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REASONABLE CHILD SUPPORT ORDERS:

THE RELATIONSHIP BETWEEN INCOME AND COLLECTIONS

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EXECUTIVE SUMMARY

In recent years, the federal Office of Child Support Enforcement (OCSE) has recognized the importance of creating support orders that balance a custodial parent's need for support and a noncustodial parent's ability to pay it. In particular, OCSE cited research that suggests support orders exceeding 20% of an obligor's income result in lower payment compliance and, ultimately, arrears accumulation (Federal Register, 2014). Our own research showed that obligors may only be able to pay between 20% and 30% of their earnings toward current support (Hall, Passarella, & Born, 2014), a range that has been empirically supported as a reasonable obligation. In light of the shift toward more reasonable support orders, we conducted a multivariate linear regression utilizing a sample of 3,680 new child support orders to estimate the effect of high support orders relative to an obligor's income—order-to-income ratio—on child support collections.

The average order-to-income ratio for Maryland obligors is 20%.

About three in four (77.1%) obligors had order-to-income ratios between 10% and 25%. Very few (3.5%) obligors had ratios below 10%, and one in five (19.5%) had orders above 25% of their income.

Obligors paid an average of 56% of their current support.

Over a three-year period, most obligors paid their current support. In fact, more than one-third paid 80% or more of their current support, and few (7.7%) paid nothing.

Obligors with orders between 30% and 35% of their income had a collection rate that was 17 percentage points lower than obligors with orders under 10% of their income.

Put another way, if an obligor with an order less than 10% of their income had a collection rate of 75%, then a similar obligor with an order between 30% and 35% of their income would have a collection rate of only 58%.

All order-to-income ratios above 10% had lower collection rates, however, orders exceeding 30% of an obligor's income resulted in a large decline in collections, suggesting that there is a threshold at which orders should not exceed—30% of income.

The use of wage withholdings and income imputation had large impacts on collections.

Obligors with a wage withholding had collections that were nearly 30 percentage points higher than those without one. But, wage withholding is only effective for obligors with regular employment.

Unemployed or under-employed obligors whose incomes were imputed to full-time minimum wage for the purpose of establishing a support order amount had collection rates that were 17 percentage points lower than obligors whose actual income was used for establishment.

While the finding in this report does not arrive at the exact same threshold found in other research, the main conclusion is the same: there is a point at which a child support order is too high and beyond an obligor's ability to pay. These high orders are ineffective as they result in lower, not higher, collections, and lead to arrearage accumulation. Policy and program changes centering on a reasonable support order should be implemented in the best interests of custodians, children, and obligors, as well as state agencies.

INTRODUCTION

The foundational premise of the public child support enforcement program is that noncustodial parents should pay their fair share towards the costs of raising their children. But what is fair? Advocates for children and their custodians often complain that child support order amounts are too low, while advocates for noncustodial parents simultaneously argue that they are too high. Depending upon parental circumstances, either argument can be true. Support obligations that are too low, for example, are detrimental in several ways. Collections in such cases are unlikely to be sufficient to help the custodial parent leave or remain independent from cash assistance. Most importantly, very low support orders, even if they are fully paid, may simply be inadequate to meet a child's financial needs.

On the other hand, when order amounts are too high, then collection efforts, often expensive, may yield no results, because the noncustodial parent is simply unable to pay the ordered amount. When obligors are not involved in the order-setting process or when orders are based on potential, rather than actual, income, payment compliance is also adversely affected (Hall, Passarella, & Born, 2014; Office of Inspector General, 2000; Takayesu & Eldred, 2011).

The mandatory use of child support guidelines to calculate support obligations has led to improved efficiency and standardization in the process of setting support order amounts. However, arguments about support obligations being too high or too low have not ceased. In fact, various aspects of the guidelines models themselves have come under criticism. Some assert that the child-rearing cost data undergirding most states' guideline matrices are outdated and understate what raising a child actually costs (Morgan & Lino, 1999). On the other side of the equation is the contention that, in most conventional guidelines approaches, especially income shares models, the subsistence income needs of the noncustodial parent are not adequately taken into account. Even with policies in place allowing self-sufficiency deductions and other modifications, some argue that the support amounts arising from conventional guideline approaches are still beyond the reach of some obligors' ability to pay (Huang, Mincy & Garfinkel, 2005; Office of the Inspector General, 2000; Sorensen & Zibman, 2001).

Hence, a universal, normative consensus about the *right* amount of child support does not exist and is probably unachievable. Using empirical data, though, it should be possible to identify what is *reasonable*. Theoretically, a reasonable support obligation balances the amount of support desired by the custodial parent against the noncustodial parent's ability to pay. This would, ideally, result in a support obligation that is both payable and paid. Reasonable support orders thus also contribute positively to the child support agency's performance.

This report uses a large (n=3,687) stratified, random sample of Maryland public child support cases to investigate the notion of reasonable or right-sized support obligations. Our specific intent is to see if we can empirically discern any association between two critical variables: noncustodial parents' order-to-income ratio and the child support collection rate. We hope to discover if reasonable orders are more likely to result in collections, where *reasonable* is operationally defined as a ratio of the support order amount to obligor income: the order-to-income ratio. Through this investigation we provide answers to the following questions for

Maryland:

1. What are the order-to-income ratios of noncustodial parents?
2. What percentage of child support is collected over a three-year period?
3. What, if anything, is the relationship between the order-to-income ratio and current support collections?

Simply stated, having a child support order is useless if it does not result in any collections. Thus, understanding what a reasonable support order is—one which takes into account what a custodial parent needs and what a noncustodial parent can afford—better serves families. In particular, it would be helpful to look at whether there is a relationship between an obligor's income, support order amount, and support collections over time. If such a relationship exists, understanding its direction and magnitude can facilitate informed policy choices. By asking and answering the research questions posed above, this study provides Maryland policymakers with some preliminary empirical data on reasonable child support orders.

METHODOLOGY

This report summarizes the findings of an unpublished dissertation completed by a research staff member of the Family Welfare Research and Training Group at the University of Maryland, School of Social Work (Saunders, 2012).

Data Sources

This study was conducted using a statewide administrative database maintained by the Maryland Department of Human Resources and a database developed by the Family Welfare Research and Training Group.

