WHOSE CHILD IS THIS?
SHIFTING OF DEPENDENTS AMONG EITC
CLAIMANTS WITHIN THE SAME HOUSEHOLD

David Splinter, Jeff Larrimore, and Jacob Mortenson

Using a panel of household level tax data, we estimate the degree to which dependents are "reassigned" between tax units within the same household, and how these reassignments affect combined tax liabilities. Reassigning dependents reduces combined tax liabilities on average, suggesting some household level coordination. Additionally, when earned income tax credit (EITC) benefits expanded in 2009, reassignments increasingly involved adding a third child to tax returns to claim these new benefits. However, the subgroup reassigning towards three child tax units actually increased total household tax liabilities, suggesting that some tax units may prioritize minimizing their own tax burden or focus on particularly salient aspects of tax policy.

Keywords: earned income tax credit, tax avoidance, household level tax coordination

JEL Codes: D10, H24, H26, H31, H53

I. INTRODUCTION

Households respond to income taxes along many dimensions. Beyond income or employment responses, one potential margin of response is to alter who is included in a family for tax purposes. In particular, households comprised of multiple tax units often have some discretion about how children are allocated across the tax units within the household.[1] Given the size of tax benefits associated with claiming dependents and the non-uniformity in these benefits across tax units, reallocating dependents can

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[1] A tax unit is defined as all individuals filing together on a tax return, including dependents. Individuals that do not appear on a tax return are considered single tax units in this paper. We use the terms "tax unit" and "taxpayer" interchangeably.

David Splinter: Joint Committee on Taxation, U.S. Congress, Washington, DC, USA (david.splinter@jct.gov)

Jeff Larrimore: Federal Reserve Board, Washington, DC, USA (jeff.larrimore@frb.gov)

Jacob Mortenson: Joint Committee on Taxation, U.S. Congress, Washington, DC, USA (jake.mortenson@jct.gov)

result in substantial reductions in tax liability for the household as a whole. This paper investigates the extent to which children are reallocated from one tax unit to another within multiple tax unit households, and the degree to which these reallocations result in lower tax burdens.

Understanding household responses along these lines is important for several reasons. First, estimates of behavioral responses to a policy are important when considering the full effects of potential policy changes, and this paper examines an underexplored dimension for such responses. The ability of households to reassign dependents represents an additional challenge to consider when targeting tax benefits, and potentially can alter the distribution of benefits across these recipients. Additionally, beyond its value for evaluating responses to policy changes, the frequency of dependent reallocations can inform discussions on the way resources are shared within households. In part due to data limitations, researchers using tax return data often use tax units as proxies for the economic sharing units where consumption, earnings, and savings decisions are made. However, there remains uncertainty over how best to define the true sharing unit. This study suggests that economic sharing units can include multiple tax units, as we provide evidence of coordination across tax units.

To explore the question of reassigning dependents, we create a new version of a panel dataset — the Tax Household Sample (THS) — which links tax records with a common address. Using these data, we can observe both the "sending" and "receiving" tax unit whenever the claimant of a child for tax purposes changes from one year to the next, without relying on information external to tax records. Since tax units are linked by addresses in the THS, we can isolate reassignments that occur *within* a single household, and separate these reassignments from those resulting from children moving from one household to another. Furthermore, we estimate the impact of these reassignments on total household tax liabilities and observe how the tax implications of reassignments changed with tax laws. This provides a nuanced picture of the tax motivations for reassignments and the extent to which reassignments occur for tax minimization purposes.

Researchers have long considered the potential impact of taxes on family formation decisions and most research seems to suggest a small impact of tax policies on family structures. For example, Michelmore (forthcoming), Alm and Whittington (1999), and Sjoquist and Walker (1995) each observe small impacts on marriage patterns in response to the relative tax rates for single individuals and married couples. Milligan (2005) observes that fertility rates rise in response to a large increase in child tax benefits and LaLumia, Sallee, and Turner (2015) find a small impact of taxes on the timing of births. However, Baughman and Dickert-Conlin (2009) find no positive effect of the earned income tax credit (EITC) on fertility rates among targeted populations.

One potential reason for varied effects in prior research is that many family decisions are quite substantial — including forgoing marriage or children completely — whereas others are relatively minor, such as whether to hold a wedding on December 31 or January 1 (thereby altering whether the couple is treated as married or single for the tax

year). Although taxes can potentially impact each of these decisions, one would expect that the likelihood of a response will increase with the complexity or costliness of the action. Reassigning a child to a different tax unit within the same household — which is the focus of this paper — likely falls on the relatively simpler side of family structure behavioral responses. This is because the decision of who should claim a child for tax purposes has no functional impact on the family, outside of the impact on tax liabilities, if the tax claimants are already living together.

Two recent papers have explored such strategic claiming of dependents: Tong (2014) and Jones and O'Hara (2016). Tong (2014) considers the degree to which dependents remain in the same tax unit over time, and estimates that 12 percent of children claimed for EITC purposes are in completely different tax units the following year. An additional 5 percent of EITC children are in tax units where one of the filers is either an addition to the return (as would occur from marriage) or is no longer on the return (as would occur from divorce). However, lacking address information, Tong does not differentiate between instances where the living arrangement of the child changed and those where it did not. Hence, reassignments that are likely motivated by taxes, where living arrangements did not change, are grouped with those that are more likely motivated by other causes.

Jones and O'Hara (2016) address the question of residency by using linked Internal Revenue Service (IRS) and Current Population Survey (CPS) data. Their linked data use name and address information to attach administrative records to Census datasets, which include the household roster and relationship status within the household for linked observations.[2] They compare the number of dependents claimed on tax returns to the number expected based on the relationships reported on the CPS questionnaire. They find higher rates of discrepancies between the expected and actual claimant of a child in households with EITC eligible individuals than in non-EITC households. Additionally, the likelihood of discrepancies shifted in 2009 when taxpayers began receiving additional EITC benefits for a third child — which provides further evidence of tax motivated reassignments. Although their work highlights an important and previously underexplored behavioral response to taxation, they acknowledge that their analysis is limited by the use of cross-sectional data rather than panel data and is constrained by the quality of relationship imputations in the CPS data.

