Exploring Racial and Gender Differences in ISA Contract Terms and Repayment Patterns

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At a Glance

Income share agreements (ISA) have garnered significant excitement as a new tool to finance postsecondary education, but it is unclear what effect they have on racial and gender equity. Using a proprietary data set of ISA contract holder records, this report analyzes differences in contract terms and repayment patterns across demographic groups, finding no consistent and significant favorability toward one racial/ethnic or gender group over another.

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About Jobs for the Future

Jobs for the Future (JFF) drives transformation of the American workforce and education systems to achieve equitable economic advancement for all. www.jff.org

About JFF's Financing the Future Initiative

JFF's Financing the Future is a policy initiative reimagining financing for postsecondary education and skills development. Launched in 2020, the initiative takes a big-tent approach, bringing together perspectives from across the stakeholder spectrum, with input from educators, policymakers, investors, philanthropic organizations, employers, and students themselves. By spurring conversation and action across an array of innovative financing options, Financing the Future aims to cultivate an education financing ecosystem that promotes opportunity and equity.

About JFF's Language Choices

JFF is committed to using language that promotes equity and human dignity, rooted in the strengths of the people and communities we serve. We develop our content with the awareness that language can perpetuate privilege but also can educate, empower, and drive positive change to create a more equitable society. We will continually reevaluate our efforts as language usage continues to evolve.

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Executive Summary

Income share agreements (ISA) are gaining traction as a new way to pay for postsecondary education and training. They show a good deal of promise as an effective financing option at a time when tuition costs and student loan burdens are growing and many schools and training providers are failing to produce outcomes that deliver positive returns on students' investments.[1] However, as is the case with any financial instrument, there are potential risks associated with ISAs, and in particular there are questions about how they impact racial/ethnic and gender equity.

At Jobs for the Future (JFF), we believe there's an urgent need to reimagine the way postsecondary education and training is financed, and we launched the Financing the Future (FTF) initiative to explore several innovative new approaches, including ISAs.

Key Takeaways

1. According to our research, ISAs appear to neither disproportionately advantage nor disadvantage Black or Latinx students or female students of any background.

2. While this data set is far more granular and detailed than what has been used in past research, it has limitations that require us to present our findings with significant caveats. We acknowledge that more research is needed.

3. While these findings apply to a specific set of ISAs in the market, the ultimate impact of any given ISA on racial/ethnic or gender equity depends on how the ISA is designed and underwritten, and on the quality of the education it is financing.

JFF's mission is to build a just and equitable society that offers economic opportunity for all, and we think ISAs could play a role in making that vision a reality. Therefore, we felt it was important to shed some light on some of the questions and concerns surrounding ISAs, and we conducted research to see if we could detect signs of inequities in this newly emerging financing model. We wanted to contribute to the small but growing body of evidence about ISAs, believing that better data, research, and practices would help ensure that ISAs can fulfill their potential of expanding access to education and training.

Using a proprietary data set with 7,639 contract holder records from an ISA program manager that works with school-based ISAs, we analyzed racial/ethnic differences and gender differences at the education provider and individual contract holder levels. We examined contract terms (income share, income threshold, and number of payment months) at the education provider level and repayment patterns at the individual contract holder level. We specifically tested the sensitivity of methods to assign an individual's race and ethnicity (also known as imputation).

We tested the relationship between contract terms and education provider as well as differences between various student groups focusing on race/ethnicity and gender. We did not find any consistent and significant relationships in contract terms or differences in student repayment patterns across racial/ethnic and gender categories that would imply a positive or negative impact on racial/ethnic and gender equity. Specifically, our analysis found the following:

- Schools with higher shares of Black students offered roughly the same contract terms as other schools, while Black students' monthly payments were lower than those of other students.

- Schools with higher shares of Latinx students offered the same income shares and thresholds but a slightly longer payment period, though Latinx students' monthly payments were also lower than those of other students.

- Schools with higher shares of female students offered slightly shorter contracts, but there was no difference in monthly payment amounts between female and male students.