Child Support Enforcement System

The Child Support Enforcement System (CSES) has been the statewide, automated information management system for Maryland's public child support program since March 1998. It contains information on individual, case, and support order characteristics as well as accounting information on payments collected and distributed for all public, IV-D cases.[1]

When examining collections, we use distributions to the case as opposed to collections or disbursements. Collections are at the obligor-level and disbursements are at the custodian-level. Hence, the appropriate approach for case-level analyses is distributions to a case.

Case-level Guidelines Review Database

Federal and Maryland laws require the use of established child support guidelines where a support order is established or modified, as well as a quadrennial review to document guideline compliance. For this project, the sample is a subset of the 6,530 cases examined in the quadrennial guidelines review project covering the period of January 2002 through December 2006. The 6,530 cases were randomly drawn from the universe of 78,981 child support orders established or modified during the review period.

This involved the review of the guidelines worksheets and court orders associated with sampled cases, the abstraction of data, and the creation of a database specifically for the project. Information contained on guidelines worksheets is particularly valuable as much of it is not captured in CSES. Specifically, the worksheets provide custodial and non-custodial parent gross incomes, individual and combined adjusted gross incomes, deductions and added expenses, and recommended support order amounts as per the guidelines. The final report for that review period contains more detailed information about project methodology and study findings (Saunders, Young, Owvigho, & Born, 2008).

Study Sample

For this study examining how obligors' order-to-income ratios may affect child support collections, we limit our focus to only those cases that were new order establishments. We exclude all modifications (n=2,315) as well as some cases with new orders due to data anomalies (n=535). The final sample size is 3,680 cases. However, the original guidelines sample had been stratified by jurisdiction so that valid jurisdictional-level findings could be generated. Therefore, in this study, we apply weights to the sample in order to adjust for over-sampling in smaller jurisdictions and under-sampling in larger jurisdictions. The final weighted number of cases is 3,687.

Research Methods

Our research question is whether and how the order-to-income ratio is related to the child support collection rate. In addition to presenting basic descriptive statistics, we also use Ordinary Least Squares (OLS) to estimate a multivariate linear regression, testing whether a nonlinear relationship between the two variables exists.

[1] The public child support program is authorized under Title IV-D of the Social Security Act and is often referred to as the IV-D program.

ORDER-TO-INCOME RATIOS & CURRENT SUPPORT COLLECTION RATES

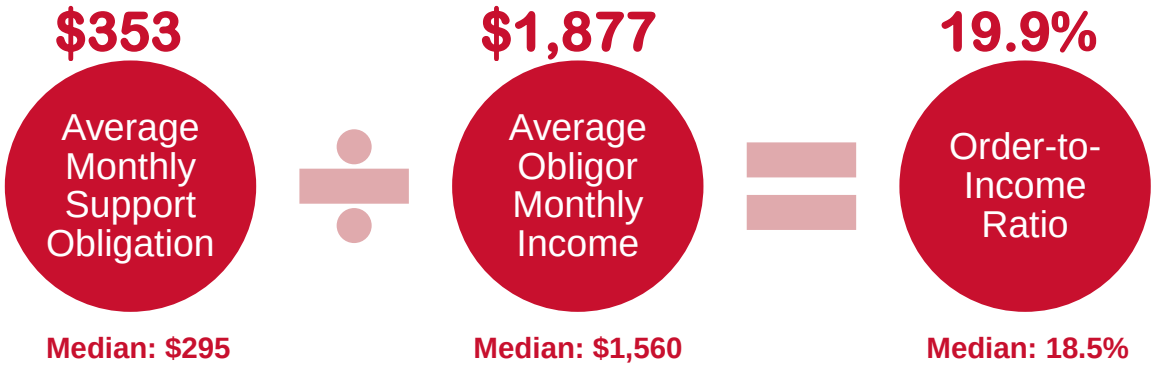
The ability for obligors to pay their current support obligations can be influenced by a number of factors. Three of these factors have been identified in the literature: willingness to pay, ability to pay, and child support enforcement measures. This study focuses on one factor, ability to pay, defined as the order-to-income ratio. The order-to-income ratio measures an obligor's current support order amount as a percentage of the obligor's income.

Order-to-Income Ratio

Noncustodial parents' ability to comply with their child support obligations is directly tied to their income. Ideally, the income used to determine a support order amount is based on actual, earned income, resulting in an order that should be within an obligor's ability to pay. However, the earnings of some obligors are imputed, typically to the equivalent of a full-time minimum wage, because the obligor did not participate in the order establishment process or was unemployed or under-employed at the time of establishment. Whether actual or imputed, the support order amount is based on the income documented on the worksheet.

To obtain the order-to-income ratio for each obligor in the sample, we divided the monthly current support obligation (average=$353) by the obligor's adjusted monthly income (average=$1,877). As Figure 1 shows, the average order-to-income ratio among obligors is about 20%. In other words, a typical obligor with a Maryland child support obligation established between 2002 and 2006 had a monthly support obligation equal to about 20% of his or her adjusted monthly income. Using the median or mid-point values for both the support order amount ($295) and adjusted monthly income ($1,560) does not change the results very much. Using this approach, half of the noncustodial parents in our sample have an order-to-income ratio greater than 18.5% and half of them have a ratio less than that.