We overcome these limitations with the THS dataset. This dataset follows taxpayers over time, includes the physical address where each taxpayer resides, and directly observes the movements of dependents across tax units — along with any associated impacts to tax liabilities. We observe reassignments occurring within multiple tax unit households. On average, these reassignments result in a household level tax benefit, suggesting that income taxes affect reassignment decisions. For example, in 2010 we

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[2] The linking process is a probabilistic match procedure based on the name, address, date of birth, and gender of the individual. See Wagner and Layne (2014) for details on the matching procedure, and Bond et al. (2014) for details on the success rate of these matches and an analysis of potential biases from mismatches.

estimate that households received an average federal income tax benefit from reassignment of $600 per dependent.

Consistent with the observations of Jones and O'Hara (2016), we also document a shift towards three child tax units in 2009 among those eligible for EITC benefits. However, this may have been to the financial detriment of these households. Within households where an EITC-eligible child was reassigned to a three-child tax unit in 2009, this resulted in an average increase in tax liabilities for the household relative to a counterfactual of the child remaining with their claimant from the prior year.
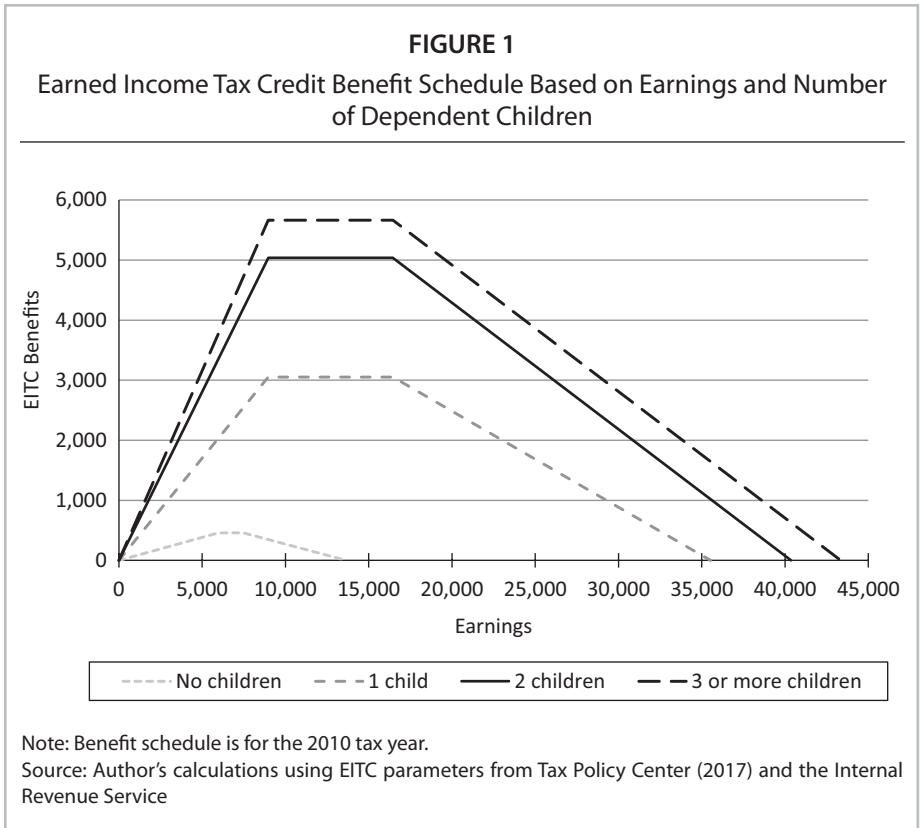
II. BACKGROUND ON THE EITC AND RULES FOR CLAIMING A CHILD

The EITC provides a refundable tax credit to low- to moderate-income tax filers that varies based on the level of earnings and the number of EITC eligible children claimed by the taxpayer. For a taxpayer with two children in 2010, these benefits phase-in at a rate of 40 percent of earnings until the $5,036 maximum benefit level is reached for taxpayers with at least $12,590 of earnings.[3] The benefits are then stable with rising incomes until the taxpayer reaches $16,450 of earnings. The benefits then phase-out at a rate of 21.06 percent for each additional dollar of earnings, and the credit is exhausted after the taxpayer's earnings reach just over $40,000. As illustrated in Figure 1, the EITC benefit levels increase with the number of dependent children for each of the first three children. Crucially for this paper, and as will be discussed later, it should also be clear from Figure 1 that the value of an additional EITC child will vary substantially depending on the income level of the taxpayer and on the number of other children in the tax unit.

In order to claim a child for EITC purposes, the dependent must meet three rules for eligibility. First, the child must have lived with the taxpayer for at least half of the year. Second, the child must have been under the age of 19 at the end of the tax year, a full-time student (for whom the age limit is under the age of 24), or totally and permanently disabled (for whom there is no age limit). Finally, the child must be the taxpayer's son or daughter (by blood or adoption), stepchild, foster child, brother, sister, stepbrother, stepsister, or their descendant. Hence, a sibling, niece, nephew, or grandchild can legally be claimed as a dependent for EITC purposes on a taxpayer's return.

Importantly, while a dependent may only be claimed for EITC purposes on a single tax return, when several tax units reside together in a household it is possible for a child to meet the current eligibility tests for multiple taxpayers. For example, in the case of an unmarried cohabiting couple who lives with their joint child, as long as the two parents agree on who will claim the child, either one may legally claim their child for EITC purposes (a non-parent in a cohabiting relationship, however, may not legally claim the child for the EITC). Similarly in the case where a child lives with both her parents

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[3] In the absence of legislative changes, the maximum benefit level increases each year with inflation — as does the earnings threshold for receiving these benefits. The phase-in and phase-out rates remain unchanged.

