

Journal of Student Financial Aid

Volume 18 | Issue 2

Article 3

7-1-1988

Has the Middle Class Been Pressured Most?

Yuko M. Mulugetta

Donald A. Saleh

Follow this and additional works at: <https://ir.library.louisville.edu/jsfa>

Recommended Citation

Mulugetta, Yuko M. and Saleh, Donald A. (1988) "Has the Middle Class Been Pressured Most?," *Journal of Student Financial Aid*: Vol. 18 : Iss. 2 , Article 3.

Available at: <https://ir.library.louisville.edu/jsfa/vol18/iss2/3>

This Issue Article is brought to you for free and open access by ThinkIR: The University of Louisville's Institutional Repository. It has been accepted for inclusion in *Journal of Student Financial Aid* by an authorized administrator of ThinkIR: The University of Louisville's Institutional Repository. For more information, please contact thinkir@louisville.edu.

Has the Middle Class Been Pressured Most?

by
Yuko M. Mulugetta and Donald A. Saleh

The study is a multivariate analysis on parental contributions of dependent financial aid students in 1983 and 1987. A comparison of the findings indicate that parental contributions significantly increased in general and for the \$40-\$50K income group in particular.

Introduction

The growth of college tuition and fees has out-paced consumer prices in the 1980s. From 1980 through 1986, the cost of tuition and fees at private universities rose an average of 11.0% per year, while consumer prices increased 4.9% (Evangelauf, 1987). The Ivy/MIT/Stanford group, in particular, nearly doubled their prices over the last seven years, to an average \$12,385 in annual tuition and fees for 1987-88 (COFHE, 1987).

At the same time, aid to finance higher education has been making rather slow progress. Total financial aid amounted to over \$21 billion in 1985-86, but this reflects a decline of 3% between 1980-81 and 1985-86 after adjusting for inflation (Lanchantin, 1986). Federally-supported programs fell by 10% during this period after inflation adjustment.

The increasing discrepancy between the rapid growth in tuition and slow progress in public assistance has increased pressure on family contributions and individual donations. Voluntary private support for higher education, including individual donations, rose by 17% and reached an estimated \$7.4 billion in academic year 1985-86 (Destruisseaux, 1987). However, changes in family or parental contributions have not been well researched. This study (1) describes how much parental contributions have changed in the 1980s at a large private university and (2) examines which social strata have experienced the greatest change in contribution, using a multivariate data analysis technique.

Data Sources and Methodology

The study analyzed financial aid recipients at Cornell University in academic years 1984-85 and 1987-88. The study was limited to those students who were determined to be financially dependent on their parents. Institutionally calculated parental contributions and parental income were converted into constant dollars, using a consumer price index of the current year as a base, so that the two-year figures were comparable after controlling for the impact of inflation (Lanchantin, 1986).

Before going into a detailed discussion of the results, it may be useful to describe briefly how parental contributions are calculated. The parental contribution (PC) to a student's education is computed based on three major elements; income, total assets and the number of children in college per household.

Total family income is the sum of taxable and nontaxable income, and the total income less family expenses/allowances results in available income. Available income is the first major component of the PC calculation.

Dr. Yuko M. Mulugetta is Research Associate of Financial Aid at Cornell University, Ithaca, New York and Donald A. Saleh is the Director of Financial Aid and Student Employment at the same institution.

The second is assets. Total assets include cash, savings and checking accounts, home equity, equity in investments and other real estate, and business or farm equity. The income supplement is a percentage of total assets less an asset protection allowance. The available income and income supplement are added together to derive the parents' adjusted available income. Total parental contribution to education is a percentage of adjusted available income.

Finally, the contribution for each student is computed by dividing the total contribution by the number of children in college per household.

Keeping this formula in mind, let us examine the results presented in Table 1. Table 1 describes the mean difference in parental contributions per child between the two years. Parental contributions increased from \$3,719 in 1984-85 to \$4,470 in 1987-88 on average. Broken down by income, all groups experienced some increase in contributions. The Analysis of Variance tests (ANOVA) indicate that the mean difference between the two years is statistically significant for all the groups, except for the least wealthy income category (less than \$10,000) and the highest income group (more than \$80,000). The middle income families, particularly the families in the range of \$50K-\$60K income, underwent the most significant increases in PC. They had to add nearly \$900 to their contributions this year, compared to what they contributed three years ago.

At least two possible explanations could be provided as to why we have observed the biggest increase in PC among middle income families. First, the number of children in college per household in the middle class might have significantly decreased in 1987-88, compared to 1984-85, so that the PC for each student significantly increased this year. Second, total assets in the middle class might have increased much faster than others over the past three years, and thus, the parental contributions from the assets among middle income families in 1987 became much higher than that in 1984.

Since other analysis, not presented here, showed that there is no significant mean increase in total income in each income category between the two years, we discarded the possible explanation that the rapid increase in PC in the middle class may be attributed to the faster growth in income of this class than others.

