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Robert Kelchen

Seton Hall University, robert.kelchen@shu.edu

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The Distributional and Cost Implications of Negative Expected Family Contributions

By Robert Kelchen

Eligibility for many federal, state, and institutional financial aid programs is determined by the expected family contribution (EFC) from the Free Application for Federal Student Aid (FAFSA), which functions as a tool to ration scarce aid dollars. The lowest possible EFC under current rules is zero, but this obscures a wider distribution of family resources that would be partially uncovered if the EFC formula were not truncated at zero and negative values were allowed. In this paper, I estimate negative EFCs using student-level data from nine colleges and universities between the 2007-08 and 2011-12 academic year. I find a large amount of dispersion in the distribution of negative EFCs for dependent students and that between 20% and 90% of students (varying by whether the student files the full FAFSA or qualifies for a Simplified FAFSA or an automatic zero EFC) would qualify for a larger Pell Grant award if negative EFCs were allowed. Additional costs of funding a negative EFC could range from \$1.6 billion to \$7.2 billion per year, depending on assumptions regarding generosity.

Keywords: EFC, FAFSA, financial aid

The rising price of attending college and the corresponding increases in student loan debt have captured the attention of the higher education community, policymakers, and the public. Although real institutional, state, and federal grant aid expenditures have all increased over the last several decades (Baum, Ma, Pender, & Bell, 2015), these grants have been unable to keep up with rapid increases in the sticker price of college (Ma, Baum, Pender, & Bell, 2015). As a result, the purchasing power of the maximum Federal Pell Grant dropped by two thirds (Alsalam, 2013) and now covers less than one third of the tuition, fees, and room and board charged to students at public four-year colleges (Goldrick-Rab & Kendall, 2014). This contributes to the average debt of bachelor's degree recipients with student loans reaching \$29,400 in 2012 (author's calculations using the National Postsecondary Student Aid Study) and is likely a contributing factor behind the persistent gaps in college enrollment and completion rates by family income (Bailey & Dynarski, 2011; Kena et al., 2016).

The federal government developed the first formula to allocate need-based financial aid dollars to students in 1972, with the creation of the expected family contribution (EFC) to determine financial need for the new Basic Educational Opportunity Grant (now known as the Pell Grant). Wolanin and Gladieux (1975, p. 303) noted the difficulty of this endeavor, which still holds true today: "The definition and calculation of 'expected family contribution' is a problem of almost staggering complexity. It is roughly comparable to the determination of federal tax liability." The Free Application for Federal Student Aid (FAFSA), which took its current name and general structure in 1993, is now used to determine the EFC and thus eligibility for federal grant aid, work-study funds, and subsidized loans to students from modest

Robert Kelchen is an assistant professor of higher education in the Department of Education Leadership, Management and Policy at Seton Hall University.

financial backgrounds (Gladieux, 1995). The EFC is generated by taking student and parent (if a student is dependent) or spouse (if independent) income and assets into account and does not necessarily reflect ability to pay. However, it can be a useful proxy for family resources and is thus used by the federal government, states, and colleges as a tool to allocate scarce financial aid dollars.

Students whose EFC is below a certain amount (\$5,235 for the 2016-17 award year) can qualify for a Federal Pell Grant (Federal Student Aid, 2016a), which is the typical proxy used for low-income status. Students with the greatest financial need receive an EFC of zero, qualifying them for the maximum Pell Grant award of \$5,815. In the 2013-14 award year, nearly six million students out of approximately 18 million FAFSA undergraduate filers received a zero EFC (U.S. Department of Education, 2015). Those who receive a zero EFC represent a large and heterogeneous group of students with differing levels of financial need. Kelchen (2015) documented the growth in zero EFC students over the past two decades using data from the National Postsecondary Student Aid Study, showing that students designated as independent from their parents for financial aid purposes and students attending community colleges or for-profit colleges were more likely to have a zero EFC than dependent students at four-year public or private nonprofit institutions.

Part of the heterogeneity is due to the federal methodology used to calculate the EFC, which artificially truncates the distribution of many financial values on the FAFSA. For example, in the 2016-17 award year a four-person household with one child in college had their first \$27,440 in income exempt from the needs analysis through the income protection allowance (Federal Student Aid, 2016b). If that family has few assets beyond a home and has less than \$27,440 in income, the parent contribution could be negative—but it is truncated to zero in the EFC formula. This puts families with no income and families with incomes of \$25,000 per year in the same zero EFC category, even when their true ability to pay can differ substantially.

As a result, some researchers and advocates have called for the creation of a negative EFC to better identify students with the greatest financial need and to target additional financial aid to them. Mortenson (1991) called for the creation of a negative EFC more than 20 years ago, noting that students from very low-income families often have to help support their families while attending college (e.g., Kinsley, 2014). More recently, the Center for Law and Social Policy (2013), Goldrick-Rab (2014), Kornfeld & Kantrowitz (2007), and McSwain (2008) have all supported allowing for calculating a negative EFC of up to -\$750 to direct up to \$750 in additional funds to the neediest students. Senator Edward Kennedy introduced the Strengthening Student Aid for All Act (2008) to incorporate a \$750 negative EFC into the federal needs analysis, but it never advanced out of committee. The purpose of my study is to examine what a potential change to a \$750 negative EFC would mean for the distribution of aid to students as well as the total price tag to taxpayers.

Research Questions

Despite the interest in calculating negative EFCs, no empirical research has examined the distributional implications of potential negative-EFC structures or the potential cost implications of a switch to negative EFCs. In this study, I examine the potential implications of allowing for negative EFCs, focusing on an EFC of -\$750 as has been proposed in the past. I used student-level FAFSA data elements on over 150,000 students from nine colleges and universities to explore the following research questions:

1. How many students could potentially receive a negative EFC? What would be the typical negative EFC values under different model specifications?
2. What types of students (by FAFSA filing status and dependency status) would be most likely to benefit?
3. What are the potential costs of different negative EFC policies?

About the EFC Formula

Students are divided into three categories for the purposes of calculating EFCs, each with a separate EFC formula that counts income, allowances, and assets differently. Undergraduate students younger than age 24 are classified as dependent (for financial aid purposes) unless they are married, are a veteran, have dependents of their own, or are legally separated from their parents.¹ All other students are classified as independent, with students being processed under separate EFC formulas based on whether the student has any dependents in his or her family.