FIGURE 1

Earned Income Tax Credit Benefit Schedule Based on Earnings and Number of Dependent Children

EITC Benefits vs. Earnings

Note: Benefit schedule is for the 2010 tax year.
Source: Author's calculations using EITC parameters from Tax Policy Center (2017) and the Internal Revenue Service

and grandparents, either may generally claim the child as a dependent and receive the associated EITC benefits.[4]

Furthermore, the level of EITC benefits are determined based only on the income of the tax unit claiming the child. Hence, there is an opportunity for coordination within

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[4] The ability to do so may, however, be subject to additional restrictions depending on the incomes of each tax filer. Typically, if the parent of a child does not claim the child for the EITC, the child can legally be claimed by the co-residing related non-parent who had the highest adjusted gross income (AGI) during the year as long as their AGI is above that of the parent. See IRS publication 596 for additional details on current eligibility rules (www.irs.gov/publications/p596/ch02.html). These rules have changed over time. In 1991, the eligibility rules went from a dependency support test (or household maintenance test if not married) to a residency test with an AGI tie-breaker applied in all cases (Holtzblatt and McCubbin, 2004). The rules were further modified in 2002 as part of the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) to simplify the AGI tiebreaker rules and limit their applicability (Department of the Treasury, 2002).

multiple tax unit households regarding who claims a child, since not all eligible claimants qualify for the same tax benefits.[5]

The financial benefits from such opportunities can be observed through the examples in Table 1, which outline how the potential EITC benefits for a two tax unit household with two dependent children varies depending on who claims the children. In the first scenario, Alice is the sole earner and is at the plateau of the EITC benefits formula. As a result, by having Alice claim the two children, these taxpayers would receive approximately $5,000 of benefits — whereas they would receive no EITC benefits if Billy claimed the children due to his lack of earnings. This highlights how substantial the claiming decision can be for the household's finances.

The optimal claiming decision will vary, however, depending on the earnings of each tax unit in the household. Because EITC benefits phase-in and phase-out, it is not always the case that the household level EITC will be maximized by the higher earner claiming the children. This can be seen in Scenario 2 of Table 1. Similarly, the marginal EITC benefits from claiming additional children differs from the marginal benefits from claiming the first, so it can be advantageous to split children across returns. This is the case in Scenario 3, where the household claims more than $1,000 of additional benefits by each taxpayer claiming one child rather than one taxpayer claiming both.

There also was a recent change in tax laws that impacted the EITC benefits from claiming additional children on a single tax return. Prior to 2009, EITC benefits only increased for each of the first two children. As a part of the American Recovery and Reinvestment Act, starting in 2009 there was an added EITC benefit of up to $630 for a third child. This additional benefit does not mean that the household as a whole necessarily benefits from one tax unit claiming all three children — since the third child may produce a larger benefit as a dependent on a separate return (similar to the larger overall benefits accruing to the household from splitting children across the two returns in Scenario 3 of Table 1). Nevertheless, as will be discussed further in Section VI.A. of this paper, this tax law change does shift the relative financial incentives for who claims a dependent and provides an opportunity to understand how reassignments change in response to these tax provisions.

A. Salience of EITC Policies among Eligible Populations

Tax laws introduce the opportunity for some taxpayers to coordinate which tax units in their household claim dependents for tax purposes, but also introduce complexities in determining the optimal allocation. Taxpayers (or their advisors) must understand the regulations regarding who in the household may claim the dependent for EITC purposes, as well as have sufficient knowledge of the tax system to recognize which tax unit within the household would benefit most from the additional dependent.

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[5] While we focus here on the eligibility of children for EITC purposes since that is the tax credit for dependents that requires a shared residence, other benefits for dependents — including the child tax credit and head of household status — have separate requirements. See Holtzblatt and McCubbin (2003) for a discussion of the different definitions of qualifying children used for various tax benefits.

Table 1

Tax Unit and Household Level EITC Benefits for a Two Tax Unit Household
with Two Children

	EITC Amounts if Alice Claims Both Children	EITC Amounts if Billy Claims Both Children	EITC Amounts if Each Claims One Child
Scenario 1			
Alice's earnings: 15,000	Alice: 5,036	Alice: 0	Alice: 3,050
Billy's earnings: 0	Billy: 0	Billy: 0	Billy: 0
	Total: 5,036	Total: 0	Total: 3,050
Scenario 2			
Alice's earnings: 30,000	Alice: 2,182	Alice: 0	Alice: 885
Billy's earnings: 15,000	Billy: 0	Billy: 5,036	Billy: 3,050
	Total: 2,182	Total: 5,036	Total: 3,935
Scenario 3			
Alice's earnings: 15,000	Alice: 5,036	Alice: 0	Alice: 3,050
Billy's earnings: 15,000	Billy: 0	Billy: 5,036	Billy: 3,050
	Total: 5,036	Total: 5,036	Total: 6,010

Notes: Example is for tax year 2010. It assumes that both taxpayers are single or head of household and that both taxpayers are eligible to claim the children for EITC purposes.
Source: Author's calculations using EITC parameters from Tax Policy Center (2017) and the Internal Revenue Service

Previous research suggests that taxpayers have at least some understanding of the incentives from the EITC. Tach and Halpern-Meekin (2014), through qualitative interviews, observe that EITC recipients are aware of the link between dependents and tax refunds. Some taxpayers say they reassign dependents either to minimize the household's tax burden or to reward the actual caretakers of the child. Meyer and Rosenbaum (2001) demonstrate that the EITC increases employment rates among targeted populations, which indicates at least a basic recognition of the benefit structure. Additionally, Eissa and Hoynes (1998) find that while the EITC has a positive impact on labor supply among single women, it has a negative impact on employment among married women, which is consistent with the phase-out of benefits and an understanding of how employment interacts with the credit. Mortenson and Whitten (2017) find that many tax units report income close to the liability-minimizing point — which is virtually always somewhere in the EITC plateau region — including in years where this income amount shifts by thousands of dollars due to policy changes. Conversely, Chetty and Saez (2013) observe a limited ability for teaching taxpayers the amount that they should work to maximize their credits and suggest that on the intensive margin it is less clear that workers understand how small shifts in income impact their benefits. Similarly, Bhargava and Manoli (2015) use a field experiment and find that many EITC-eligible

taxpayers do not claim the credit due to lack of awareness of their eligibility. In summary, while it appears that EITC-claiming tax units often have some knowledge of the EITC benefit structure, there are limits to this knowledge which could serve to reduce any observed effects.