Figure 1: Order-to-Income Ratio

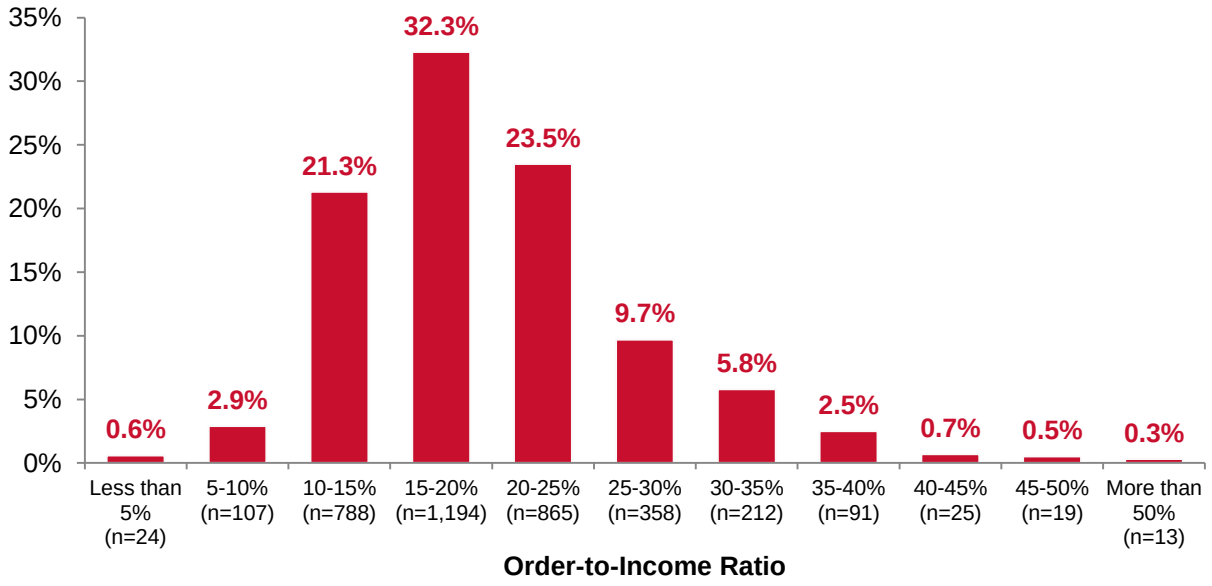


Note: Obligor monthly income is based on the adjusted monthly income used to determine the recommended child support obligation amount, and is calculated by subtracting the following from gross income: other paid child support obligations paid; health insurance premiums; and paid alimony. On average, adjusted monthly income is approximately $100 per month lower than gross income.

On the face of it, the finding that the average order-to-income ratio is about 20% is positive, as it aligns with findings from the few other studies that have looked specifically at this threshold question. Huang et al. (2005), for example, found that high child support obligation rates among low-income fathers significantly reduced their child support compliance. Two Wisconsin studies also concluded that high child support obligation rates were associated with low payment compliance (Hu & Meyer, 2003; Meyer, Ha, & Hu, 2008). Similarly, Takayesu and Eldred (2011) examined more than 100,000 California child support cases and concluded that "[a] 19% threshold in setting an order is recommended for policy makers to assure the highest compliance and collections received". The State of Washington also found that current support obligations larger than 20% of an obligor's gross monthly earnings were associated with noncompliance and with the accrual of arrears (Formoso & Liu, 2010).

How are obligors' order-to-income ratios distributed around the recommended threshold of roughly 20%? Figure 2 shows this distribution, and the findings are generally positive. The ratios tend to cluster fairly close to the observed average of 19.9%, such that more than three in four obligors had order-to-income ratios between 10% and 25%. More specifically, one-third (32.3%) have a current support order that represents between 15% and 20% of their adjusted gross income. An additional one-fifth (21.3%) of obligors have order-to-income ratios representing somewhere between 10% and 15% of adjusted gross income, and about one-quarter (23.5%) have an order-to-income ratio between 20% and 25%. Very few (3.5%) obligors have order-to-income ratios of less than 10%, but one-fifth (19.5%) have current child support obligations that are greater than 25% of their adjusted gross incomes.

Figure 2: Distribution of Order-to-Income Ratios



Notes: Seventeen cases are excluded from analyses because no obligor income was recorded on the worksheet, so the order-to-income ratio could not be calculated. Two other cases had ratios greater than 100% and were top-coded at 100%. In one, the order effective date was deferred to when the NCP was expected to have more income; the other used imputed income for an incarcerated NCP.

Collection Rate

Ultimately, we are concerned about child support collections and whether the order-to-income ratio affects an obligor's ability to pay. To explore this possible connection, we examine an obligor's collection rate over a three-year period after the establishment of the current support order. The collection rate is a simple calculation of the amount of current support collected divided by the amount of current support due. We examine collection rates over a three-year period to avoid attributing, payments to an obligor, a single year of that may not reflect longer-term payment compliance.

As shown in Figure 3, the typical obligor in the sample owed $11,350 in current support in the first three years after the support order was established. On average, a total of $7,251 was collected and distributed to current support, about 55% of the amount due. Averages, of course, are heavily skewed if there are very high or very low values in the data. Thus, median, or mid-point, values are also shown in Figure 3. Both the median amount of total support due ($9,419) and the median amount collected and distributed ($5,190) are lower than the averages. Median collections, however, are higher, at 63.7%, which means that in half of the study cases more than 63.7% of support owed was collected and in half of cases less than 63.7% was collected.

Figure 4 presents the distribution of the three-year collection rates. Collection rates actually cluster at the high end of the spectrum. In roughly one in three (35.4%) cases, 80% or more of the current support obligation was collected. Furthermore, the largest group of noncustodial parents (18.5%) was comprised of those who paid more than 90% percent of their current support obligation over the three-year time period. At the other extreme, only 1 in 14 (7.7%) obligors paid nothing, and less than 1 in 10 (8.5%) paid less than 10% of what they owed.

Figure 3: Collection Rate in the Three Years after Order Establishment

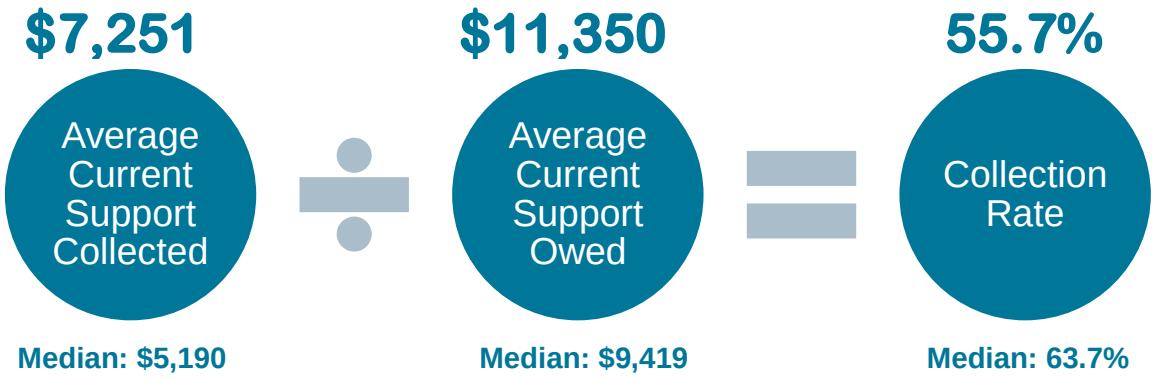


Figure 4: Distribution of Collection Rates

Note: Some cases had three-year collection rates greater than 100% and were top-coded at 100%. A review of these cases revealed that they generally had less than $1,000 due for the entire follow-up period, and the high collection rates reflected data anomalies and/or timing issues.