For 2016-17, dependent students who filed the FAFSA using their own and their parent(s)' income information, and independent students with their own dependents, receive an automatic zero EFC if two criteria are met. First, a household income (i.e., income of the parent(s) if dependent or student/spouse if independent) of \$25,000 or less in the 2016-17 academic year. Second, meeting additional criteria regarding receipt of a means-tested benefit, or being eligible to file the 1040EZ or 1040A tax forms instead of the full 1040 form (Federal Student Aid, 2016b). These students do not have to provide any additional information on the FAFSA to be eligible for the maximum amount of federal financial aid, which greatly simplifies the FAFSA completion process and the EFC calculation. (Independent students without dependents are not eligible to receive an automatic zero EFC.)

Students from low- to middle-income families can be eligible for a simplified EFC calculation, which bypasses the student and parent (for dependent students only) asset components of the FAFSA, if their household income is below \$50,000 and they either receive means-tested benefits or are eligible to file a 1040A or 1040EZ. Students who do not qualify for the automatic zero EFC or the simplified FAFSA must complete the full FAFSA and provide household asset information. The number of ways students file the FAFSA and the resulting data collected on their financial circumstances complicates any potential negative EFC calculations. The federal methodology for calculating EFCs currently truncates negative responses to zero for three fields in the parent and student EFC calculations: adjusted gross income, investment net worth, and business/farm net worth. While income information is available for all students and parents regardless of FAFSA filing status, the net worth measures are only available if a student filed the full FAFSA. In the Appendix, I further detail the ways a student could potentially receive a negative EFC based on these metrics and other family and financial characteristics that influence the federal needs analysis.

Data, Sample, and Methods

Data

My primary data source for this study was student-level financial aid data from the 2007-08 through 2011-12 award years provided to the National Association of Student Financial Aid Administrators (NASFAA) by nine of their institutional members. These institutions included two public community colleges, five public doctoral-level universities, and two private four-year colleges. The demographic characteristics and graduation rates of these institutions can be found in Table 1, along with a comparison, using IPEDS data, to other institutions in those sectors. Although I chose the participating institutions due to data availability, they appear to be reasonably representative of their broader sectors.²

¹ More students were classified as dependent for financial aid purposes before the current definition was adopted in 1992 (Rhind, 1992). The current rules mean that many students classified as dependent for financial aid purposes file federal tax returns independently from their parents, which causes both confusion and consternation.

² Based on sample sizes compared to the percentage of students who are Pell-eligible, my dataset likely does not include all FAFSA filers from each of the colleges across the five years. I am unable to test for how representative these students are of all FAFSA filers at these institutions or to estimate the FAFSA filing rate at each college.

Table 1

Summary Characteristics of Institutions in the Student-level Dataset

Name	Number of undergraduates	Graduation rate (%)	Male (%)	Full-time (%)	Black (%)	Hispanic (%)	White (%)	Pell (%)
Two-year publics								
College A	4,200	41	52	23	11	8	71	30
College B	16,700	14	39	36	15	3	61	18
Summary	20,900	19	41	33	14	4	63	20
Sector total	7,160,700	22	43	41	14	15	54	25
Four-year publics								
College C	31,700	48	44	61	12	64	14	35
College D	36,300	74	48	92	8	3	75	19
College E	18,100	61	53	84	2	5	71	22
College F	23,600	76	57	98	4	3	74	10
College G	20,800	33	42	64	32	3	48	47
Summary	130,500	60	48	80	11	18	55	26
Sector total	6,285,000	54	46	78	12	11	62	26
Four-year privates								
College H	2,800	72	37	84	4	4	80	26
College I	3,300	66	38	95	3	3	69	19
Summary	6,100	69	38	90	3	4	74	22
Sector total	2,559,000	64	43	83	12	7	62	24

Source: Integrated Postsecondary Education Data System (IPEDS).

Note:

- (1) The “summary” and “sector total” rows are weighted by the number of students attending each college.
- (2) The percent Pell figure is for 2008-09; all others are for 2009-10.
- (3) Individual colleges’ names are not presented in this paper.

Sample

I began with 300,651 observations (214,806 dependent, 48,747 independent without dependents, and 37,098 independent with dependents) of 153,793 students who were enrolled and filed the FAFSA at least once between the 2007-08 and 2011-12 award years.³ To guarantee an accurate negative EFC calculation,⁴ I then restricted the sample to students who had enough FAFSA elements present to calculate an EFC and to those for whom I was able to calculate an EFC within \$50 of the actual EFC calculated by the U.S. Department of Education. These restrictions eliminated 18,721 observations (5.5% of dependent students, 8.3% of independent students without dependents, and 7.7% of independent students with dependents). My analytic sample thus included 281,930 observations across 152,880 students, of whom 68% were initially

³ This excludes approximately 2% of observations that had an EFC changed through a professional judgment, which is used to reflect extenuating financial circumstances.

⁴ For more details on how EFCs were calculated and verified, see Kelchen & Jones (2015).

classified as dependent on their parent(s) for financial aid purposes, 18% were classified as independent without any dependents of their own, and 13% were classified as independent students with their own dependents.⁵

In addition to dividing students by dependency status, I divided them by the type of FAFSA filed. During this period, dependent students and independent students without dependents could qualify for an automatic zero EFC if their adjusted gross income was below \$20,000 in 2007-08 and 2008-09, below \$30,000 in 2009-10 and 2010-11, and below \$31,000 in 2011-12 and additional criteria regarding means-tested benefit receipt or tax filing status were met. Simplified FAFSA filing was available to households with income below \$50,000 in a given year who also met either the means-tested benefit or tax filing criteria. Summary statistics of the student-level sample by dependency status, estimated FAFSA filing status, and financial aid award during the first year observed appear in Table 2.⁶

In my sample of nine institutions, approximately 15% of the 104,044 dependent students qualified for an automatic zero EFC. Among dependent students in the sample, automatic zero EFC recipients were 59% female, 43% of students were White, and 55% were first-generation students. Average parent and student income were just \$14,976 and \$4,086, respectively, reflecting the tremendous amount of financial need present in the families of automatic zero EFC students. Among the 7% of dependent students filing the simplified FAFSA, the average parental income was \$39,275 per year, about 85% qualified for Pell Grants, and 14% received a zero EFC. Finally, the 78% of dependent students who filed the full FAFSA were far more likely to be White (78%) and less likely to be first-generation students (25%) or Pell-eligible (22%) compared to students with an automatic zero EFC or filing a simplified FAFSA. The average parental income of full FAFSA filers was \$102,185, and the average EFC was \$18,569.