ISAs are a relatively new financial instrument, and there is much about the size of the ISA market, trends, and impacts on students and equity that remain unknown. This research is not intended to be definitive, but rather a new contribution to a small but growing body of evidence.

Context

An ISA is an alternate financial instrument that students can use to finance their postsecondary educations. Under an ISA, a student only makes payments if they earn above a specified threshold, and their payments equal a percentage of their earnings. The financial obligation ends once a student makes a certain number of payments or a specified period of time elapses, regardless of how much they have paid. ISA contracts also end if a student's total payments have reached a specified cap, often expressed as a multiple of the amount they initially financed with the ISA.

ISAs have recently emerged as a new way to pay for postsecondary education and training. As tuition costs and student loan burdens have grown, and as new research shows many schools fail to produce outcomes that deliver positive returns on students' investments, ISAs have garnered significant excitement as a new financing model that can improve affordability, accountability, and access.[2]

At this early stage in the emergence of ISAs, these effects are largely theoretical rather than proven. A recent analysis found that one ISA provider appears to offer less favorable contract terms to students at minority-serving educational institutions compared with the terms offered

to students at nearby institutions with higher white populations. It also noted similar patterns for students in more female-dominated fields of study compared to the terms offered to students in more male-dominated fields of study.[3] Though imperfect, this analysis raises the question of whether the ISA underwriting approach—which considers differences between schools and programs in outcomes such as earnings and graduation rate—results, whether intentionally or not, in Black, Latinx, and female students being charged more for their postsecondary educations. One prominent ISA critic recently stated that it's "glaringly apparent" that ISAs' outcome-based pricing discriminates against Black and Latinx students and female students of all backgrounds.[4]

In contrast, ISA providers state that they are improving equity by attacking existing structural inequities in the education financing system.[5] For example, because ISA repayments are income-contingent, with lower income leading to lower (or even $0) monthly payments, persistent structural racial/ethnic and gender wage gaps may result in Black and Latinx students and female students of all backgrounds being charged less than white and male students for the same education.

Our inquiry seeks to add new evidence to the dialogue about the benefits and detriments of ISAs. To better understand how an ISA impacts equity across demographic groups, we focused on two research questions:

1. Is there a relationship between the ISA contract terms a provider offers students and the demographic composition of those students?

2. Do repayment patterns, which are a function of the contract terms and ISA recipients' incomes after school, correlate to race/ethnicity or gender?

Methodology

1. Data Source

This report uses a unique proprietary data set of the records of 7,639 ISA contract holders from the beginning of 2018 to the fall of 2021. Of those contract holders, 1,246 were in their repayment periods (having either graduated or left the programs they were enrolled in). The data set was shared by Leif, an ISA program manager that maintains information on contract terms and repayment for educational providers.[6] The data set contained no identifiable information for either the contract holders or the education providers, preventing specific demographic analysis of contract terms and repayment patterns at either the individual or provider level beyond what we were able to assign through probabilistic methods described below.

The ISAs in this data set finance 103 training programs at 51 education providers. These programs offer training in information technology fields, including software development, database administration, cybersecurity, data science, and DevOps. Twenty-nine of the 51 education providers offer a single training program, 12 offer two programs, and 10 offer between three and seven programs. The average program length is six months, with a minimum of one month and a maximum of 28 months (nearly two and a half years). None are degree-granting institutions or are Title IV accredited.

These ISAs are all offered by the education providers themselves, which also set the contract terms. Some of the education providers offer ISAs with a single set of terms, but schools that offer multiple programs may offer unique ISAs for each program, with modified terms for each.

2. Data

We tested whether there was a relationship between education providers' ISA student demographics and the favorability of the ISA contract terms they offered, specifically focusing on income share percentage, total number of payment months, and income threshold. We also tested whether there were differences between a student's race/ethnicity and gender and their repayment patterns, including average payback amount, total number of complete payments, number of days to first qualified income, and total delinquent balance.