Comparing the Order-to-Income Ratio and Collection Rate

We have thus far described the distributions of order-to-income ratios and collection rates separately, but the important question for child support program managers and judicial partners is whether and how the two may be related. Therefore, we begin by examining the bivariate[2] relationship between these two factors by presenting the average three-year current support collection rate for study cases grouped by their order-to-income ratios in Figure 5.

There is a negative linear relationship between order-to-income ratio and collection rate, meaning that as the order-to-income ratio increases, the three-year current support collection rate decreases. For example, obligors whose order-to-income ratios are between 5% and 10% have a three-year total current support collection rate of 71%. On the other hand, obligors whose order-to-income ratios are between 20% and 25% have a three-year collection rate of only 48%. However, there is not a totally straight-line

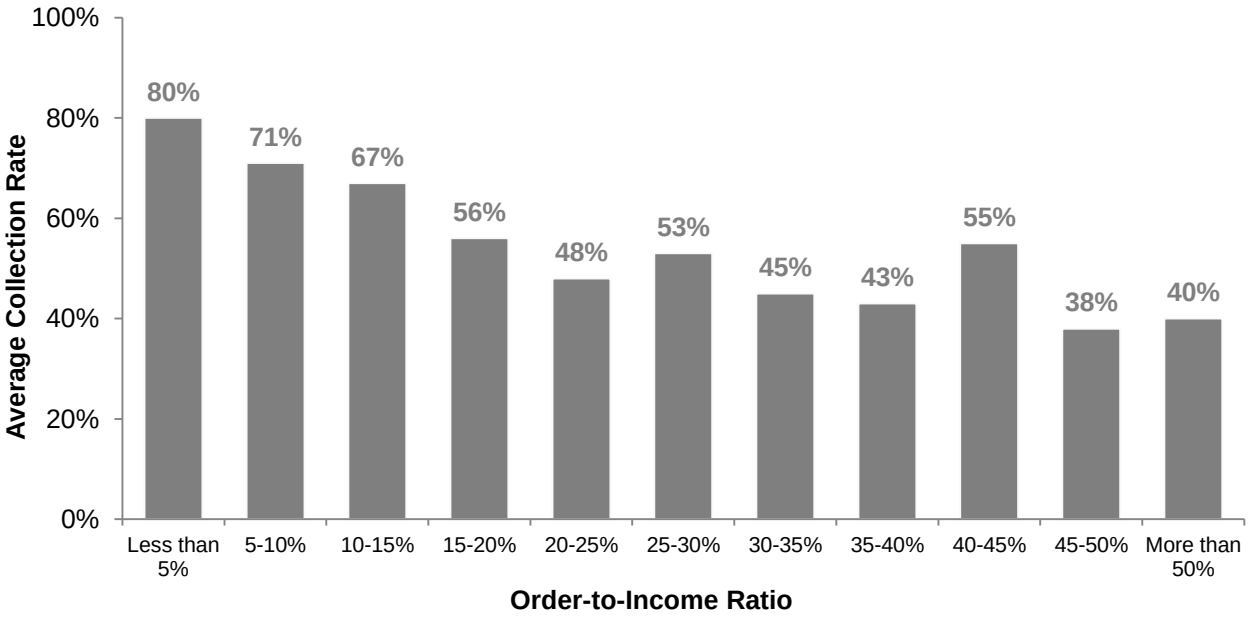
[2] Bivariate analyses examine the relationship between two pieces of information, in this case, order-to-income ratio and collection rate. This bivariate analysis uses chi-square tests to determine whether the observed differences are significant, but it does not determine any casual relationships between the two variables.

relationship between the two variables. In particular, the total three-year current support collection rate is slightly above 50% in two categories with relatively high order-to-income ratios: 25% to 30% and 40% to 45%.

The initial results of this bivariate analysis support the hypothesis that, in general, a higher order-to-income ratio is associated with lower child support compliance. However, how well the order-to-income ratio predicts collections and whether there is a straight line (i.e., linear) relationship between the two variables can only be determined through multivariate[3] techniques. Thus, in the next chapter, we use regression techniques to address whether and how the order-to-income ratio is causally related to the three-year current support collection rates, all else equal. Not only will these analyses help to answer the research question, through the use of multivariate methods, we hope to shed empirical light on a long-overlooked, but important child support policy question—whether *reasonable* support orders are more likely to be paid.

[3] Multivariate analyses use multiple variables to test their causal relationship on a single variable. In this study, we use Ordinary Least Squares (OLS) regression to test the effects of the order-to-income ratio as well as other case and demographic characteristics on the obligor's collection rate.

Figure 5: Average Collection Rate by Order-to-Income Ratio



DOES ORDER-TO-INCOME RATIO PREDICT COLLECTION RATE?

The order-to-income ratio does, in fact, predict the three-year current child support collections. The relationship between the variables is a complex one, but overall the effect of the order-to-income ratio on collections is negative, such that higher order-to-income ratios are likely to result in lower three-year collection rates. However, the complex reality is that other variables also exert their own independent and, in some cases, much larger effects on collection rates. These factors should also be taken into account in deliberations about possible policy changes related to the right-sizing of support order amounts.

We arrive at these conclusions through the use of Ordinary Least Squares (OLS) regression. This multivariate technique allows us to test the relationship between the order-to-income ratio and the collection rate, while controlling for other factors that are known to be associated with the likelihood of support collections. These factors include: when and where the order was established, whether the noncustodial parent is the mother of the child, whether the order was established using imputed income for the obligor, and whether the case closed during the three-year follow-up period. We begin this chapter by focusing on the relationship between the order-to-income ratio and the collection rate, and we end by describing the other factors that also affect the collection rate.