Results

Table 2 compares the mean number of children in college per household between 1984-85 and 1987-88. Our data shows a significant decrease in the number of children in college among upper-middle income families. The \$50K-60K income family, for instance, had an average of 1.80 children in college three years ago, but 1.61 this year. Cornell University began verifying the number of children in college in 1985-86 and has seen a discrepancy between the reported number and the actual number of children in college in some cases. Our finding may be partially attributed to this verification procedure.

The results presented in Table 3 examine how much contributions from assets per child have changed in the last three years, after controlling for the number of children in college per household. In other words, a test is run to see whether the difference in estimated mean PCs between the two years is significant, assuming every family had the same number of children in college. For this purpose, the ANCOVA (Analysis of Covariance) technique is used to control for the covariate, (the number of children in college per household) and test the significance of the difference in mean PCs from assets. It is the \$40K-70K income families that have experienced the most significant growth in parental contributions from assets. The families with \$50K-60K, for example, had a \$1,099 contribution from assets in fiscal year 1985 on average, and a \$1,314 contribution in fiscal year 1988.

The results presented in Tables 2 and 3 clearly indicate that a decrease in the number of children in college per household and a rapid growth in PC from assets are important factors, which contribute to changes in PC in general, and to a significant increase in PCs among the middle income families, in particular. We must then examine how much parental contributions have changed in the last three years, after controlling for the variance attributed to the number of children in college per household and PCs from assets. Again, the ANCOVA (Analysis of Covariance) technique is used to control for the two covariates.

Table 4 presents estimated mean values (least-squares means) of parental contributions when all the covariates, the number of children in college and contributions from assets, are held constant at their mean values (Searle, Speed and Milliken, 1980). F tests are run to see the statistical significance between the two estimated means.

The families with over \$50K annual income no longer demonstrate highly significant differences in parental contributions between 1984-85 and 1987-88, after the variance attributed to the covariates was accounted for. For example, before controlling for the two covariates, the mean PC difference between the two years in the \$60K-70K income group was statistically significant with 10.1 F value (See, Table 1). When the variance was accounted for by the covariates first, the mean PC difference became no longer statistically significant with .30 F value (See, Table 4). In other words, the growth in PCs among the \$50K-80K income families in the last three years can be attributed to the significant increase in contributions from assets and/or the decrease in the number of children going to college.

In contrast, the families with \$10K-40K income demonstrated a highly significant increase in contributions, even after controlling for the two covariates. Referring to Table 3 again, these families have not really experienced growth in contributions from their assets, probably because they do not possess substantial assets as such. Instead, they have seen a significant increase in their parental contributions from their incomes.

Finally, close attention must be paid to the \$40K-50K income group in Table 4. As demonstrated in Tables 2 and 3, this is the group that has experienced a significant decrease in the number of children in college and a large increase in contributions from assets. Yet, even after controlling for these two covariates, the families in this income group clearly show a significant increase in contributions over the last three years. Based on this result, it can be stated that it is the middle income families with the annual income of \$40K-50K, who have seen the greatest increase in the amount they are expected to pay toward college education for their children at Cornell.

Summary and Conclusion

This study analyzed undergraduate dependent financial aid recipients at Cornell University in academic years 1984-85 and 1987-88. The study examined three major components (i.e. total income, assets and the number of children in college) and how they affected parental contributions (PCs) to higher education. All dollar figures were converted into constant dollars so that the two-year figures were comparable. The results indicate that all income groups, except the least wealthy and the highest income category, experienced significant increases in PCs between the two years. When the covariates, the number of children in college per household and contributions from assets, were controlled for, the study found: (1) families with over \$50K income no longer demonstrated highly significant differences in PCs, indicating the increment in PCs can be attributed to a decrease in the number of children in college and/or an increase in PCs from assets; (2) in contrast, families with \$10K-40K income did not show a highly significant growth in contributions from assets, but instead demonstrated a substantial change in PCs

mainly from income; and (3) most importantly, families with \$40K-50K income experienced a significant decrease in the number of children in college, an increase in PCs from assets and still demonstrated a significant increment in PCs between the two years even after controlling for the two covariates. Our results indicate that these families (\$40K-50K) have endured the most pressure in paying for their children's college education. This information should be useful to those involved in shaping financial aid policies at institutional, state and national levels.

References

- Consortium on Financing Higher Education (COFHE). Tuition, Student Budgets and Self-Help at the Consortium Institutions for Academic Year 1987-88. June, 1987.
- Destruisseaux, Paul. "Surge in Gifts by Individuals Pushes Private Aid to Colleges to \$7.4-Billion." *Journal of Higher Education* Vol. 33 (May 13, 1987) pp. 1 & 39.
- Evangelauf, Jean. "Debate Over Costs Heats Up." *Journal of Higher Education*. Vol. 33 (March 4, 1987) pp. 1 & 30.
- Evangelauf, Jean. "Increases in College Tuition Will Exceed Inflation Rate for Seventh Straight Year." *Journal of Higher Education*. Vol. 33 (August 12, 1987) pp. 1 & 33.
- Lanchantin, Meg and Others. *Trends in Student Aid: 1980 to 1986*. New York, NY: College Board Publications, 1986.
- Searle, S.R., Speed, F.M., and Milliken, G.A. "Populations Marginal Means in the Linear Model: An Alternative to Least Squares Means." *The American Statistician*. Vol. 34. pp. 216-221, 1980.