2a. Gender

Gender data is not collected as part of the contract information. Consequently, it was assigned to each contract holder by the ISA program manager using Genderize, a tool that calculates a gender probability score based on people's first names.[7] For this analysis, we categorized gender using a probability of correct assignment of 90 percent or above as a cutoff, which is consistent

with protocols used in other research projects.[8] This resulted in 6,422 contract holders with a gender identification. The remaining 1,217 records were coded as missing; they represented almost 16 percent of the sample.

Table 1: Gender Distribution (individual level)

Gender	N = 7639	Percentage of Sample
Female	1,443	18.9
Male	4,979	65.2
Not imputed	1,217	15.9

For provider level analysis, female contract holders were summed and then the percentage of female contract holders at each education provider was calculated using the denominator of total contracts at each provider. We were unable to calculate a female percentage for one provider because of missing data.

Table 2: Gender Distribution (provider level)

	N	Minimum	Maximum	Mean	Median	Standard Deviation
Percent Female	50	0.00	100.00	25.15	19.17	24.08

2b. Race/Ethnicity

Because there is a strong debate over methods used to assign (or impute) race and/or ethnicity to individuals, we used three separate imputation methods culled from the current research literature.[9] Specifically, we used methods that assigned race/ethnicity based on the following factors:

1. The zip code of the contract holder's home address (geography)[10]

2. The last name and home zip code—via the Bayesian Improved Surname Geocoding (BISG) method, which combines surname and geography information to impute missing racial and/or ethnic data[11]

3. The first name, last name, and home zip code—via the new Bayesian Improved First Name Surname Geocoding (BIFSG) method[12]

We used U.S. Census data on race and ethnicity distributions of a zip code for the first method. For the latter two models, we used an open-source imputation tool called Surgeo.[13]

For each model, contract holders were categorized as the race/ethnicity with the highest percentage (for method 1) or probability (for methods 2 and 3).[14] The literature refers to this as the maximum method.[15] Further, the third method of race and ethnicity imputation, BIFSG, resulted in more than 30 percent of the contract holders not being assigned race or ethnicity. In other words, there was a significant amount of missing race and ethnicity data for this method. To address the missing data in this method, correlations between the BIFSG probabilities and home zip code and surname probabilities were calculated and highly correlated data in those two variables were used to impute missing data in the BIFSG method, resulting a modified version of this data.

Table 3: Race/Ethnicity Distribution (individual level)

Race/ Ethnicity	Model 1: Geography		Model 2: BISG		Model 3: BIFSG Modified	
	N = 7639	Percent of Sample	N = 7639	Percent of Sample	N = 7639	Percent of Sample
Black	832	10.9	1,063	13.9	1,741	22.8
Latinx	1,153	15.1	917	12.0	885	11.6
Other Non-White	283	3.7	636	8.3	326	4.3
White	5,368	70.3	3,708	48.5	4,687	61.3
Not Imputed	0	0.0	1,212	15.9	0	0.0

For provider-level analysis, Black and Latinx contract holders were summed and then the percentage of contract holders in each group at each education provider were calculated using the denominator of total contracts at each provider.

Table 4: Race/Ethnicity Distribution (provider level)

Group	Model	N	Minimum	Maximum	Mean	Median	Standard Deviation
Percent Black	Model 1: Geog.	51	0.00	100.00	14.53	7.14	19.83
	Model 2: BISG	46	0.00	100.00	18.65	12.02	22.05
	Model 3: BIFSG Mod.	51	0.00	100.00	26.49	25.00	22.08
Percent Latinx	Model 1: Geog.	51	0.00	100.00	16.14	14.47	17.37
	Model 2: BISG	46	0.00	42.86	7.83	7.14	8.75
	Model 3: BIFSG Mod.	51	0.00	42.86	6.71	3.70	8.65

2c. Contract Terms (Provider Level)

In this data set, contract terms for ISAs are determined at the educational provider level. Providers may offer either a single set of terms or a limited set of options to choose from. Contract term data for individual contract holders were pulled directly from contract agreements signed.