Order-to-Income Ratio and Collection Rate

The relationship between the order-to-income ratio and the collection rate is statistically significant and in the expected negative direction. That is, increases in the order-to-income ratio correspond to decreases in collections. Conversely, this also means that decreases in the order-to-income ratio correspond to increases in collections. However, the magnitude of the relationship is relatively small. According to the OLS model in Appendix A, a one percentage point increase in the order-to-income ratio is predicted to result in a decline of about a half a percentage point (β=-0.427) in collections. This means that if a noncustodial parent's obligation was 25% of his income and he paid 80% of that obligation, but had his order-to-income ratio increased to 27%, then we could expect a reduction in his collections of about one percentage point to 79%. This suggests that small changes in an obligation amount relative to an obligor's income are unlikely to have large effects on the collection rate. Regardless, we still want to know if there is a threshold at which an order-to-income ratio is too high and will have substantial impacts on the collection rate.

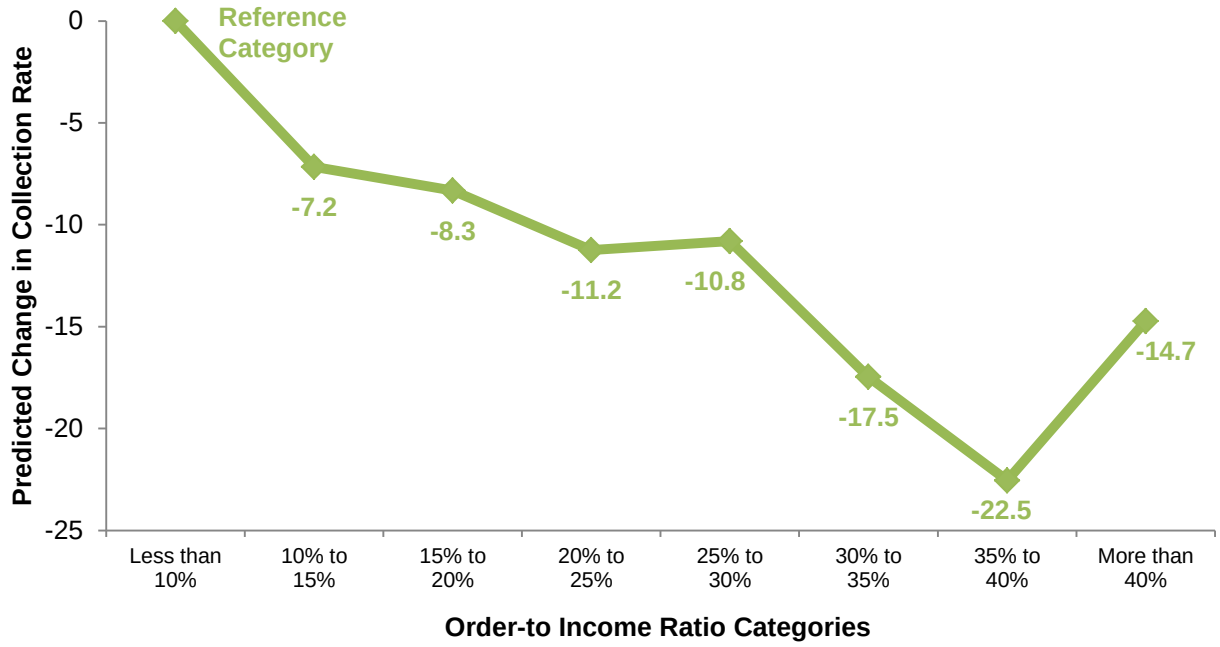
To address whether such a threshold exists, we divided the order-to-income ratio into eight categories and tested their effect on the collection rate. Figure 6 provides the predicted effect on the collection rate at each of the eight different categories of order-to-income. Appendix B provides the full OLS model.

Relative to the lowest category of the order-to-income ratio, in which child support obligations represent less than 10% of the obligor's income, obligors with higher ratios have lower predicted collection rates, holding all other variables constant. Compared with obligors who have an order-to-income ratio less than 10%, the predicted collection rate is about 7 percentage points (β=7.165) lower for obligors with an order-to-income ratio between 10% and 15%. Put another way, if an obligor with an order-to-income ratio less than 10% had a collection rate of 75%, then it is predicted that a similar obligor with an

order-to-income ratio between 10% and 15% would have a collection rate of 68%, all other factors being equal.

Each of the order-to-income ratio categories between 10% and 30% has a predicted collection rate between 7 and 11 percentage points lower than the category under 10%. After that, the predicted collection rate declines dramatically. Specifically, obligors with an order-to-income ratio between 30% and 35% have a predicted collection rate that is 17 percentage points lower than those with an order-to-income ratio under 10%. For obligors with an order-to-income ratio between 35% and 40%, their predicted collection rate was about 23 percentage points lower than those with a ratio under 10%. Obligors with a ratio above 40%, however, seem to have better collection rates than those with a ratio between 35% and 40%, although this may be due to the group's small sample size (n=57).

Figure 6: **Predicted Effect of Order-to-Income Ratio on Collection Rate**



Other Factors that Predict the Collection Rate[4]