About 76% of the 28,170 students who were classified as independents with no dependents of their own filed a simplified FAFSA, as these students are not eligible to receive an automatic zero EFC. This group is 63% White, 50% female, and 45% first-generation, and their average household income was \$11,629. Just over 81% of them qualified for a Pell Grant, and 52% received a zero EFC. The rest of the independent students completed the full FAFSA and had somewhat stronger financial situations than those who completed the simplified FAFSA. But even among this group, average household income was \$31,006, 49% were Pell-eligible, and 25% had an EFC of zero.

Finally, the group of 20,584 students classified as independent with dependents of their own primarily consisted of women from lower-income families. More than 70% of students receiving an automatic zero EFC or filing simplified or full FAFSAs were female, and Black students made up at least 30% of each group. Over 54% of students with dependents received an automatic zero EFC, having an average family income of just \$12,393 per year. Nearly all (97%) of the students filing a simplified FAFSA and 63% of students filing the full FAFSA qualified for a Pell Grant, and about 30% in both groups received a zero EFC. Unlike dependent students filing a full FAFSA with six-figure family incomes, the average income of an independent student filing the full FAFSA was \$55,683.

⁵ Just over 1% of students were observed in multiple dependency statuses during this period. The summary statistics presented in this paper are for the initial dependency status, while results are presented based on the student's dependency status during the given academic year.

⁶ There were no variables that directly indicated a student's FAFSA filing status within the student-level dataset, but data on each of the individual components necessary to qualify for an automatic zero EFC or simplified FAFSA were present in the dataset. The estimated filing statuses match up with the amount of data provided; for example, asset information was rarely present for students who qualified to file a simplified version of the FAFSA without assets.

Table 2

Summary Statistics of the Student-level Sample

Characteristic	Dependent			Independent, no dependents		Independent, with dependents		
	Auto 0 EFC	Simple FAFSA	Full FAFSA	Simple FAFSA	Full FAFSA	Auto 0 EFC	Simple FAFSA	Full FAFSA
Gender (% female)	59.4	57.1	51.2	50.2	56.7	78.9	75.3	72.2
Race/ethnicity (%)								
White	42.5	51.5	77.7	62.9	67.9	45.9	50.5	56.7
Black	37.2	26.9	8.0	24.7	20.8	43.9	38.1	32.1
Hispanic	6.6	8.2	3.9	4.2	4.2	4.9	6.0	5.5
Asian	10.5	10.4	7.6	5.5	4.7	2.8	2.5	3.2
Parent(s) attended college (%)	45.1	49.8	75.1	54.7	54.7	46.8	45.3	45.2
Parent income (\$)	14,976	39,275	102,185	--	--	--	--	--
Student/spouse income (\$)	4,086	4,047	4,183	11,629	31,006	12,393	36,477	55,683
EFC (\$)	0	2,421	18,569	2,274	8,252	0	1,263	5,682
Zero EFC (%)	100.0	13.8	2.2	52.4	25.2	100.0	33.4	26.7
Pell-eligible (%)	100.0	85.4	21.7	81.2	48.9	100.0	97.0	63.2
First year in data (%)								
2007-08	32.7	44.6	46.0	29.3	32.1	24.3	34.8	31.1
2008-09	14.8	17.5	14.4	14.9	16.0	13.4	16.5	15.4
2009-10	17.9	13.3	13.7	17.5	17.0	18.9	21.3	19.8
2010-11	17.2	13.1	13.2	19.3	17.6	20.7	14.9	18.3
2011-12	17.4	11.5	12.8	19.0	17.3	22.7	12.5	15.4
Sample size	15,498	7,585	80,961	21,411	6,759	11,157	3,507	5,920

Note:

- (1) All data are from the first year a student has an EFC (between 2007-08 and 2011-12).
- (2) “Auto 0 EFC” refers to students with an automatic zero EFC, “Simple FAFSA” refers to students filing a simplified FAFSA, and “full FAFSA” refers to students who completed all FAFSA questions.
- (3) Students who are classified as independent students without dependents are not eligible for an automatic zero EFC.

Methods

I began by calculating EFCs for all students based on their dependency status and estimated FAFSA filing status (automatic zero EFC, simplified FAFSA, or full FAFSA) using the EFC formula guides available from the U.S. Department of Education for each year between the 2007-08 and 2011-12 academic years. As indicated above, any student whose calculated EFC was more than \$50 different from their actual EFC was dropped from the sample. The calculated EFC is then considered the student’s EFC under current rules to prevent any small changes due to differences between actual and calculated EFCs.

A challenge in calculating negative EFCs is that not all possible FAFSA data elements are present for students who did not have to complete the full FAFSA. As a result, I had to make assumptions about the values of missing elements based on data from the rest of the sample with available data. Household size

(missing for 1.1% of the sample) and the number of family members in college (missing for 0.1% of the sample) are needed to calculate the income protection allowance for dependent students and independent students with dependents, but are not required from students with an automatic zero EFC. I used the most common values for these measures among students with data (three people in the household and one in college) for both dependency statuses, as these were also the most common values within different race/ethnicity, gender and parental education subgroups.

My first specification for calculating negative EFCs was to allow all FAFSA income and asset elements to become negative, with the exception of tax allowances, where allowing negative values would result in a larger EFC. Parent/student adjusted gross income, parent/student investment net worth, and parent/student business and farm net worth are all allowed to be negative, as detailed in the Appendix. Students who have positive income and asset values can get negative EFCs if their available income is negative after taking income, employment, and/or asset protection allowances into account. Negative available income values were not trimmed back to zero.

If asset contributions are allowed to become negative, then students who complete the full FAFSA could have negative contributions from their family's assets (if the asset protection allowance is larger than their net assets), while students who complete the simplified FAFSA or qualify for an automatic zero EFC could have an asset contribution of zero. To allow all students to fully benefit from allowing asset contributions to become negative, I assigned net assets of zero to students with a simplified FAFSA or automatic zero EFC while making them eligible for the asset protection allowance. The exact value of the asset allowance varies based on parent (if dependent) or student (if independent) age and marital status. While student age and marital status were always available in the data, parent age was missing in 17% of observations. I followed the U.S. Department of Education's EFC formula guidelines for how to treat missing ages, substituting age 45 for any missing values. This could result in some inaccuracies in calculating EFCs compared to when ages are available, but the removal of cases in which I was unable to closely match federal EFCs and the fairly small contribution of asset protections toward EFCs reduces the magnitude of this data limitation.⁷

The second specification allowed parent/student adjusted gross income and income-related allowances, such as the income protection and employment protection allowances, to become negative, but did not allow the asset contribution to be negative. All students with a simplified FAFSA or an automatic zero EFC under current rules were automatically assigned an asset contribution of zero, while negative asset contributions for students who completed the full FAFSA were trimmed back to zero.