Table 1
Dependent Undergraduates with Financial Aid
Mean Difference in Parental Contributions
Fall 1984 vs. Fall 1987

Income	1984	1987	87-84	F Value	Sign. Level
	Mean PC (N) (Constant \$)	Mean PC (N) (Constant \$)			
Whole	3,718.8 (5134)	4,470.0 (4871)	751.2	123.50	p < .001
0-10K	765.6 (328)	934.4 (345)	168.8	1.52	n.s.
10K-20K	1,052.3 (768)	1,480.8 (665)	428.5	20.51	< .001
20K-30K	2,078.0 (864)	2,543.0 (763)	465.0	19.82	< .01
30K-40K	3,335.1 (953)	3,652.2 (825)	317.1	8.58	< .01
40K-50K	4,671.2 (850)	5,379.4 (752)	708.2	28.89	< .001
50K-60K	5,707.7 (652)	6,590.3 (591)	882.6	29.10	< .001
60K-70K	6,939.9 (375)	7,629.1 (431)	689.2	10.09	< .01
70K-80K	7,429.0 (184)	8,215.9 (244)	786.9	6.93	< .01
Over 80K	8,737.1 (160)	8,941.1 (255)	204.0	0.43	n.s.

Table 2
 Dependent Undergraduates with Financial Aid
 Mean Difference in # of Children in College per Household
 Fall 1984 vs Fall 1987

Income	1984 Mean (N)	1987 Mean (N)	87-84	F Value	Sign. Level
Whole	1.64 (5134)	1.58 (4871)	-0.06	21.46	p < .001
0-10K	1.43 (328)	1.33 (345)	-0.10	4.19	< .05
10K-20K	1.49 (768)	1.48 (665)	-0.01	0.07	n.s.
20K-30K	1.48 (864)	1.45 (763)	-0.03	1.01	n.s.
30K-40K	1.58 (953)	1.51 (825)	-0.07	4.08	< .05
40K-50K	1.64 (850)	1.55 (752)	-0.09	6.89	< .01
50K-60K	1.80 (652)	1.61 (591)	-0.19	23.27	< .001
60K-70K	1.94 (375)	1.77 (431)	-0.17	11.63	< .001
70K-80K	2.13 (184)	1.93 (244)	-0.20	6.51	< .05
Over 80K	2.20 (160)	2.09 (255)	-0.11	1.98	n.s.

Table 3
 Dependent Undergraduates with Financial Aid
 Least-Squares Mean Difference in Contributions from Assets
 Fall 1984 vs. Fall 1987
 After Controlling for # of Children in College

Income	1984 L.S.Mean(N) PC from Assets (Constant \$)	1987 L.S.Mean(N) PC from Assets (Constant \$)	87-84	F Value	Sign. Level
Whole	993.9 (5134)	1,158.1 (4871)	164.2	28.19	p < .001
0-10K	448.0 (328)	491.7 (345)	43.7	0.17	n.s.
10K-20K	584.8 (768)	754.3 (665)	169.5	5.31	< .05
20K-30K	885.8 (864)	966.9 (763)	81.1	1.00	n.s.
30K-40K	1,098.8 (953)	1,129.4 (825)	30.6	0.17	n.s.
40K-50K	1,220.4 (850)	1,435.3 (752)	214.9	6.99	< .01
50K-60K	1,099.2 (652)	1,313.5 (591)	214.3	7.75	< .01
60K-70K	1,302.8 (375)	1,606.3 (431)	303.5	9.77	< .01
70K-80K	1,402.5 (184)	1,356.4 (244)	(46.1)	0.13	n.s.
Over 80K	1,376.5 (160)	1,549.0 (255)	172.5	1.12	n.s.

Table 4
 Dependent Undergraduates with Financial Aid
 Least-Squares Mean Difference in Parental Contribution
 Fall 1984 vs. Fall 1987
 After Controlling for # of Children in College
 and Parental Contribution from Assets

Income	1984	1987	87-84	F Value	Sign. Level
	L.S.Mean(N) (Constant \$)	L.S.Mean (N) (Constant \$)			
Whole	3,825.2 (5134)	4,357.9 (4871)	532.7	90.32	p < .001
0-10K	782.2 (328)	918.7 (345)	136.5	1.84	n.s.
10K-20K	1,127.5 (768)	1,394.0 (665)	266.5	17.35	<.001
20K-30K	2,123.3 (864)	2,491.6 (763)	368.3	28.25	<.001
30K-40K	3,381.5 (953)	3,598.7 (825)	217.2	9.26	<.01
40K-50K	4,844.3 (850)	5,183.8 (752)	339.5	15.61	<.001
50K-60K	6,003.6 (652)	6,263.9 (591)	260.3	4.94	<.05
60K-70K	7,258.0 (375)	7,352.4 (431)	94.4	0.30	n.s.
70K-80K	7,588.2 (184)	8,095.8 (244)	507.6	4.65	<.05
Over 80K	8,849.4 (160)	8,870.6 (255)	21.2	0.01	n.s.