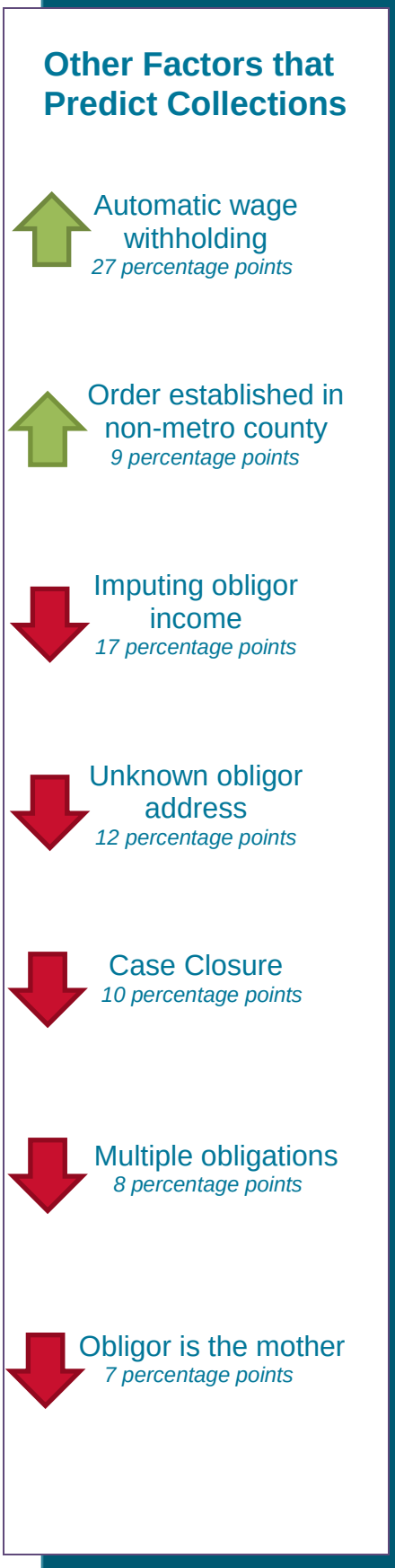
The focus of these analyses has been on the relationship between the order-to-income ratio and the collection rate, but there are many other factors that can also have an impact on collections. The advantage of using the OLS model is the ability to isolate the effects of various factors on a dependent variable—order-to-income ratio. Many factors have a statistically significant effect on collections, as seen in Appendix A, but the magnitude of the effect varies. Hence, this section focuses on the factors that have the largest effects on the collection rate. Specifically, we discuss the effect of the following on the collection rate: automatic wage withholding, imputed income, unknown obligor address, case closure, jurisdiction of order establishment, multiple obligations, and mothers as the obligors.

Automatic Wage Withholding

Wage withholding—the automated collection of child support via an obligor's paycheck—is the single most effective child support collections tool, accounting for 70% of all collections nationwide (OCSE, 2014). It is a primary tool for collections in Maryland, as the vast majority (83.3%) of the cases in this study had at least one month of support retrieved through wage withholding. Among cases without a wage withholding, two in five had no collections during the three-year follow-up period.

The use of wage withholding has a large and statistically significant positive effect on the collection rate. In fact, it has the largest effect on collections than any other variable in the analysis. Compared with cases that had no months of collections by way of automatic wage withholding (including those without any collections at all), automatic wage withholding increased collections by nearly thirty percentage points (β=27.086). Wage withholding is undoubtedly the best predictor of regular child support payments, and cases with a wage withholding in place have minimal case management needs. However, this tool is only effective for obligors with regular employment. Wage withholding cannot be used for obligors who are self-employed, those who work under the table, and of course, those without any employment or irregular employment. Other methods of collection are required for these obligors.

[4] Appendix A provides the findings of the regression model predicting the collection rate, while Appendix C provides the descriptive findings for each of the control variables.



Imputed Income

Child support obligations in Maryland are based on the incomes of both the custodial and noncustodial parents. State law allows for the imputation of income for parents who have voluntarily impoverished themselves. In practice, however, noncustodial parents, in particular, may have their incomes imputed at the time of order establishment if they do not appear for the proceedings or if they participate, but are unemployed or under-employed at the time. Generally, income is imputed at earnings that are equivalent to full-time at the prevailing minimum wage. A plethora of research delineates the negative effects of income imputation (e.g. Passarella & Born, 2014; Legler, 2003; OCSE, 2006; Roberts, 2001). Nonetheless, about one in every six (17.0%) noncustodial parents in the sample appeared to have current support obligations set on the basis of imputed, rather than actual, income. It is not surprising, then, that obligors with imputed income are predicted to be 17 percentage points (β=-17.04) less likely to comply with their child support obligations than obligors whose orders are based on actual earnings.

Obligor Residence

Clear policies govern the enforcement of child support orders across state lines, but interstate cases are difficult to enforce (OCSE, 2005). Additionally, distance may also have other effects on collections. On the one hand, noncustodial parents who live in closer proximity to their children may be more likely to provide informal support (i.e., free child care, diapers, meals, etc.) and ignore their formal support obligations. On the other hand, parents who live far from their children may feel less connected to them and thus may be less likely to comply with their formal child support orders.

A large majority (79.8%) of noncustodial parents in the study resided in Maryland. One in eight (12.6%) lived outside of the state, and 7.6% had an unknown address. The multivariate results related to obligor residence suggest that living outside of Maryland reduces collections by 6 percentage points (β=-6.478) and having an unknown address reduces collections by more than 10 percentage points (β=-11.876). In other words, compared to a noncustodial parent with a known Maryland address, an obligor who lives in another state will have a three-year collection rate that is about 6 percentage points lower, all else being equal. Obligors whose location is unknown are predicted to have collection rates that are about 12 percentage points lower than those of an obligor living in Maryland.

Case Closures

All sample cases are ones with newly-established support orders, but about one in four (24.8%) closed for at least one month (i.e., had a total monthly obligation of zero dollars) during the three-year follow-up period. Upon further review, most case closures are short-lived and reopened within a month or two. Although the implications of this finding are difficult to interpret with the available data, the model shows that case closures do have a significant and negative impact on collections. Absent further information about why cases closed (and why they reopened), we can only report that cases that experienced a closure within the first three years of order establishment have significantly lower collection rates than those that do not. Case closures reduce the collection rate by 10 percentage points (β=-10.190), holding all else constant.

Location of Order Establishment

Half of all current support orders in this study were established in either Baltimore City (26.0%) or the Baltimore metropolitan area (26.2%), while three in ten (30.9%) were established in the D.C. metropolitan area, and the remainder (16.9%) were established in non-metropolitan areas.[5] While these place variables most likely reflect differences in noncustodial parent and case characteristics rather than differences in administrative processes, they do have a statistically significant effect on collection rates. All else equal, the predicted collection rate is lowest in Baltimore City, slightly higher (by 3.8 percentage points) in the D.C. metropolitan area, moderately higher (by 5.0 percentage points) in the Baltimore metropolitan area, and highest (by 8.9 percentage points) in the non-metropolitan counties. Put another way, if the collection rate for an order established in Baltimore City is 50%, it is predicted that an identical case in a non-metropolitan Maryland county would have a collection rate of 58.9%.