To estimate costs of negative EFCs to the Pell Grant program, I began by limiting negative EFCs to -\$750, which would allow for a maximum Pell Grant of \$750 larger than under current program rules.⁸ This matches the majority of policy proposals that have been made to allow negative EFCs by allowing -\$750 of adjusted available income to be considered in the EFC calculation (Center for Law and Social Policy, 2013; Goldrick-Rab, 2014; Kornfeld & Kantrowitz, 2007; McSwain, 2008). This maximum Pell Grant of \$6,520 in 2015-16 would have covered a majority of the tuition at the typical public four-year college (Baum et al., 2015). But this is still less than half of the total cost of attendance for students attending public colleges and universities, as room and board costs, books and supplies, and other living expenses are far larger than tuition (Kelchen, Goldrick-Rab, & Hosch, forthcoming).

⁷ For example, in the 2011-12 academic year, married parents with the oldest parent being age 45 received an asset protection allowance of \$42,900 compared to \$64,000 for the oldest parent being age 60. After taking the 12% asset contribution rate and 22% contribution rate from adjusted available income into account, the difference in EFCs for a low-income family would be approximately \$557. In the 2016-17 EFC formula (with much lower asset allowances), the difference would be only \$219.

⁸ For the sake of simplicity, I do not consider implications for the campus-based financial aid programs or federal student loans, although increasing Pell awards could have some small effects on other programs.

I used the percentage increases in Pell awards under both of my scenarios (one allowing both negative income and assets and the other only allowing negative income) to estimate the percentage change in Pell expenditures. However, as Pell expenditure data at a national level were not publicly available by both dependency status and FAFSA filing type, I had to make a series of assumptions. I used data from the U.S. Department of Education (2015) on the number of Pell recipients by dependency status and FAFSA type, in conjunction with data on the average Pell award by family income and dependency status.

In order to have the number of Pell recipients by filing status closely match the actual data, I assumed that dependent students and independent students with dependents received an automatic zero EFC if their household income was below \$20,000 for the 2013-14 award year, filed a simplified FAFSA if income was between \$20,001 and \$30,000, or filed a full FAFSA for higher income levels. For independent students with no dependents, I assumed that those making less than \$20,000 per year filed a simplified FAFSA and all others filed a full FAFSA. These categories generally match the most common filing status by family income in my data for the 2007-08 and 2008-09 award years, in which the income cutoff for the automatic zero EFC (\$20,000) was the most similar to the 2013-14 cutoff of \$24,000. The only exception is among independent students with their own dependents, for which the simplified FAFSA is the most common filing status for family incomes between \$20,000 and \$40,000.⁹

I was able to estimate the number of Pell recipients in most categories well, although the estimate for independent students without dependents filing the full FAFSA was less accurate due to income only being reported in \$10,000 bands above \$20,000 per year. I then multiplied the number of students in each income band by dependency status by the average grant in each income band (available in U.S. Department of Education data) to estimate current Pell expenditures by FAFSA filing status, which I then multiplied by my estimated cost increases from my data to finally estimate program cost increases.

Limitations

In addition to the limitations described above regarding how I handled missing FAFSA data elements, the greatest limitation to this study is that only nine institutions are represented in the sample, including no for-profit colleges and only one minority-serving institution. Although the colleges and universities are broadly representative of their sectors of higher education (Table 1), they were not intentionally sampled to be a part of the dataset used in this study. Rather, I included institutions in the sample if they were willing to provide student-level data over a period of several years in order to calculate EFCs. It is unclear whether the students attending these institutions differ from those at other colleges on measures other than basic demographic characteristics.

It is difficult to determine whether all students with low or even negative family incomes are truly needy, or whether some have substantial wealth but negative incomes due to business or investment losses. Prior to 1993, home and farm equity were a part of the federal need analysis, but were removed in the 1992 legislation that created the current FAFSA; this made more students with assets eligible to receive federal financial aid (Turner, 1997). Although I could not look at these types of assets, I did examine the assets of the parents of dependent students who had a negative adjusted gross income (AGI) in at least one year (926 students or 0.9% of the dependent students in my sample). About half of these parents had investment or business equity in the same year they had a negative AGI, and about one fourth had at least \$50,000 in equity. This suggests that a few students who appeared needy were not, but this group is relatively small in proportion to all students who could be affected by a negative EFC.

⁹ A summary table of FAFSA filing statuses by dependency status and household income is available upon request from the author.

The dataset in this study only includes students who completed the FAFSA. A body of research has shown that a substantial percentage of students with great financial need do not file the FAFSA (e.g., Kantrowitz, 2015), and that as many as 42% of community college students who would be Pell-eligible if they filed the FAFSA do not do so (McKinney & Novak, 2013). As a result, if students are induced to file the FAFSA based on increased Pell awards resulting from negative EFCs, the demographic mix of FAFSA filers may change in addition to the costs of adopting negative EFCs. Finally, as discussed above, my cost estimates should be viewed with caution due to the difficulty of obtaining data on current Pell expenditures at the level of detail needed for this study.

Results

In this section, I examine the implications of two scenarios that allow for the calculation of negative EFCs on the distribution of expected family contributions across FAFSA filing status and dependency status. I then turn to how that would affect students' Pell Grant awards before constructing estimates of how much negative EFCs would affect Pell expenditures under different circumstances.

Changes to EFCs

Allowing income and/or asset components on the FAFSA to take negative values results in large decreases in EFCs for many students. Table 3 shows summary statistics of the EFC distributions by FAFSA filing status (automatic zero EFC, simplified FAFSA, or full FAFSA) across a five-year period between 2007-08 and 2011-12. For students filing the simplified and full FAFSA, the EFC distributions appear under current rules, when only income components are allowed to become negative ("negative income only"), and when both income and asset components are allowed to become negative ("negative income and assets").

