=0.012
Test 4: Constant difference in seasonality January-October p=0.006