III. DATA

The THS data used for this study are drawn from the universe of individual income tax records for tax years 2007–2010. These tax records, which come from the IRS Compliance Data Warehouse (CDW), are collected by the IRS and have increasingly been used for tax related research, including by Chetty et al. (2014) and Larrimore, Mortenson, and Splinter (2017). A necessary aspect of these data for linking records into households is that rather than reflecting a subsample of tax filers, they include the full population of tax returns and major information returns received by the IRS.

The sample construction follows the method developed in Larrimore, Mortenson, and Splinter (2017), but observations are sampled at the individual rather than household level, as this study tracks individual children. Recognizing that some individuals may use one address for their annual tax return and another address (such as a PO Box) in communications with an employer or brokerage firm that reports data to the IRS on information returns, it also uses an alternative two address matching approach as explained later. The development of the THS consists of three steps: compiling tax records from a panel of individual level tax data for a nearly comprehensive set of U.S. residents, linking individuals into households by the address on their tax return or information return, and extracting a sample at the individual level.

The individuals in our sample consist of anyone listed on a tax return (e.g., Form 1040 or Form 1040-EZ) for a given tax year, including filers, their dependents, and non-filers with at least one information return for that year who are alive at the end of the year and younger than 100 years old. These individuals are restricted to U.S. residents, and only include those with an address in 1 of the 50 states or the District of Columbia. When constructing tax units within each household, the tax unit is considered anyone who files a tax return, along with their spouse if married, as well as any dependent children. Non-filers are included as separate tax units, since they do not file a tax return and therefore no information on spouses or dependents is available.

In joining individuals into households, we observe the address information on each tax form collected by the IRS. Each individual may have up to two addresses in our sample: a PO Box address and a street address. For filers, the address on the tax return fills one of the two address slots; an address from information returns (if any) fill the other slot. For non-filers, all addresses come from information returns, where the first address after sorting that matches the selection criteria is selected for each slot. Street addresses are standardized with more than 200 replacements of various character strings. For example, "FIRST" is replaced with "1ST" and "STREET" is replaced with "ST."

These cleaned addresses are used to combine individuals into households. For individuals with only a street address or only a PO Box address, we assign the same household identifier to all individuals sharing the same address and ZIP Code combination. For individuals with both a street address and a PO Box address, we first link individuals sharing the same street address. Next, we link all individuals with the same PO Box address, whether they have only a PO Box address or both types of addresses, as long as street addresses do not conflict. Finally, for unmerged single person households we link individuals who share a PO Box address with the individual, regardless of street address. This final step is included to help address any errors or idiosyncratic reporting that remains following the address cleaning procedure.

Using these data, we create a 1 percent random sample of all U.S. residents by selecting 100 four-digit Taxpayer Identification Number endings, and sample these selected individuals and all other members of their household. The distribution by household size in each year is shown in Table 2. Relative to 2010 Census estimates, the THS has more single person households and fewer two person households, but otherwise closely parallels the Census household size distribution.[6]

Table 2

Number of Households by Household Size (Millions)

Size of Household	2007 THS	2008 THS	2009 THS	2010 THS	2010 Decennial Census
1	34.0	35.2	35.7	35.9	31.2
2	33.5	33.2	33.3	33.5	38.2
3	17.9	17.9	17.8	17.9	18.8
4	14.3	14.4	14.6	14.9	15.6
5	7.0	7.1	7.1	7.4	7.5
6	3.2	3.3	3.3	3.5	3.1
7–10	2.3	2.4	2.4	2.7	2.3
Total	112.3	113.4	114.1	115.8	116.7

Notes: All estimates include all individuals, including both filers and non-filers. Individuals living in group quarters are excluded, which is defined in the tax data as households with 11 or more individuals. Household weights for each individual in the THS are 99.99 divided by household size, as larger households have more individuals sampled.
Source: U.S. Census Bureau, THS, and authors' calculations

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[6] For two-person households not on the same tax return, any deviation in the selected address fields will usually result in the observations failing to merge. In our sample, this will result in two separate one person households.

IV. SAMPLE SELECTION

To observe the reassignment of children between tax units within households over time, we narrow our sample to children ages 16 and younger living in households with at least two tax units for two consecutive years (e.g., 2007–2008, 2008–2009, or 2009–2010). The age limit of 16 ensures our sample is comprised of children who could be claimed for both the EITC and the child credit.[7] In households with only two tax units, we also require that both of the primary filers (those adult filers listed first on the tax return) be at least 20 years or older or receive the EITC or refundable child credits.

Table 3 outlines the impact of each restriction leading to our final sample. This table focuses on dependents that appear in 2009–2010, although the relative impact of each restriction is similar for the earlier years of our sample. In order to be included, the child must appear in a multiple tax unit household in two consecutive years — since these are the only children who could theoretically be reassigned across tax units within a household. This is the most substantial restriction on the sample, relative to the entire population of children.