The vast majority of students with an automatic zero EFC would receive a negative EFC regardless of whether assets are also allowed to become negative. The mean EFC for dependent students would be -\$11,746 if negative assets are included and -\$11,729 if they are excluded, compared to EFCs of -\$2,978 and -\$2,703 for independent students with dependents. Nearly 94% of dependent students and 88% of independent students with dependents would receive an EFC of -\$750 with negative assets, with those percentages falling slightly to 93% and 81% if assets were not allowed to become negative. This illustrates two key findings: 1) allowing assets to become negative does little to change EFCs, and 2) negative EFCs are far larger for dependent than for independent students due to the greater number of opportunities for negative values to develop across both parents and students compared to through students alone because of the larger number of data elements on a dependent student's FAFSA.¹⁰ For example, dependent students and their parents can both receive income protection allowances that could lower EFCs, while independent students only get an income protection allowance for themselves that tends to be fairly small due to the age of independent students compared to parents of dependent students (see the Appendix for more details).

Among students filing the simplified FAFSA, allowing EFCs to become negative did little to increase the percentage of students receiving Pell Grants (which was already over 80% across each dependency status). When allowing both income and assets to become negative, slightly more than 40% of both dependent students and independent students without dependents and 20% of independent students with dependents had a negative EFC of at least -\$750. Only allowing income to contribute toward the negative EFC somewhat reduced the percentage of students receiving EFCs of at least -\$750, with the larger decreases present for dependent students.

¹⁰ Graphical depictions of the negative EFC distributions are available upon request from the author.

Table 3
EFC Distribution by Year and FAFSA Filing Status

Characteristic	Automatic zero EFC		Completed simplified FAFSA			Completed full FAFSA		
	Dependent	Indep, w/ dependents	Dependent	Indep, no dependents	Indep, w/ dependents	Dependent	Indep, no dependents	Indep, w/ dependents
EFC under current rules								
Mean EFC (\$)	0	0	2,300	2,135	1,085	18,116	8,383	5,449
EFC of zero (%)	100.0	100.0	15.6	52.6	33.5	2.2	24.8	26.0
EFC Pell-eligible (%)	100.0	100.0	86.6	80.6	96.9	20.9	47.9	62.4
EFC with negative income and assets								
Mean EFC (\$)	-11,746	-2,978	-607	729	529	15,106	7,153	4,562
EFC at/below -\$750 (%)	93.8	88.2	42.9	40.8	20.7	10.2	16.8	21.0
EFC below zero (%)	95.2	96.0	53.1	47.9	37.4	12.1	21.9	27.3
EFC Pell-eligible (%)	100.0	100.0	91.8	82.0	97.6	28.1	50.2	64.3
EFC with negative income only								
Mean EFC (\$)	-11,279	-2,703	125	1,298	701	15,807	8,032	4,887
EFC at/below -\$750 (%)	92.7	81.3	33.6	35.0	17.9	9.2	12.7	20.0
EFC below zero (%)	94.2	89.1	37.9	42.8	33.4	10.7	17.8	26.0
EFC Pell-eligible (%)	100.0	100.0	88.4	80.6	96.9	24.9	47.9	62.4
Number of observations	29,428	17,534	15,364	33,857	6,213	157,885	10,833	9,930

Note:

- (1) “Negative income and assets” means all EFC components in the student and parent income and asset portions of the FAFSA are allowed to become negative.
- (2) “Negative income only” means all EFC components in the student and parent income portions of the FAFSA are allowed to become negative.
- (3) Independent students without dependents of their own are not eligible to receive an automatic zero EFC.

Turning to students who filed the full FAFSA, the mean EFC across each of the three dependency statuses decreased substantially when allowing income and assets to become negative in the federal needs analysis. However, many of the changes, particularly among dependent students, were driven by students with high EFCs who remained Pell-ineligible. The percentage of Pell-eligible dependent students increased from 21% to 28% when including both negative income and assets and to 25% when only including negative income. About 10% of dependent students, 17% of independent students without dependents, and 21% of independent students with dependents would receive an EFC of at least $-\$750$ if both income and assets could become negative, with slightly lower percentages if only income were allowed to become negative. Most of the students who would receive negative EFCs already had EFCs at or near zero, although slightly more dependent students with positive EFCs under current rules would be able to receive negative EFCs under my calculations.

Changes to Student Pell Grant Awards

Table 4 shows the implications of the two negative EFC estimates on changes to students' Pell Grant awards by dependency status. Nearly all students receiving an automatic zero EFC would see a larger Pell award, with allowing assets to become negative alongside income barely affecting the estimates. If only income were allowed to count as a negative in the EFC calculation, 93% of dependent students and 82% of independent students without dependents would receive a \$750 larger Pell Grant than previously allowed. Slightly more students would see some increase in Pell without getting the full \$750 increase.

The implications of a negative EFC on the Pell Grants of students filing a simplified FAFSA vary significantly by dependency status. Under the more conservative scenario of allowing only income to become negative, 65% of dependent students would see an increase in their Pell award of \$750 or more, and the average increase in Pell would be \$919. This is possible because a student could go from an EFC of \$1,000 to $-\$750$ and thus receive a \$1,750 larger Pell Grant than under current rules. Most of this increase is driven by students who already receive a Pell Grant, as only 2.6% of dependent students would be newly Pell-eligible. Meanwhile, only 36% of independent students without dependents and 19% of independent students with dependents would see an increase in Pell of \$750 or more and less than half of these students would see any increase in Pell awards. Allowing assets to also be counted as negative values increases the average Pell award much more for dependent students than independent students, but more than doubles the percentage of independent students without dependents who would receive a small increase in their Pell award.

Among students filing the full FAFSA, dependent students would see a larger average Pell increase than independent students, which is likely due to dependent students receiving smaller Pell Grants than independent students in my data. However, the percentage of students receiving an increase of \$750 or more to their Pell awards when only income is allowed to become negative is 20% for both dependent students and independent students with their own dependents, compared to 13% of independent students without dependents. More dependent students would be newly Pell-eligible under my scenarios (7% if income and assets were allowed to be negative and 4% under a negative income only calculation) than independent students (2% and 0%, respectively).

Changes to Federal Pell Grant Expenditures

Finally, I estimated the implications of allowing negative EFCs in the Pell Grant program. Due to both increased enrollment as a result of the Great Recession and increased generosity of the Pell program, Pell expenditures rose from \$14.7 billion in the 2007-08 award year to \$35.7 billion in 2010-11 before slowly falling to \$31.5 billion in 2013-14 (U.S. Department of Education, 2015). I used this most recent value as the baseline expenditure level to which I compared my estimates, with the full set of assumptions used in generating the estimates presented in Table 5.