Income share percentage. Unlike loan instruments that have fixed payments, the monthly payment amounts for ISAs are variable and calculated as a percentage of the income the contract holder earns.

Total number of payment months. ISA contracts specify a total number of payment months, regardless of payback amount received. Once the agreed-upon number of payments have been received, the contract is terminated.

Income threshold. A key feature of an ISA is an income threshold. If a contract holder's income falls below the minimum threshold, that individual is not required to make payments. We excluded three contracts that had a minimum income of $100,000 and were identified as outliers.

Table 5: Contract Term Descriptive Statistics

	N	Minimum	Maximum	Mean	Median	Standard Deviation
Income share percentage (mean)	51	0.03	0.19	0.12	0.12	0.03
Total number of payment months (mean)	51	6.00	66.00	30.79	30.00	13.95
Minimum income threshold (in dollars, mean)	51	28,750.00	70,000.00	42,817.73	40,000.00	8,507.01

2d. Repayment Patterns (Individual Level)

Individuals with the same ISA contract terms may end up repaying different amounts if their earnings are different, which could vary based on local labor market conditions, macroeconomic conditions, labor market discrimination, and a range of other economic, social, and personal dynamics. The data set we analyzed included contract holders who were both students who were still enrolled in their education or training programs and individuals who had graduated or left their programs. Repayment patterns were analyzed for 1,246 contract holders who had data related to payback amounts and 1,469 contract holders who had data related to complete payments.

Average payback amount. The average monthly payback amount is the sum of all non-zero monthly payments divided by the number of payments that are greater than zero.

Total number of monthly payments made. The number of payments contract holders had made at the time the data set was extracted—not the total number of payments required in the contract. We present this statistic to give the reader an understanding of the progress contract holders included in the data set had made toward fulfilling the terms of their agreements.

Table 6: Repayment Pattern Descriptive Statistics

	N	Minimum	Maximum	Mean	Median	Standard Deviation
Average monthly payment amount (dollars)	1,246	54.61	3,193.45	1,030.34	991.67	370.32
Number of monthly payments made	1,469	0	24	7.71	6.00	7.00

3. Analysis

To test the relationship between contract terms and shares of Black, Latinx, and female contract holders at each education provider, we used bivariate analysis with simple linear regression at a 95 percent level of confidence. Separate analyses for each independent variable—percent female, percent Black, and percent Latinx—were run against each dependent variable in the contract terms. At the individual level, we compared differences in the means of each group for number of complete payments and average payback amount. We used a standard t-test at a 95 percent confidence level.[16]

Findings

Research Question 1: Is there a relationship between the ISA contract terms a provider offers students and the demographic composition of those students?

Across all three racial/ethnic imputation methods, we found no consistent statistically significant relationship between the overall racial/ethnic composition of the cohort of students who receive ISAs through a particular provider and the contract terms that the provider's students receive. Specifically, students at educational providers with higher proportions of Black and Latinx contract holders receive income share and income threshold terms that are not statistically different from those offered at schools with higher proportions of contract holders from other demographic groups. Two of the three racial/ethnic imputation methods found a positive relationship between the share of Latinx contract holders and the number of payment months in the ISA contract. The third method found no statistically significant relationship. It is important to note that the data set included only students with ISA contracts; there may be students without such contracts at these educational providers.

