



# Postsecondary Equity & Economics Research Project

A joint initiative of  
George Washington University,  
Columbia University and Student Defense

## Hair and Taxes

### *Cosmetology Programs, Accountability Policy, and the Problem of Underreported Income*

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**JANUARY 2022**

*We are grateful for support from Arnold Ventures (Grant ID#20-044) and appreciate comments from Burt Barnow and seminar participants at GWU. We thank Saniya Mahate for excellent research assistance. The views expressed in this report are solely those of the authors.*

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## INTRODUCTION

Earnings measures are central to conversations about accountability in higher education—particularly for vocational programs—and it is imperative that these measures accurately reflect student outcomes. In the coming months, the U.S. Department of Education will engage in negotiated rulemaking to consider reviving an accountability system under the Higher Education Act’s (HEA) requirements that proprietary and postsecondary vocational institutions must provide “an eligible program of training to prepare students for gainful employment in a recognized occupation.”<sup>1</sup> Previous versions of earnings-based accountability regimes drew criticism and legal challenges from cosmetology schools<sup>2</sup> who argued that earnings-based metrics unfairly disadvantaged their field as many of their graduates rely heavily on tipped income which may go underreported in Social Security Administration (SSA) and Internal Revenue Service (IRS) earnings data.

In this report, we investigate the plausibility of this critique regarding underreporting of earnings in cosmetology and other similar fields, such as massage therapy or bartending, where individuals receive a portion of their income in tips. We develop an estimate of underreported tipped income and assess how adjustments to earnings to account for tips would change outcomes for cosmetology programs under the 2014 Gainful Employment Rule (GE).<sup>3</sup> We compare such adjustments to the outcomes of the 2014 GE Rule appeals process based on “alternate earnings” data supplied by appealing institutions. We further ask whether reasonable levels of underreporting could drive performance on earnings-based accountability metrics, generating a more complete picture of how underreporting of income may—or may not—affect program performance on earnings-based accountability metrics.

We find that the underreporting of tips plays little role in the success or failure of programs under the 2014 Rule. The 2014 Rule’s alternate earnings appeals process, which allowed institutions to submit their own survey data on graduates, could, however, be improved to guard against schools submitting implausibly high reports of graduates’ earnings on appeal. Alternate earnings estimates were about 73% higher than earnings reported in SSA data under the standard GE calculation for all programs and 82% higher for cosmetology programs specifically. These changes are far too large to reflect tipped income alone and suggest potential flaws in the survey methodology or data used by self-reporting institutions with a vested interest in the results. Based on IRS estimates of the tax gap and the percentage of underreported tipped income in personal services,

we find that underreporting of tipped income is likely to constitute just 8% of earnings. Adjusting earnings estimates by 8% would lead to only small changes in the number and percentage of cosmetology programs passing and failing debt-to-earnings thresholds under GE, suggesting that underreporting of tips plays little role in the success or failure of programs under GE. We conclude with policy recommendations.

## BACKGROUND

The Higher Education Act requires non-degree career education programs at public and non-profit institutions, as well as all programs at for-profit institutions (degree and non-degree), to “prepare students for gainful employment in a recognized occupation.”<sup>4</sup> The Obama Administration’s 2014 Gainful Employment (GE) rule defined “gainful employment” based on the debt-to-earnings ratios of graduates. The law created three zones: pass, warning, and failing based on various thresholds of debt-to-earnings. Although the regulation was rescinded by the Trump administration in 2019,<sup>5</sup> the Department of Education placed Gainful Employment on the agenda for upcoming negotiated rulemaking in early 2022.<sup>6</sup>

The use of earnings for accountability under GE generated controversy. Cosmetology programs, which offer sub-baccalaureate certificates for hair stylists, barbers, aestheticians, and nail technicians, disproportionately failed the 2014 debt-to-earnings thresholds set by the Administration. An estimated 55,000 students<sup>7</sup> enroll each year in roughly 1,352 cosmetology programs across the United States. Nearly 1/3 of these programs (32%) either “failed” or were in the “warning” zone under the GE debt-to-earnings thresholds under the 2014 rule, as shown in Figure 1. This average is substantially higher than the average for all programs subject to the GE rule at 24%. Failure rates also varied dramatically by sector, as shown in Figure 2.

Cosmetology schools lobbied vigorously against GE and continue to lobby against similar earnings-based metrics proposed by Congress.<sup>8</sup> Their primary argument is that GE’s presumptive use of Social Security Administration (SSA) data to determine the earnings of former students does not accurately capture tipped and self-employed income, which they claim is underreported in the SSA data. In 2017, the American Association of Cosmetology Schools (AACCS) won a lawsuit that, although it did not change the 2014 Rule’s debt-to-income metric and the presumptive use of SSA data, it ultimately eased the schools’ path to appeal a program’s failing debt-to-income result.