Table 4
Pell Distributions under Negative EFCs by FAFSA Filing Status and Dependency Status

Characteristic	Automatic zero EFC		Completed simplified FAFSA			Completed full FAFSA		
	Dependent	Indep, w/ dependents	Dependent	Indep, no dependents	Indep, w/ dependents	Dependent	Indep, no dependents	Indep, w/ dependents
Pell award under current rules								
Mean Pell (\$)	5,207	5,228	2,974	3,580	4,020	709	1,965	2,479
Pell award with negative income and assets								
Pell increase with -\$750 EFC cap (\$)	709	694	1,313	427	311	438	253	271
Pell increase of \$750 or more (%)	93.9	89.0	77.3	44.6	22.4	24.7	20.9	23.1
Any increase in Pell (%)	95.2	96.0	91.8	52.8	78.9	27.8	26.9	55.5
Newly eligible for Pell (%)	0.0	0.0	6.1	1.5	0.4	7.2	2.3	1.9
Pell award with negative income only								
Pell increase with -\$750 EFC cap (\$)	701	641	919	292	187	299	114	172
Pell increase of \$750 or more (%)	92.8	82.0	64.5	35.5	18.6	19.7	13.0	20.3
Any increase in Pell (%)	94.4	89.1	73.8	42.8	33.5	22.3	17.8	26.0
Newly eligible for Pell (%)	0.0	0.0	2.6	0.0	0.0	4.0	0.0	0.0
Number of observations	29,428	17,534	15,364	33,857	6,213	157,885	10,833	9,930

Note:

- (1) “Negative income and assets” means all EFC components in the student and parent income and asset portions of the FAFSA are allowed to become negative.
- (2) “Negative income only” means all EFC components in the student and parent income portions of the FAFSA are allowed to become negative.
- (3) Independent students without dependents of their own are not eligible to receive an automatic zero EFC.

Table 5

Assumptions Made in Generating Cost Estimates to the Federal Pell Grant Program of Different Negative EFC Scenarios

Parameters

(a) Percent increase in Pell expenditures by dependency status and FAFSA filing type (from Table 4)

Case 1: Both income and assets allowed to become negative.

Filing status	Type of FAFSA		
	Auto zero	Simplified	Full
Dependent	13.6	44.1	61.8
Indep., no dependents	N/A	11.9	12.9
Indep., w/dependents	13.3	7.7	10.9

Case 2: Only income allowed to become negative.

Filing status	Type of FAFSA		
	Auto zero	Simplified	Full
Dependent	13.5	30.9	42.2
Indep., no dependents	N/A	8.2	5.8
Indep., w/dependents	12.3	4.7	6.9

(b) Estimates of Pell recipient and award amounts by dependency status and FAFSA filing type (from 2013-14 Pell Grant end-of-year report and data from the nine colleges in 2007-08 and 2008-09).

Dependents and independents w/dependents: \$0-\$20,000 income were assumed to receive auto zero EFC, \$20,001-\$30,000 were assigned to simplified FAFSA, and \$30,001 and up to full FAFSA. Independents w/no dependents: Incomes under \$30,000 were assigned to simplified FAFSA, over \$30,000 to full FAFSA.

Number of Pell recipients by dependency and FAFSA filing status, 2013-14 (actual)

Filing status	Type of FAFSA			Total
	Auto zero	Simplified	Full	
Dependent	1,497,560	833,529	1,500,303	3,831,392
Indep., no dependents	N/A	1,583,343	319,224	1,902,567
Indep., w/dependents	1,635,639	607,540	685,515	2,928,694

Number of Pell recipients by dependency and FAFSA filing status, 2013-14 (estimated)

Filing status	Type of FAFSA			Total
	Auto zero	Simplified	Full	
Dependent	1,572,314	749,970	1,509,108	3,831,392
Indep., no dependents	N/A	1,737,449	165,118	1,902,567
Indep., w/dependents	1,584,021	524,261	820,412	2,928,694

In Table 6, I present the percentage increase in Pell expenditures by dependency status and FAFSA filing type, using the Pell increases from Table 4 divided by the average Pell award. This highlights that dependent students would receive the largest percent increase in Pell award dollars under either negative EFC scenario, while independent students would see much smaller increases. For example, independent students without dependents who filed a simplified FAFSA would only see a 4.7% increase in Pell award dollars if only income were allowed to become negative and a 7.7% increase if income and assets could both be negative. This compares to 42.2% and 61.8% increases for dependent students filing the full FAFSA. Multiplying these percentage increases by my estimates of 2013-14 national Pell expenditures by dependency status and FAFSA type yields my cost estimates.

Table 6

Cost Estimates to the Federal Pell Grant Program of Different Negative EFC Scenarios

Estimated Pell expenditures by dependency and filing status, 2013-14 (\$1,000s)

Filing status	Type of FAFSA			Total
	Auto zero	Simplified	Full	
Dependent	6,994,000	3,339,000	4,527,000	14,860,000
Indep., no dependents	N/A	6,212,000	236,600	6,448,600
Indep., w/dependents	5,738,000	1,921,000	2,498,000	10,157,000
Total	12,732,000	11,472,000	7,261,600	31,465,600

Case 1: Both income and assets allowed to become negative (\$1,000s).

Filing status	Type of FAFSA			Total	% increase
	Auto zero	Simplified	Full		
Dependent	7,946,323	4,813,145	7,323,652	20,083,120	35.1%
Indep., no dependents	N/A	6,952,928	266,386	7,219,314	12.0%
Indep., w/dependents	6,499,701	2,069,615	2,771,077	11,340,393	11.7%
Total	14,446,024	13,835,688	10,361,114	38,642,826	22.8%
Percent increase	13.5%	20.6%	42.7%	22.8%	

Case 2: Only income allowed to become negative (\$1,000s).

Filing status	Type of FAFSA			Total	% increase
	Auto zero	Simplified	Full		
Dependent	7,935,577	4,370,789	6,436,130	18,742,496	26.1%
Indep., no dependents	N/A	6,718,677	249,692	6,968,369	8.1%
Indep., w/dependents	6,441,531	2,010,360	2,671,318	11,123,209	9.5%
Total	14,377,108	13,099,826	9,357,140	36,834,074	17.1%
Percent increase	12.9%	14.2%	28.9%	17.1%	

Sources: Federal Pell Grant end-of-year reports, author's data from Table 4.

(1) Independent students without dependents of their own are not eligible to receive an automatic zero EFC.