We also restrict the sample to those in "persistent" multiple tax unit households, where the primary filer claiming the dependent in one year remains in the household in the subsequent year. This avoids reassignments that occur due to custody of a child changing and the child moving to another parent's household. Additionally, since the relationship test to qualify for claiming a child for EITC purposes is time-invariant, as long as a claimant and the child continue to reside together in the same household, the

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Table 3

Sample Restrictions: Number of Children in Persistent Multiple Tax Unit Households (Millions)

Total children age 16 or younger in 2010	**66.58**
In household with a single tax unit in 2010	−42.33
In household with a single tax unit in 2009	−10.06
Original claimant no longer resides with child	−1.58
Not claimed for EITC purposes in either 2009 or 2010	−4.36
Final Sample	**8.25**

Note: Restrictions stack on one another.
Source: THS and authors' calculations

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[7] Qualified child requirements for the EITC and child credit overlap substantially, but for the child credit, qualifying children must be younger than 17 years old (hence, our final year age restriction of 16), must be claimed as a dependent, and Individual Taxpayer Identification Numbers (ITINs) are valid, in addition to Social Security Numbers (which are required for the EITC).

initial claimant continues to be eligible to claim the child in the subsequent year even if they do not do so.[8] Finally, we limit the sample to children claimed for the EITC in one or both of the years they are in our sample ("EITC children").[9]

V. FREQUENCY OF REASSIGNING CHILDREN IN 2010

Within our sample of EITC children in persistent multiple tax unit households, we classify dependents as being "reassigned" from one tax unit to another within the same household if the claimant in year $t-1$ does not claim the child in year t. In the case of a married couple claiming a child, the child is only considered reassigned if neither parent claimed the child in the prior year (otherwise, by definition, any case of a single parent getting married will qualify as a reassignment which would result in an overstatement of the frequency of this tax minimization behavior). Of the 8.2 million EITC children in our sample of persistent multiple tax unit households, 410,000 shifted from one tax unit to another. Hence, approximately 5.0 percent of these EITC children were reassigned across tax units within their household from 2009 to 2010.

This magnitude of reassignment over time is relatively consistent over the period of analysis from 2007–2010. Between 2007 and 2008, 5.2 percent of children in persistent households with multiple tax units were reassigned from one taxpayer to another. Between 2008 and 2009, 5.1 percent were reassigned.[10] Note that even within multiple tax unit households, some children cannot be legally reassigned because the non-claiming taxpayers in the household do not meet the relationship tests to claim the child. Additionally, in instances where the financial situation of the household is consistent from year to year, there may be no financial incentive for reassigning dependents. Hence, our estimated shares are likely smaller than the shares of reallocations among only the taxpayers in multiple tax unit households who are legally eligible to reallocate dependents and who would financially benefit from doing so.

A. Types of Multi-Family Households That Reassign Dependents

The IRS data does not contain relationship statuses — either between individuals listed on the same tax return (with the exception of spouses) or between people living in the same household on different tax returns. This limits the ability to observe the

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[8] If the original claimant fails to continue living with the child for six months of the year, but reconnects prior to filing their tax return, the residency requirement may mean that they are no longer eligible to claim the child despite living at the same address. However, we expect this scenario only applies in limited circumstances.

[9] The potential value of reassigning is smaller for tax units not claiming the EITC, as there is less variability between the two tax units' value of claiming the dependent. For example, in 2010 their average tax effect from reassignment was a loss of $50, as compared to a benefit of $600 for EITC households.

[10] While the share reassigned fell slightly from 2007–2010, the number of children who were reassigned increased during this period from 340,000 to 410,000.

precise relationships of taxpayers who reassign dependents. However, using a variant of the Persons of Opposite Sex Sharing Living Quarters (POSSLQ) method, which is commonly applied to infer relationship status when it is unavailable, we are able to obtain broad estimates of relationship statuses in the tax data (see Casper and Cohen, 2000 and Fitch, Goeken, and Ruggles, 2005, for overviews of this approach and see Dokko, Li, and Hayes, 2015, for a modification of this approach that incorporates age bands into the relationship status imputation). We consider three relationship statuses in the data: independent cohabiting couples, multigenerational households, and roommates/other living situations. For these purposes, independent cohabiting couple are assumed to be instances with: exactly two unmarried, non-dependent taxpayers in the household, of opposite sex, and within 15 years of age.[11] Multigenerational households are those with at least a 16-year age gap between the primary taxpayer on two returns in the household. Roommates and other living situations are the residual households with multiple tax units, which includes any instances where primary taxpayers within the household are within 15 years of age, but where there are at least three non-dependent taxpayers within the household or there are two taxpayers of the same gender.[12]

Table 4 shows the frequency of EITC children across these three multiple tax unit household types in 2010. Multigenerational households are the most prevalent, representing 60 percent of these living arrangements, compared to 17 percent for independent cohabiting couples, and 24 percent for roommates/other living situations.[13]

Reassignments of EITC children occur disproportionately among cohabiting couples, either living independently or as part of a larger household. Just over 8 percent of EITC children living with independently filing cohabiting couples were reassigned from one claimant to the other between 2009 and 2010 (110,000 of the 1.37 million). This compares to a 3 percent reassignment rate for children in multigenerational households and a 7 percent reassignment rate for children in roommate/other households. Within the multigenerational and roommate/other households, however, about half of reassignments occur between two taxpayers who are potentially a cohabiting couple despite living with others (defined here as two unmarried individuals of opposite sex who are within 15 years of age and live together). In total, cohabiting couples, whether living independently or within larger households, account for about two-thirds of reassignments.

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[11] A known limitation of this approach is that it cannot capture unmarried same-sex couples as a cohabiting couple. It also may capture as cohabitating couples roommates of opposite genders.

[12] It is, of course, possible for there to be multiple distinct types of relationships within a household. However, these three sets are designed to be both exhaustive and mutually exclusive. While the EITC regulations would not allow unrelated roommates to reassign dependents across the household members, if the roommates are closely related (such as a brother or sister), then reassignment would be permitted.