The 2014 Rule’s appeals original process allowed schools to submit data from state data or institutional surveys of the schools’ graduates. Survey-based data collection efforts present some well-known challenges for researchers and evaluators, including non-response bias and other selection concerns.<sup>9</sup> To mitigate some of these concerns, standards for surveys (e.g., a requirement for a 50% response rate),<sup>10</sup> were originally put in place to enhance the accuracy of survey-generated earnings estimates.<sup>11</sup> As a result of the AACCS challenge in court, however, schools no longer had to comply with the 2014 Rule’s survey requirements (e.g., minimum response rates). If they chose to appeal, the schools could provide their own estimates of the earnings of their graduates based on state data or self-administered surveys of their alumni in place of the standard SSA earnings, without any meaningful restrictions or quality controls on how they administered and collected these data. These self-reported earnings would then be used to re-calculate debt-to-earnings ratios under GE and could potentially change a program’s status from failing to warning zone or passing.

A predictable consequence of the lack of standards, was that reported earnings under an appeal could be based on a small number of a school’s most successful graduates. Below, we examine how the permitted survey-based “alternate earnings” measures reported by institutions in the appeals process differed from the standard SSA earnings.

The standard SSA earnings, should—in theory—include tipped income. Under the law, tipped income should be reported to the Internal Revenue Service (IRS) by both the employee and their employer. Per IRS guidelines, employees are to keep a daily record of tips, report any tips over \$20 per month to their employer, and report all tips on their individual income tax return (including non-cash tips like tickets). The employer must retain employee tip reports, withhold Social Security and Medicare tax based on wages and tips, and pay their own employer share of taxes on tips.<sup>12</sup>

There is relatively little economic literature on underreporting of tipped income and few estimates of underreporting other than those done by the IRS. Slemrod (2019) reviews the literature on tax compliance and enforcement.<sup>13</sup> He points out that measuring tax evasion is inherently difficult, because—like other crimes—the perpetrator has an incentive to be secretive to avoid getting caught. But unlike other crimes, there is no victim, so there is no reporting or clear evidence that the crime has been committed, although there are sometimes patterns or clues in tax returns that can help identify evasion. He notes that almost all the empirical analyses of evasion “don’t actually have a reliable measure of evasion,” (p. 912) but he highlights that large-scale randomized auditing by the IRS is a reasonable strategy to estimate the “tax gap” or the aggregate magnitude of tax evasion in the economy. We return to the tax gap to develop an estimate of underreporting below.<sup>14</sup>

## DATA

We draw on publicly available Gainful Employment (GE) data, IRS tax data, and data from the Bureau of Labor Statistics Occupational Employment and Wage Statistics (OEWS). The GE data contain both the original Social Security Administration (SSA) 2015 debt-year program-level earnings released in 2017 as well as the results of appeals, as of the latest publication in April 2018.<sup>15</sup>

## APPEALS UNDER GE

Our tabulations of the Gainful Employment data reveal that 882 programs, representing 10% of the total, appealed after finding out their initial status. These programs were either in the “warning zone” or “failing” GE debt-to-earnings thresholds. Among programs that appealed, 532 or 60% of the appeals were “abandoned,” 109 or 12% were “approved,” and just 7 programs (only 0.8%) were denied. The remaining appeals were listed as “missing” or “N/A” (about 26%), as shown in Figure 2.

As predicted, cosmetology programs were the most likely of any field to file an appeal, with 254 appeals comprising 29% of all appeals. “Medical Assisting” and “Design and Applied Arts” were the next largest group of appeals, accounting for about 9-10% of the total each. Another highly tipped field, “Massage Therapy” was only the 10<sup>th</sup> ranked field for appeals with just 20 programs appealing, accounting for about 2.3% of appeals, as shown in Table 1.

In Table 2, we show the outcomes of the appeals process for cosmetology programs. About 61 additional programs passed the GE threshold after the appeal and 39 programs were no longer classified as failing.

The “alternate earnings” data provided by institutions for the appeal (typically based on surveys of graduates) is not directly provided in the GE data. However, the GE data do contain annual debt-to-earnings rates for each program before and after the appeal. Using these data, we can calculate what the institution’s self-reported alternate earnings would have to have been to obtain the new rate.<sup>16</sup>

For example, according to the original SSA earnings data, the mean annual earnings of cosmetology graduates from one school in Georgia was \$18,302, making its debt-to-earnings ratio a score of 8.66% (not meeting the pass rate). After this school appealed, however, its new debt-to-earnings rate dropped to 5.63%, suggesting that the mean annual earnings used in the appeal calculation had to be \$28,153—nearly \$10,000 more per year and a 54% increase over the SSA records.<sup>17</sup>

We do the same calculation for all programs with approved appeals and for all approved cosmetology programs in the upper rows of Table 3. For both groups the average increase in earnings in an appeal is about \$10,500. In percentage terms, this increase constitutes a 73% increase for all programs and an 82% increase over SSA earnings for cosmetology programs—far beyond any reasonable estimate of what underreporting for tips could possibly be. The maximum increase is particularly astonishing—one school reported an increase of 336%.

The alternate earnings appeals process appears to significantly inflate earnings estimates used to calculate the debt-to-earnings ratios, far beyond the amount that could be plausibly explained by unreported tipped income.