(2) The number of Pell recipients and expenditures by dependency status and FAFSA filing status had to be estimated due to insufficient data being publicly available on Federal Student Aid's website.

Under the less conservative set of estimates that allow both income and assets to become negative in the federal needs analysis, I estimate that overall Pell expenditures would increase from \$31.5 billion per year to \$38.6 billion per year—a 22.8% increase in federal spending. Students receiving an automatic zero EFC would see a 13.5% increase in Pell award dollars, or about \$1.7 billion per year, while students filing the full FAFSA would see a \$3.1 billion increase in award dollars (42.7%). Independent students would get about 12% more in Pell dollars (a total of about \$1.9 billion per year), and dependent students would receive an additional 35.1% (or \$5.2 billion per year). Only allowing income to factor into negative EFC calculations would bring total Pell expenditures up to \$36.8 billion, up 17.1% from current rules but \$1.8 billion below the cost of allowing assets to become negative. The cost estimates for automatic zero EFC students would change very slightly compared to when negative asset values were allowed, with much smaller program cost increases for students filing the full FAFSA, as well as for dependent students.

Under an alternative (and more likely) scenario in, which any changes to the EFC formula are devised so they are roughly budget-neutral, dependent students filing the simplified or full FAFSA would gain additional Pell funds while independent students would lose Pell dollars. Even assuming a 10% increase in Pell expenditures (to \$34.6 billion) and scaling the percentage gains from each dependency status/FAFSA filing type cell to fit the budget constraint, nearly all of the gains go to dependent students. In the model with negative income and assets, dependent students would get 99.4% of the additional \$3.1 billion, independent students without dependents get 0.6%, and independent students with dependents would get 0.02% more funds.¹¹ If only income were allowed to be negative, dependent students would get 87.5% of the additional funds while independent students without and with dependents would get 3.2% and 9.4% of the additional dollars, respectively.

Discussion

The current federal methodology for determining EFCs allows for a minimum EFC value of zero. Although EFCs currently function more as a rationing tool for financial aid than a true measure of a family's ability to pay for college, allowing EFCs to become negative would better reflect the relative ranking of families' ability to pay. The artificial truncation of the current distribution lumps together families with substantial financial need, but students with a zero EFC are heterogeneous across many different dimensions (e.g., Kelchen, 2015). Although Congress has recently considered efforts to simplify the FAFSA to a small number of questions, the number of data elements currently available allows for more nuanced rankings of students' financial need.

In this paper, I show that a large percentage of students who currently qualify for Pell Grants would have a negative EFC if income elements on the FAFSA were not truncated at zero and instead could become negative. Allowing asset elements to contribute toward negative EFCs also has an effect on the percentage of students who could receive negative EFCs, but the negative asset contribution is far outweighed by the negative contribution from income components for the vast majority of students. More than 80% of students receiving an automatic zero EFC, 30% of students filing a simplified FAFSA, and 15% of students filing a full FAFSA would see a larger Pell Grant if negative EFCs were allowed.

Across FAFSA filing types, the largest gains in Pell Grant awards under negative EFCs were for dependent students. Pell award increases were three times as large for dependent students as for independent students, suggesting that traditional-age students would benefit the most from a switch to negative EFCs unless the allocation formula was changed differently for different types of students. If negative EFC formula charts are adopted and made available to financial aid administrators, they may want

¹¹ A table showing the gains in this scenario is available upon request from the author.

to consider using negative EFCs to rank students' financial need only within their dependency status and FAFSA filing type. This would prevent, for example, dependent students filing the full FAFSA from receiving a disproportionate amount of institutional grant aid due to their ability to have a larger negative EFC because of the number of data elements that can potentially become negative. But this also raises fundamental concerns about the current federal needs analysis methodology and whether equal EFCs across dependency statuses should be considered equal for the purposes of allocating scarce institutional aid dollars.

Funding even a modest negative EFC would have significant implications for the Pell program's budget (an increase of about 20% over current spending levels), so full adoption of a \$750 EFC for all students is likely infeasible at this time. As a first step, it would be logical to fund negative EFCs only for students who currently have an automatic zero EFC—reflecting an estimate of the greatest amount of financial need. For example, 63% of dependent students and 69% of independent students without dependents who received an automatic zero EFC in 2013-14 had family incomes below \$15,000 per year compared to just 17% of dependent students and 13% of independent students with dependents with a calculated zero EFC (U.S. Department of Education, 2015). If only income were allowed to become negative for automatic zero EFC students, estimated Pell awards would have increased by about \$1.6 billion in 2013-14 to \$33.1 billion, which is less than program expenditures in the early 2010s. Adjusted gross incomes are not perfect measures of a family's ability to pay, but this stark difference in family incomes may suggest targeting resources to automatic zero EFC students. If negative EFCs were adopted, they should also be extended to the neediest independent students without dependents, as they are not currently eligible for an automatic zero EFC.

In the short run, the U.S. Department of Education could take a positive step at no additional cost to the federal government by calculating negative EFCs for all students and notifying students and colleges of those values, but funding the Pell Grant program and other financial aid programs in the same manner as today by using the current EFC for aid allocation purposes. Even in the long run, fully meeting negative EFCs beyond a -\$750 threshold appears quite unlikely. This means that although the federal government will be able to better discern relative need for students with EFCs between zero and -\$750, students with EFCs truncated to -\$750 will still be grouped together. This is an imperfect metric, but it would help the federal government target funds to at least a somewhat smaller number of students with the greatest financial need.

Calculating both full and truncated negative EFCs and disseminating these values to colleges and states would help these other entities distribute their aid in a more informed manner, and colleges could work to do this immediately without the federal government calculating negative EFCs for the Pell program. For example, as funds for the campus-based financial aid programs (i.e., Federal Supplemental Educational Opportunity Grant and Federal Work-Study) have failed to keep up with student enrollment growth and are disproportionately awarded to colleges with smaller percentages of Pell recipients (Kelchen, forthcoming), financial aid administrators at colleges with larger percentages of Pell recipients may want to target these funds to students with the largest negative EFCs instead of spreading the funds around to all zero-EFC students. However, a more precise picture of students' ability to pay may result in some colleges declining to fund or enroll students with the greatest financial need due to legitimate ethical concerns (not wanting students to take on too much debt) or concerns about what properly funding such students might mean for the overall institutional aid budget.