Table 7: Between-Provider Analysis of Contract Terms for Black and Latinx Contract Holders (N=7639)

	Model 1: Geography		Model 2: BISG		Model 3: BIFSG Modified	
	Unstandardized Coefficients	Significance Level	Unstandardized Coefficients	Significance Level	Unstandardized Coefficients	Significance Level
Income share percentage						
Percent Black	0.00	0.310	0.00	0.214	0.00	0.523
Percent Latinx	0.00	0.731	0.00	0.648	0.00	0.924
Total number of payment months						
Percent Black	0.105	0.296	0.055	0.523	0.060	0.507
Percent Latinx	0.075	0.513	0.520**	0.014	0.570**	0.011
Income threshold						
Percent Black	-13.206	0.830	24.336	0.685	23.159	0.675
Percent Latinx	56.801	0.418	-162.778	0.280	-191.981	0.170

** $p \leq 0.05$

Contract holders at providers with a higher proportion of female contract holders receive contract terms that have slightly lower numbers of payments compared to the contracts offered by providers with higher proportions of male contract holders. However, there is no statistically significant difference in income shares or income thresholds for contract holders at providers with higher proportions of male or female contract holders.

Table 8: Between-Provider Analysis of Contract Terms for Female Contract Holders (N=7641)

	Unstandardized Coefficients	Significance Level
Income share percentage		
Percent Female	0.00	0.112
Total number of payment months		
Percent Female	-0.263***	0.001
Income threshold		
Percent Female	15.752	0.761

*** $p \leq 0.001$

Research Question 2: Do repayment patterns correlate to race and ethnicity or gender?

Black students appear to have lower average monthly payment amounts than non-Black students (significant in all three models), and Latinx students have lower average monthly payment amounts than non-Latinx students (significant in all three models). Black students also have lower numbers of monthly payments made than other students (significant in one model).

Table 9: Between-Group Analysis of Repayment Patterns for Black and Latinx Contract Holders

	Model 1: Geography			Model 2: BISG			Model 3: BIFSG Modified		
	N	Mean	Significance Level	N	Mean	Significance Level	N	Mean	Significance Level
Number of monthly payments made									
Black	87	7.68	0.480	81	5.65	0.001***	141	7.99	0.313
Not Black	1,382	7.72		1,137	7.96		1,328	7.69	
Latinx	181	7.61	0.411	153	7.97	0.382	233	7.36	0.616
Not Latinx	1,288	7.73		1,065	7.79		1,236	7.78	
Average monthly payment amount (dollars)									
Black	76	971.89	0.090*	68	873.76	0.001***	202	985.70	0.042**
Not Black	1,170	1,034.14		965	1,032.26		1,044	1,039.98	
Latinx	160	980.86	0.029**	129	969.88	0.027**	118	984.59	0.063*
Not Latinx	1,086	1,037.63		904	1,029.56		1,128	1,035.13	

* $p \leq 0.1$, ** $p \leq 0.05$, *** $p \leq 0.001$

There does not appear to be any significant difference between female and male contract holders in either the average monthly payment amounts or the number of monthly payments made.

Table 10: Between-Group Analysis of Repayment Patterns for Female Contract Holders

	N	Mean	Significance Level
Number of monthly payments made			
Female	254	7.46	0.119
Male	1,030	8.04	
Average monthly payment amount (dollars)			
Female	221	1,042.88	0.282
Male	870	1,026.75	

Limitations and Future Research

While our findings contribute to a growing body of knowledge related to income share agreements, we acknowledge that there are important limitations to this study. Variation at both the education provider level and contract holder level combined with the lack of controlling or mediating variables suggest that other factors may be driving our findings, such as program length and intensity, amount financed, and local labor market conditions. Our reported demographics of education providers' students are also based on the demographics of ISA contract holders, which may not represent the overall demographic distribution of a provider's student body if any of these providers have students without ISAs. This analysis also is unable to determine the extent to which selection bias exists in the process by which students choose (and are admitted) to attend specific education programs and how they choose to finance their tuitions. Because imputation is based on probabilities at the individual level, any error at that level will be amplified at the provider level. As a result, differences, or lack of differences, between groups are suggestive.

Because of these limitations, we believe that additional research is needed. Better data should include more information about students' prior incomes, levels of educational attainment, and current occupations (if no longer enrolled); the amounts financed and payment caps; the length and intensity of the education programs, as well as the fields of study the programs specialize in; and other characteristics of the education provider. We also see potential to intentionally design programs so that researchers can better control for selection bias.