Multiple Support Obligations

This study examines sampled child support orders established during the study period. However, it is possible for an obligor to have another, preexisting child support order as well as the one included in our sample. In fact, slightly more than one-quarter (27.4%) of sampled obligors have a prior and separate child support order. This means that, for these obligors, their total order-to-income ratios are higher than is reflected in this study.[6] Not surprisingly, having a pre-existing child support obligation at the time of the establishment of a new support order has a statistically significant and negative effect on collection rates. Multiple obligations reduce collection rates by eight percentage points (β=-8.127), when controlling for all other factors.

Obligor is the Child's Mother

In public child support cases, the noncustodial parent is nearly always the father (Saunders et al., 2008). However, there are some situations in which the father or another relative has custody of the child, and the mother is the noncustodial parent. Fewer than one in ten (8.2%) noncustodial parents in this sample were the mothers of the child(ren) on the case. Based on this analysis, female noncustodial parents have lower compliance, by about seven percentage points (β=7.009), compared to male noncustodial parents, all else is equal.

[5] Baltimore metropolitan counties are Anne Arundel, Baltimore, Carroll, Harford, Howard, Queen Anne's, and Cecil. D.C. metropolitan counties in Maryland are Calvert, Charles, Frederick, Montgomery, and Prince George's. Non-metropolitan Maryland counties are Allegany, Caroline, Dorchester, Garrett, Kent, Somerset, St. Mary's, Talbot, Washington, Wicomico, and Worcester.

[6] Since the data for this analysis is based on a sample of child support orders collected from local departments, we do not have information related to the obligation amount of other orders established before this order and the income that was used to determine the obligation.

CONCLUSIONS

The results of our research have some important implications for families, taxpayers, and IV-D agencies. Each group is invested in identifying child support amounts that are both adequate to provide for the needs of children and reasonable for noncustodial parents. The adequacy criterion is important for custodial parents who need help providing for the financial needs of their children and for taxpayers and states looking to save money on welfare costs. The reasonableness criterion, on the other hand, is important for noncustodial parents threatened with debt and possible criminal charges and to child support agencies striving to reduce enforcement costs. This study informs the discussion by supporting and expanding on existing research and illuminating the empirical complexity of identifying a child support order as *reasonable*.

Most basically, the study findings confirm that an obligor's order-to-income ratio—the child support order amount as a percentage of obligor income—and the collection rate are related and statistically significant. Importantly, the magnitude of the relationship between order-to-income ratios and collections is relatively small, though not insubstantial, so adjusting the order-to-income ratio is not likely to generate large increases in the collection rate overall.

We also find that the impact of the order-to-income ratio on the collection rate is stronger for those with a higher order-to-income ratio, indicating a possible threshold beyond which orders are less likely to result in collections. That is, those with an order-to-income ratio above 30 percent have lower collection rates than those with a ratio below 30 percent of their income. Determining what threshold beyond which collections become more difficult, and ultimately more expensive, to enforce could be one way to define whether or not a child support order is *unreasonable*.

Nonetheless, other studies have pointed to a threshold anywhere between 20% and 35%, so it may not be wise to simply assume all orders should be set at a ratio of 30%. This is especially true when considering the varying circumstances of noncustodial parents and custodial families, including preexisting child support orders, extraordinary medical expenses of the child, as well as unemployment or under-employment of the obligor. Our findings do suggest, however, that there is a point, regardless of these circumstances, where obligors will be less likely to pay their obligations.

While the main goal of this report is to determine the relationship between order-to-income ratio and collections, we also found that other factors affect collections. Two variables in particular have a substantial and statistically significant impact on child support collections: automatic wage withholding and the imputation of obligor income.

Establishing automatic wage withholding to collect child support payments has the largest positive effect on collections, according to our model. However, the practical significance of this finding is unclear. Automatic wage withholding is most commonly used for obligors whose location is known and have steady jobs. These obligors may already be more likely to pay regardless of the order amount. Obligors without automatic wage withholding are likely to be self-employed, change jobs frequently, or be unemployed. Additional data, specifically information on changes in the obligor's earnings and employment status over time, would be needed to more fully understand the causal relationship of automatic wage withholding to

collections, if one exists. Even so, continued efforts to establish an automatic wage withholding should continue as most child support payments are collected through this method.

Additionally, the imputation of obligor income has the largest negative effect on collections. Income is imputed when there is no documented income, so as to avoid violating one of the underlying guiding principles of child support: that in virtually no situation should a noncustodial parent be given a zero dollar obligation (Williams, 1987). Common practice in Maryland is for an unemployed or under-employed obligor to have wages imputed to him or her at a full-time minimum wage. This practice can result in child support order amounts that are unrelated to an obligor's ability to pay. It should come as no surprise, then, that support orders based on imputed income are associated with fewer payments, lower compliance rates, and arrears accumulation (Passarella & Born, 2014; Legler, 2003; OCSE, 2006; Roberts, 2001). For obligors who are earning less than the full-time minimum wage, support orders will likely represent higher order-to-income ratios than those reflected in our findings.

Our findings reaffirm that policy and research attention to issues of *reasonableness* in setting support order amounts is warranted and should continue. Furthermore, the federal Office of Child Support Enforcement has also recognized the need to set child support orders based on an obligor's ability to pay. In fact, they are currently proposing rules that would encourage states to use an obligor's actual earnings and to consider the subsistence needs of the obligor when setting order amounts (Federal Register, 2014). The potentially difficult policy choices to consider with issues of reasonableness are being addressed at the national level and will ultimately be in the best interests of our state's children, their noncustodial parents, and Maryland's public child support program.