[13] Using CPS data — where relationship statuses can be observed directly — Larrimore, Mortenson, and Splinter (2017) also observe that multigenerational households are the most frequent type of household containing multiple tax units, especially those with adult children living with their parents.

Table 4

Household Types and Reassigning Types among EITC Children in Persistent Multiple Tax Unit Households in 2010

	EITC Children in Persistent Multiple Tax Unit Households		Reassigned EITC Children	
	(Millions)	(Percent)	(Millions)	(Percent)
Independent cohabitating couple households	1.37	17	0.11	27
Multigenerational households	4.93	60	0.17	42
Reassignments between potential cohabiting couples			0.09	
Other reassignments			0.09	
Roommates and other household types	1.95	24	0.13	31
Reassignments between potential cohabiting couples			0.06	
Other reassignments			0.07	
Total	**8.25**	**100**	**0.41**	**100**
Cohabitating couple reassignments:				
Independent and in households with others			*0.26*	*63*

Notes: Counts are among children in households where one or more tax unit claims the EITC in either 2009 or 2010. For persistent multiple tax unit households: cohabitating couples live in two unmarried tax unit households, are within 15 years of age, and opposite sex; roommates are any type or number of tax unit where primaries ages are all within 15 years; multigenerational are those with ages more than 15 years apart. For reassigning children, definitions are based only on the two tax units claiming the child in 2009 and 2010. If these tax units are unmarried tax units, within 15 years of age, and of opposite sex, they are considered a potential cohabiting couple — even if they also live with others in the household. Multigenerational reassignments are cases where the child shifts from one tax unit to another where the primary filer is at least 16 years apart in age. Reassignments across roommates are instances where the child is reassigned across two tax units within 15 years of age where either one of the tax units consists of a married couple or the two tax units each consist of unmarried filers of the same gender.

Source: THS and authors' calculations

B. Potential Motivations for Reassigning Children

There are several potential reasons why tax units may reassign dependents within a household from one year to the next, as discussed by Tach and Halpern-Meekin (2014). One possibility is that the household is seeking to minimize their total household level tax burden (or maximize their total household level tax credits). Within households seeking to minimize the total tax burden, the reassignment from one year to the next could be due to changes in income or earnings of one or more tax units that alters the relative value of dependents to each tax unit, or it could occur as a result of increased salience to the potential benefits from reassigning the child.

In other cases, children may be reassigned through a combination of self-interest and household-level interest. For example, if the tax benefit of claiming the dependent is above a certain threshold, a parent may always claim the dependent, regardless of whether the potential benefit to other tax units in the household is higher. Alternately, the parent may allow another caretaker in the household to claim the dependent, even if that caretaker's tax benefit from the dependent is lower, as a form of compensation for the care they provide. Although it is not possible from the data to separate out each of these reasons for reassigning, it is possible to gain some insights into the extent to which respondents are acting to minimize their household level tax burdens by considering the changes in tax liabilities that occur when reassignments occur, as we do in the next section.

VI. TAX-EFFECTS OF REASSIGNING CHILDREN

In considering the impact of reassignments on households' overall tax liabilities, we use a tax change calculator created for this study, which accounts for changes in personal exemptions, standard deductions, the difference in tax bracket lengths between single and head of household filing statuses, child tax credits, and the EITC. Specifically, we compute the change in tax liability in year t resulting from removing the child from the year t claimant and adding them to the claimant from year $t-1$.[14] The change in tax liabilities from reassignment are calculated as the sum of actual tax liabilities in year t for the pair of tax units minus the sum of tax liabilities for the pair if the dependent remained with the claimant from year $t-1$.

For this tax simulation, we focus exclusively on children where a reassignment occurs. This is because, in the absence of relationship flags in the data, for non-reassigned children it is not possible to determine who, if anyone, in the household beyond the claimant could legally claim the child. Additionally, the population that actually reassigns children is the most relevant group for such an analysis, as the non-reassigning households may have simply felt that it is not in their financial interests to do so.

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[14] Some prior year claimants may be current year non-filers. We estimate the extent to which they would receive the EITC and refundable child credit and pay taxes (assuming single filing status) based on wages only, but limited such that adding a child never causes a non-filer to have a positive tax burden.

In 2010, two-thirds of reassignments of EITC children in persistent multiple tax unit households resulted in a reduction in total tax liabilities. The average federal income tax benefit from these reassignments was $600 per dependent, or $250 million for all reassigned EITC children.[15] This tax change calculator result is replicated using the NBER TAXSIM program, which also shows that the addition of state income taxes increases the average tax benefit of reassigning by about $40 (see Feenberg and Coutts (1993) for an overview of the TAXSIM program).

These tax benefits represent an average of 4 percent of combined tax unit AGIs for these reassigning tax units. Moreover, they appear to be concentrated among pairs where both tax units have incomes in the EITC range.[16] Hence, while there are households that may change the tax assignment of dependent children from one year to the next for non-tax reasons or in ways that increase their tax liabilities, it appears that the minimization of overall tax burdens for the tax unit pair is a contributing factor for some households.

A. Impact of 2009 Tax Changes on Reassignment

Thus far, we have largely focused on reassignments that occurred between 2009 and 2010, observing the extent to which tax liabilities are reduced for tax unit pairs within a household that reassign dependent children. The tax motivations for reassignments can be further assessed by considering how reassignments shifted in response to changes in tax legislation. In 2009, there were several tax changes that impacted the relationship between the number of dependents and tax liabilities. The most important of these is the expansion of the EITC that was described in Section II, which provided additional EITC benefits for a third child. This additional benefit may encourage some reassignments towards tax units with three dependent children.