If a large increase in Pell dollars does become a reality, the federal government needs to be mindful that other agents in the college funding picture might reduce their effort in response to additional federal funds. For example, a body of research has found that some colleges, particularly those with higher sticker prices, have been able to capture some of the additional Pell revenue resulting from recent increases to the maximum award (Lau, 2014; Lucca, Nadauld, & Shen, 2015; Turner, 2014). Additionally, Delaney (2014)

found that states cut back their own grant aid programs (but not appropriations) after the federal government gave states economic stimulus funds that required that the state maintain a certain level of appropriations but not grant aid funding. It remains to be seen whether colleges or states would behave in the same way if Pell funds were increased only for students with the greatest financial need. In theory, it is even possible that a large enough Pell award for the neediest students might encourage colleges to enroll more of these students.

As the findings in this paper are based on a sample from nine colleges of students who were enrolled in college at least five years ago, it is important to replicate this research before proposing a complete overhaul of the federal needs analysis. Future researchers should use newer, nationally-representative data to estimate the implications of negative EFCs, and would ideally be able to convince the U.S. Department of Education to use their “experimental sites” authority to pilot a negative EFC program. It is also important to think more about budget-neutral ways to target funds to the neediest students in future work and the implications for middle-income families. Some potential extensions of this work include the implications of reducing eligibility for middle-income families, better coordinating institutional, state, and federal aid programs for the lowest-income students, or reducing allowances against income and assets to further delineate students by ability to pay. Finally, future research should consider how various proposals to simplify the FAFSA would affect the distribution of negative EFCs, particularly if detailed asset questions are no longer included in the federal needs analysis.

Nexus: Connecting Research to Practice

- Negative EFCs should be calculated to help institutions and states better target their scarce financial aid dollars to students with the greatest financial need. If the federal government does not calculate negative EFCs, financial aid professionals should consider calculating them as a way to target funds.
- Since different amounts of income and asset data are available across different dependency statuses and FAFSA filing types, negative EFCs will have different meanings of financial strength across different types of students. Financial aid professionals should use EFCs to rank student need only within a dependency status/FAFSA filing type combination (such as dependent students filing simplified FAFSAs).
- Both the federal government and colleges should focus giving any additional grant aid dollars to students who currently qualify for an automatic zero EFC based on their negative EFC. However, procedures should be put in place to allow the neediest independent students without dependents (who do not currently qualify for an automatic zero EFC) to receive additional aid.

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Appendix: Three Ways to Get a Negative EFC

Due to the complexity of the federal needs analysis formula, a student's EFC can be influenced by a number of financial and family characteristics. Appendix Table A shows the three main ways a student can end up with a negative EFC under the existing formula before that EFC is then trimmed back to zero. This information is based on the 2016-17 Federal Methodology formula.

The first way a student could receive a negative EFC is to have negative values for adjusted gross income, investment net worth, or business/farm net worth. Adjusted gross income is available for all FAFSA filers, while only students filing the full FAFSA would have values for the other two elements.

The second way a student could receive a negative EFC is through a set of allowances designed to protect income and/or assets. Parents of dependent students filing either the simplified or full FAFSA received an income protection allowance of at least \$17,840 in the 2016-17 award year based on household size and the number of family members in college. The formula exempted \$6,400 from dependent students' contribution; either \$9,960 or \$15,960 for independent students without dependents; and at least \$20,900 for independent students with dependents. Independent students and parents of dependent students filing either the simplified or full FAFSA could qualify for an employment expense allowance of up to \$4,000. Finally, independent students and parents of dependent students who filed the full FAFSA received an asset protection allowance of up to \$29,600 depending on their age and marital status.

The third way a student could receive a negative EFC is through the assessment rates for nonprotected income (simplified and full FAFSA) and assets (full FAFSA only). Independent students with dependents were expected to contribute 7% of assets in 2016-17, while parents of dependent students were expected to contribute 12% of assets. Dependent students and independent students without dependents were expected to contribute 20% of their assets in addition to half of their income after taking allowances into account; the income and asset contributions are added together and truncated at zero to get their contribution toward the EFC. Parents and independent students with dependents must contribute a certain percentage of adjusted available income (AAI; the asset contribution, where applicable, plus income less any allowances) to calculate their contributions toward EFC. If the AAI was below -\$3,409, the 2016-17 formula would truncate it at -\$750, which is likely the reason most calls for negative EFCs have focused on -\$750. For AAIs greater than -\$3,409, the marginal contribution rate gradually increased from 22% to 47%. Finally, the student and parent EFCs are then added together for dependent students and all EFCs are divided by the number of family members in college to get the final EFC.

Appendix Table A

EFC Formula Elements that Could Result in Negative EFCs

EFC element	Dependency status(es)	Filing status(es)	Notes
Negative values trimmed to zero			
Adjusted gross income	All	All	
Investment net worth	All	Full FAFSA	
Business/farm net worth	All	Full FAFSA	
Allowances not tied to tax rates			
Parent income protection	Dependent	Simplified, full	\$17,440 to \$30,000+ exempted based on household size and number in college
Student income protection	Dependent	Simplified, full	Fixed \$6,260
Student income protection	Independent, no dependents	Simplified, full	\$9,730/\$15,600 exempted based on marital status, household size, and number in college
Student income protection	Independent w/dependents	Simplified, full	\$24,650 to \$50,000+ exempted based on household size and number in college
Parent employment expense	Dependent	Simplified, full	Up to \$4,000 of income exempted
Student employment expense	Independent	Simplified, full	Up to \$4,000 of income exempted
Parent asset protection	Dependent	Full FAFSA	\$0 to \$52,600 based on age and marital status
Student asset protection	Independent	Full FAFSA	\$0 to \$52,600 based on age and marital status
Asset and available income assessment rates			
Parent asset assessment rate	Dependent	Full FAFSA	Fixed 12% of assets not exempted
Student asset assessment rate	Dependent	Full FAFSA	Fixed 20% of assets--no exemptions
Student asset assessment rate	Independent, no dependents	Full FAFSA	Fixed 7% of assets not exempted
Student asset assessment rate	Independent w/dependents	Full FAFSA	Fixed 20% of assets not exempted
Parent AAI assessment rate	Dependent	Simplified, full	22%-47% of net income and asset contributions
Student AI assessment rate	Dependent, indep. w/o dependents	Simplified, full	Fixed 50% of income less allowances
Student AAI assessment rate	Independent w/dependents	Simplified, full	22%-47% of net income and asset contributions

Note:

AAI is adjusted available income and AI is available income.

Source: EFC Formula Guide, 2014-15 (Federal Student Aid, 2013)

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