Moreover, ISAs should also not be evaluated in a vacuum. The field also needs additional research into the racial and gender equity of traditional student loan programs to help us understand whether ISAs are improving or undermining equity relative to the existing system.

Additionally, this research explores an important but admittedly narrow definition of equity. For example, ISAs hold the potential to improve the quality of education by giving educational providers a financial incentive to ensure that students achieve positive outcomes—a model that could lead to an increase in the quality of education and training and thereby promote greater racial or gender equity. But the opposite could be also true—the risk-sharing aspect of ISAs may give students a false sense of security, leading them to fail to closely scrutinize low-quality schools. Ultimately, if ISAs are properly designed, they can expand access to education financing, which could improve racial and gender equity, but if they're designed in a predatory manner, they could undermine equity.[17]

A comprehensive assessment of these potential effects is beyond the scope of this report.

Conclusion

To date, much of the conversation around the equity effects of ISAs has been based on speculation rather than robust empirical research. This analysis is useful in grounding the conversation by offering a look at the way ISAs function in the real world.

Our finding—that ISAs appear to neither disproportionately advantage nor disadvantage Black, Latinx, and female students—is far from the final word on the subject. More research is needed to confirm (or dispute) these findings, especially as ISAs evolve over time.

These findings do not amount to conclusive evidence that the concerns about the impact of ISAs on racial/ethnic and gender equity are unfounded. Like any other financial product, ISAs have the capacity to improve or undermine racial and gender equity—the effect of each ISA depends on the details of how that specific instrument is designed and underwritten.

ISA providers themselves should be intentional about how they structure their ISAs, and they should regularly conduct internal data analyses—or partner with academics and other established researchers—to study the equity impacts of their products. Better data, research, and guidance can help the ISA industry and individual ISA providers ensure that the ISAs they offer improve and do not undermine racial/ethnic and gender equity.

Acknowledgements and Disclosures

The authors sincerely thank Leif for sharing its data sets on student financial outcomes, which Leif did willingly with no knowledge of what this analysis would find and no control over the final product. These data sets were anonymized and analyzed in aggregate. They also did not include any personally identifiable information from students. Jobs for the Future (JFF) hopes to partner with other ISA organizations on future research.

JFF has not received any funds from Leif, nor is JFF in any business arrangement with Leif other than an agreement to share data for this report. Moreover, this research should not be interpreted as an endorsement of Leif or its services.

JFF's ETF@JFFLabs impact fund has provided recoverable grants to three organizations that offer ISAs. The funds are restricted to the purpose of funding students pursuing further education and training. JFF has no equity stake in any ISA company.

Endnotes

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[14] The data set JFF received from Leif included imputations for Black, Hispanic, Asian, Pacific Islander, Native American, multiple race, and white. Race and ethnic categorization is mutually exclusive (e.g, Hispanic is non-white Hispanic). Sample sizes for Asian, Pacific Islander, Native American, and multiple race did not yield sufficient sample sizes for analysis. JFF uses the term Latinx rather than Hispanic to denote non-white individuals of Latino or Hispanic descent.

[15] Zhang, "Assessing Fair Lending Risks," https://doi.org/10.1287/mnsc.2016.2579.

[16] We also ran analysis with bootstrapping using bias-corrected and accelerated confidence intervals and 1,000 replications to test the sensitivity of the result since the t-test assumptions of normality were reaching the edge of recommended rules of thumb statistics for skewness and kurtosis. Results from this analysis were consistent with the findings we cite here.
Barbara G. Tabachnick and Linda S. Fidell, *Using Multivariate Statistics, 6th Edition*, (New York, NY: Pearson, 2013); Rex B. Kline, *Principles and Practice of Structural Equation Modeling, 2nd Edition* (New York, NY: The Guilford Press, 2005).

[17] Pollack, *Can Student-Centered Income Share Agreements Improve Economic Opportunity and Equity?* https://www.aspeninstitute.org/publications/student-centered-income-share-agreements-issue-brief/.