We first analyze potential responses to the EITC change by exploring the extent to which reassignments changed in 2009 when these new policies went into effect. Table 5 shows the share of reassigned children by the number of dependents in the "sending" and "receiving" tax units. Coinciding with the introduction of the three-child EITC credit, in 2009 there was a large increase in the share of reassignments that led to a tax unit having at least three children. In 2008, 10 percent of reassignments of EITC children occurred from a tax unit with two or fewer children to one with at least three

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[15] Although this estimate is above the Jones and O'Hara (2016) 2005–2010 average estimate of about $500 per reassigned child, they estimate a larger aggregate total tax effect of $440 million in 2010. This reflects the fact that they include the entire stock of children claimed by someone other than their parent (or other expected claimant based on CPS relationship status imputations) whereas we focus on the one-year flow of reassigned children and also limit to those in persistent multiple tax unit households.

[16] Among the children in our sample who are claimed for EITC benefits in one year, but shift from or to a tax unit with an AGI of more than $50,000, which is beyond the EITC eligible range, there was an average loss from the reassignment. As a result, the benefits from reassignments generally do not appear to be resulting from children in tax units that are beyond the EITC range shifting into tax units that are in the EITC range, but instead from reassignments among multiple relatively low income tax units.

Table 5

Share of Reassigned EITC Children in Persistent Multiple Tax Unit
Households, by Number of Dependents in Starting and Ending Tax Units

| | | Share of Reassigned EITC children | | |
| | | Initial Year | | |
		<3 Dependents	3+ Dependents	All
Final year 2008	<3 dependents	0.74	0.12	0.86
	3+ dependents	0.10	0.04	0.14
	All	0.84	0.16	1.00
Final year 2009	<3 dependents	0.67	0.10	0.77
	3+ dependents	0.16	0.07	0.23
	All	0.83	0.17	1.00
Final year 2010	<3 dependents	0.64	0.14	0.78
	3+ dependents	0.14	0.07	0.22
	All	0.79	0.21	1.00

Notes: The initial year is always one year prior to the listed final year. Estimates are shares of children
in persistent multiple tax unit households who were reassigned and claimed for the EITC in either of
the two years.
Source: THS and authors' calculations

children. In 2009, the share increased to 16 percent of reassignments.[17] Overall, the share
of reassigned children going to tax units with at least three dependents (irrespective of
the number of dependents in their initial tax unit) rose from 14 percent in 2008 to 23
percent in 2009. This is consistent with taxpayers responding to the tax policy change
via reassignments. It is also consistent with the observations of Jones and O'Hara (2016)
that the EITC changes motivated some EITC taxpayers to claim an additional child in
order to take advantage of the expanded tax credits after the policy change.

  A priori, the tax liability implications of reassigning a child in order to receive the
three-child EITC are unclear. While the "receiving" tax unit will lower their tax liability,
this will be offset to some degree by an increased tax liability for the "sending" tax unit.
Reallocating dependents to receive the three-child EITC can be financially beneficial

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[17] Providing some support to the hypothesis that this shift was due to EITC policy changes, there was no
change in reassignments across these years among non-EITC households for whom there was no change
in the relative benefits from a third child. In both 2008 (before the EITC policy change) and in 2009 (after
the change), about 9 percent of non-EITC children reassigned from tax units with two or fewer children
to ones with three or more.

if the two taxpayers have divergent incomes. However, when the two potential claimants have similar incomes, consolidating dependents can often increase household tax liabilities.

Consider two taxpayers, Alice and Billy, who filed separately but lived in the same household with a total of three children in 2010. Further, assume they both had earned income that placed them in the EITC's plateau region, where the EITC is maximized. If Alice claimed one child and the other two children were claimed by Billy, the household would receive $8,086 of EITC ($3,050 for Alice claiming one child, and $5,036 for Billy claiming two). However, if all three children were reassigned to only one of the two tax units, the total EITC benefits would be $6,009 ($5,666 for the tax unit claiming the children and up to $343 for the childless tax unit).[18] Hence, in this example the reassignment to receive the three-child EITC could cost the household more than $2,000 in EITC benefits.[19]

Recognizing that the impact of reassignments on tax liabilities is not always obvious, Table 6 considers the average effect on tax liabilities from observed reassignments. In all cases, the tax liabilities are summed across the tax unit pair and therefore reflect the overall tax implications of a single child reassignment relative to not reassigning.

In 2008, reassigning EITC children within the household resulted in an average tax benefit of $810. The positive benefits are concentrated, however, among households reassigning to fewer dependents per tax unit — as tax units that reassigned children to tax units with two or fewer dependents had an average tax benefit from the reassignment of $980 per dependent whereas those that reassigned to tax units with three or more dependents had an average loss of $190 per reassigned dependent.

In 2009, the average benefits from reassignments fell substantially for tax unit pairs of each size, but remained positive for reassignments to small tax units and negative for reassignments to larger ones. It fell less among those that reassigned to claim the three-child EITC benefit — perhaps because the new EITC benefits reduced tax liabilities for the "receiving" tax unit, which offset some of the loss from the reassignment. However, even with the additional three-child EITC benefit, children reallocated from smaller tax units to those that, after the reassignment, have at least three dependents resulted in an average reassignment loss in 2009 of $240. In 2010, children reallocated in this way resulted in an average loss of $250. This suggests that while tax units showed a desire to claim this additional credit, to the extent that they reassigned dependents in order to do so it was a net financial loss for the household.

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[18] The maximum credit for a childless individual was $457, although the childless benefit phase-out range ended before the EITC benefits for tax units with children is fully phased in. The maximum childless credit available in 2010 to someone that is in the fully phased in range of the EITC benefits for those with children was $343.

[19] In addition to lost EITC benefits, the reassignment could also prevent the "sending" tax unit from claiming head of household status if they no longer have a qualifying person for head of household status as an exemption on their tax return. They also will lose any child tax credit benefits that they would have otherwise been eligible for, although these benefits may be more or less than the "receiving" tax unit's child tax credit benefits depending on their specific financial situation.