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APPENDIX A. OLS REGRESSION: EFFECT OF ORDER-TO-INCOME RATIO ON THE THREE-YEAR COLLECTION RATE

	β		SE
(Constant)	15.654	***	3.524
Burden Level (Top-coded, x100)	-0.427	***	0.063
Place & Year of Order			
Baltimore Metro Area (vs. Baltimore City)	5.025	***	1.298
DC Metro Area (vs. Baltimore City)	3.813	**	1.292
Non-Metro Area (vs. Baltimore City)	8.916	***	1.439
2003 (vs. 2002)	0.187		1.370
2004 (vs. 2002)	1.802		1.388
2005 (vs. 2002)	-0.508		1.372
2006 (vs. 2002)	-1.765		1.425
Baseline Characteristics			
Previously Married	0.498		1.239
Obligor is Mother	-7.009	***	1.636
Obligor's Age	0.491	***	0.060
Total Family Adjusted Income (Monthly, in $100s)	0.318	***	0.029
Obligor's Percent of Family Income (x100)	0.091	***	0.021
Obligor Imputed Income	-17.040	***	1.351
Obligor Has Multiple Obligations	-8.127	***	1.088
Obligor's Pre-Existing Arrears (in $100s)	-0.055	***	0.007
Guidelines Applied Flexibly (vs. Rigidly)	3.067	**	1.055
Follow-Up Characteristics (3-Yr Follow-Up)			
Out of State (vs. In Maryland)	-6.478	***	1.341
Address Unknown (vs. In Maryland)	-11.876	***	1.679
Domestic Violence Indicated (As of April 2011)	-1.849		1.397
Case Closed At Least One Month	-10.190	***	1.053
Modified Down (vs. No Modifications)	-0.149		1.732
Modified Up (vs. No Modifications)	3.626	*	1.614
Automatic Withholding (At Least One Month, vs. None)	27.086	***	1.227
Test Statistics			
R	0.636		
R^2	0.405		
Adjusted R^2	0.401		
Std. Error of the Estimate	26.272		
F	103.762***		

Note: p<0.10, *p<0.05, **p<0.01, ***p<0.001

APPENDIX B. OLS REGRESSION: EFFECT OF ORDER-TO-INCOME RATIO ON THE THREE-YEAR COLLECTION RATE (8 CATEGORIES)

	β		SE
Order-to-Income Ratio (Reference: Less than 10 Percent of Obligor Income)			
10 to 15 Percent of Income (vs. <10%)	-7.165	**	2.573
15 to 20 Percent of Income (vs. <10%)	-8.323	**	2.591
20 to 25 Percent of Income (vs. <10%)	-11.241	***	2.659
25 to 30 Percent of Income (vs. <10%)	-10.799	***	2.857
30 to 35 Percent of Income (vs. <10%)	-17.459	***	3.102
35 to 40 Percent of Income (vs. <10%)	-22.546	***	3.730
40 Percent or Higher (vs. <10%)	-14.724	**	4.306
Place & Year of Order			
Baltimore Metro Area (vs. Baltimore City)	4.795	***	1.300
DC Metro Area (vs. Baltimore City)	3.494	**	1.294
Non-Metro Area (vs. Baltimore City)	8.441	***	1.443
2003 (vs. 2002)	0.201		1.370
2004 (vs. 2002)	1.820	*	1.387
2005 (vs. 2002)	-0.623		1.371
2006 (vs. 2002)	-1.973		1.424
Baseline Characteristics			
Previously Married	0.572		1.238
Obligor is Mother	-7.031	***	1.642
Obligor's Age	0.486	***	0.060
Total Family Adjusted Income (Monthly, in $100s)	0.322	***	0.029
Obligor's Percent of Family Income (x100)	0.096	***	0.021
Obligor Imputed Income	-16.427	***	1.352
Obligor Has Multiple Obligations	-8.061	***	1.087
Obligor's Pre-Existing Arrears (in $100s)	-0.055	***	0.007
Guidelines Applied Flexibly (vs. Rigidly)	2.617	*	1.066
Follow-Up Characteristics (3-Yr Follow-Up)			
Out of State (vs. In Maryland)	-6.453	***	1.342
Address Unknown (vs. In Maryland)	-11.612	***	1.677
Domestic Violence Indicated (As of April 2011)	-1.717		1.398
Case Closed At Least One Month	-10.280	***	1.053
Modified Down (vs. No Modifications)	-0.109		1.736
Modified Up (vs. No Modifications)	3.631	*	1.614
Automatic Withholding (At Least One Month, vs. None)	27.491	***	1.229
R	0.639		
R^2	0.408		
Adjusted R^2	0.403		
Std. Error of the Estimate	26.229		
F	83.894***		

Note: p<0.10, *p<0.05, **p<0.01, ***p<0.001

APPENDIX C. CHARACTERISTICS OF SAMPLE CASES

Location of Order Establishment		
Baltimore City	26.0%	(958)
Baltimore Metro Area	26.2%	(967)
D.C. Metro Area	30.9%	(1,140)
Non-metro Area	16.9%	(622)
Order Establishment Year		
2002	19.3%	(713)
2003	21.0%	(773)
2004	20.1%	(741)
2005	21.0%	(775)
2006	18.6%	(685)
Obligor & Obligee Previously Married	18.3%	(675)
Obligor is the Child's Mother	8.2%	(303)
Obligor Age		
Average [Median]	32.5	[31.9]
Total Adjusted Gross Family Income (monthly)		
Average [Median]	$3,387	[$2,947]
Percent of Family Income Earned by Obligor		
Average [Median]	61.6%	[55.3%]
Obligor has Imputed Income	17.0%	(625)
Obligor's Number of Child Support Obligations		
1 Child Support Obligation	72.6%	(2,675)
Multiple Child Support Obligation	27.4%	(1,012)
Amount of Pre-existing Arrears		
Average [Median]	$2,206	[$0]
Use of Guidelines		
Rigid (No Deviations)	76.6%	(2,826)
Flexible (Deviations)	23.4%	(861)
Residence of Obligor (at end of 3-year follow-up)		
In-state (Maryland)	79.8%	(2,943)
Out of State	12.6%	(463)
Address Unknown	7.6%	(281)
Domestic Violence Indicator	11.0%	(404)
Case Closed (at least once during 3-year follow-up)	24.8%	(913)
Order Modification		
No Modification	84.6%	(3,121)
Downward Modification	7.2%	(266)
Upward Modification	8.2%	(301)
Automatic Wage Withholding (at least once during 3-year follow-up)	83.3%	(3,073)

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