Table 6

Average Tax Benefits of Reassigning EITC Children
in Persistent Multiple Tax Unit Households, by Number of Dependents
in Starting and Ending Tax Units

		Tax Benefits (Dollars)		
		Initial Year		
		<3 Dependents	3+ Dependents	All
Final year 2008	<3 dependents	910	1,380	980
	3+ dependents	−160	−260	−190
	All	790	930	810
Final year 2009	<3 dependents	610	910	650
	3+ dependents	−240	10	−170
	All	450	550	460
Final year 2010	<3 dependents	720	1,190	800
	3+ dependents	−250	20	−150
	All	540	790	600

Notes: All values are rounded to the nearest $10. The initial year is always one year prior to the listed final year. Tax benefits compare actual tax liabilities of the reassigning tax unit pair to counterfactual liabilities had the child not been reassigned. Estimates are for children in persistent multiple tax unit households who were reassigned and claimed for the EITC in either of the two years. The number of dependents are based on the total number of dependents in the tax unit claiming the child.
Source: THS and authors' calculations

B. Impact of the Child Tax Credit

A remaining puzzle from Table 6 is the substantial drop in average reassignment gains that occurred in 2009 for reassigning tax units. This can likely be attributed to changes to the Additional Child Tax Credit (ACTC), the refundable portion of the child tax credit. These changes occurred between 2007 and 2009 and reduced the potential benefits from reassignment.

The ACTC provides a refundable tax credit of up to $1,000 per child, with a phase in rate of 15 percent for earnings over a refundability threshold. In 2007, this refundability threshold was $11,750 — so if a taxpayer had no tax liabilities they needed to have about $18,400 of earned income to receive the full refundable credit for one child and about $25,100 of earnings to receive it for two children. The refundability threshold was lowered to $8,500 in 2008, and was lowered further to $3,000 in 2009. As a result, in 2009 a taxpayer with no tax liabilities could receive the full refundable child tax

credit for one child if they had about $9,700 of earned income and could receive the full refundable child tax credit for two children if they had about $16,300 of earned income. By lowering the refundability threshold, the likelihood increased that both the "sending" and "receiving" tax units qualified for the entire refundable child tax credit — thereby reducing the potential ACTC benefits from reassignment.[20]

The impact of this can be observed in Table 7, which illustrates the average tax benefits from reassignments in 2009 — but under the counterfactual that prior-year EITC and child credit tax laws remained in effect. When applying the prior year tax policies (no three child EITC and the 2007 child credit refundability threshold of $11,750 rather than the 2009 policies), reassigning tax units in 2009 would have experienced an average benefit of $750 from the reassignment of the dependent. This compares to the actual observed reassignment benefit of $460 in that year. When holding the EITC policy constant at its 2007 parameters, but allowing ACTC policies to reflect its 2009 parameters, the average benefit falls from $750 to $540. Hence, a majority of the drop in reassignment benefits in 2009 relative to earlier years are accounted for by the new ACTC policies.

Table 7

Average Tax Benefit from Reassigning EITC Children in Persistent Multiple Tax Unit Households in 2009 under Prior Year Policies (Dollars)

		All		<3 Dependents		3+ Dependents	
		EITC Policy		EITC Policy		EITC Policy	
		2008	2009	2008	2009	2008	2009
Child credit policy	2007	750	680	1,050	860	−250	50
	2008	680	610	980	800	−310	−20
	2009	540	460	840	650	−460	−170

Notes: All values are rounded to the nearest $10. Tax benefits compare actual tax liabilities of the reassigning tax unit pair to counterfactual liabilities had the child not been reassigned. Estimates are only for children in persistent multiple tax unit household who were reassigned and claimed for the EITC in either 2008 or 2009. 3+ or <3 dependent groups by 2009 tax unit claimant. Prior year policies only change child credit refundability thresholds and remove the three-child EITC.
Source: THS and authors' calculations

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[20] The only case where the tax law change would increase the gap in child tax credits between the two tax units is a case where the earnings of the higher earning tax unit are sufficiently low that the refundable credit was not fully phased in when using the old threshold. In these cases, depending on the earnings of the lower earning tax unit, it is possible that the child credit related tax benefit from reassigning could increase.

VII. DISCUSSION AND CONCLUSION

This paper provides evidence of coordination between separate tax units at the household level when assigning children for tax purposes. Using a new household level panel dataset comprised of tax records, we observe the reassignment of dependents from one taxpayer to another over two year periods. We estimate that on average these reassignments lowered combined tax liabilities. In each year from 2008–2010 there was an average tax benefit to reassigning households of between $460 and $810 per reassigned dependent. This suggests that taxes were a contributing factor to the reassignment decision.

As further evidence that taxpayers are considering tax policy when making reallocation decisions, changes in EITC rules in 2009 — which allowed for additional EITC credits for a third child — coincided with a greater share of reassigned EITC children to appear on tax returns containing at least three dependents. However, while some taxpayers appear to reassign dependents within their households at least in part to reduce the household level tax liability, there is also evidence that taxpayers may not consider the full repercussions of reallocations. Households who reassigned dependents into larger tax units experienced a net increase in their tax liabilities, on average, because of the reassignment.

These findings reinforce the importance of considering the full range of behavioral responses to tax legislation, including those related to household formation and tax unit structure. Further, it emphasizes the notion that tax units are not a perfect proxy for economic sharing units, as we document apparent coordination across tax units within households, especially among cohabiting couples. However, this coordination has limits, as some taxpayers may prioritize minimizing their own tax burden despite increasing their household tax burden. Taxpayers may also respond to particularly salient aspects of tax policy, at least in the short run, without considering all provisions in the individual income tax code. The extent to which any limitations on household level tax minimization are due to each of these two competing factors is beyond the analysis of this paper, but would be a valuable avenue for future study.

ACKNOWLEDGMENTS AND DISCLAIMERS

DISCLOSURES

The authors have no financial arrangements that might give rise to conflicts of interest with respect to the research reported in this paper.

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