## ESTIMATING UNDERREPORTING

Estimates of underreporting of tipped income typically rely on estimates of the “tax gap.” The tax gap is defined as the difference between the total amount of tax owed under the tax code and the amount that is reported and paid in on-time returns (Mazur & Plumley 2007).<sup>18</sup> The most definitive source of information and estimates of the tax gap is the U.S. Treasury Department’s Internal Revenue Service (IRS). The IRS breaks down the sources of the tax gap into three mutually exclusive categories: the non-filing gap (based on missing returns), the underpayment gap (reported, but not paid on time), and the underreporting gap. The underreporting gap is our primary interest in the context of tipped income. It is defined as “the additional tax due on timely filed returns arising from the misreporting of tax liability on those returns (compared to the true liability owed under the Tax Code).” (Mazur & Plumley 2007 p.570).

The IRS process for assessing the underreporting gap is extremely time intensive. Estimates are based on algorithms using regular tax audits and audits of thousands of randomly selected tax returns and statistically adjusting for differences in auditors, among other things. For example, in 2001, the IRS randomly selected 46,000 individual tax returns to study underreporting and assessed them in 2002-2004 with final estimates in 2006.

New estimates based on 2011-2013 became available in 2019. The running headline for these new estimates was that the tax gap was “substantially unchanged.”<sup>19</sup> The total individual income tax gap was around \$245 billion after enforcement efforts and late payments.<sup>20</sup> We use this value as the starting point for our analysis and we describe our calculation in Table 4.

To approximate how much income in tips is not reported, we start with the IRS estimate of the individual income tax gap and adjust for inflation to 2018 dollars to match the other values in our analysis. The IRS estimates that 10% of that tax gap comes from unreported tipped income, leaving about \$26.4 billion in taxes owed on unreported tipped income. We then approximate the amount of unreported tips that would result in this gap in taxes by looking at the earnings distribution of tipped income workers and their respective tax brackets.<sup>21</sup> The average percent of income tax owed for tipped workers is about 17.8%, so we can infer that there is about \$147.8 billion in unreported tip income.<sup>22</sup>

We next find the proportion of this tipped income that comes from individuals in personal service firms, including cosmetology. The 2018 Treasury Inspector General for Tax Administration (TIGTA) audit of tipped fields finds that 42% of the unreported tipped income comes in their sample comes from three fields: full-service restaurants, limited-service restaurants, and personal services.<sup>23</sup> Then, looking at a smaller sample of employers with a certain type of tip agreement, they give a more detailed breakdown of the amount in unreported tips coming from personal services alone, which is 11% of the amount from these three largest fields. Taking 42% of \$147.8 billion of unreported tipped income from restaurants and personal services, and then taking 11% of that total, leaves us with about \$6.8 billion from personal services only.

Next, we look at employment and income of those in the personal service field (as listed in the 2018 TIGTA report) to approximate the percentage of personal service income paid to cosmetologists and hairdressers. We use 2018 Bureau of Labor Statistics’ OWES data to do so and find that 11% of personal service income is paid to cosmetologists and hair dressers, which totals about \$750.9 million in unreported income for cosmetologists and hair dressers. Next, we divide this amount by the number of hairdressers and cosmetologists there were in 2018 (377,210 according to BLS OWES data) to get our estimate of about \$1,991 in unreported tipped income per cosmetologist/hairdresser. We use the same source for their median income (\$24,780) and find that \$1,991 is about 8% of a cosmetologist’s/hairdresser’s income. In sum, our best estimate is that about 8% of earnings go underreported by hairdressers and cosmetologists.

To double check our approximation, we generate an alternate estimate based on another data point based on cash tips. In their 2011-2013 report, the IRS assumes that unreported tip income has the same noncompliance rate as the detected noncompliance rate for sole proprietor net income. This puts cash tips in the category of individual income “subject to little or no information reporting.” The estimated net misreporting percentage<sup>24</sup> of this type of income is 55%.<sup>25</sup> So, if a cosmetologist/hairdresser was paid all of their tips in cash, and they are tipped on average 21%,<sup>26</sup> then we would expect their income to be underreported by 11.55% (55% of 21%). We predict this is an overestimate of underreporting, since it is unlikely that 100% of tips were paid in cash to hairdressers and cosmetologists in 2018. Tips paid on a credit card fall under the category of income

that is “subject to substantial information reporting and withholding” with a net misreporting percentage of 1%. Incorporating credit card tips would significantly decrease this estimate of underreporting and could likely result in an estimate close to 8%, as in the previous (more precise) calculation.

Our estimate is reasonable in light of the few other data points we have on cosmetologist tips. For example, Payscale reports that cosmetologist receive about 21% of their income in tips.<sup>27</sup> Assuming that most cosmetologists and their employers follow the law and report their tips, 8% seems like a reasonable estimate of what might go unreported. As a robustness check, however, we also inflate earnings by 15%, under the assumption that cosmetologists report almost none of their tips or that there may be other sources of unreported income that we have not identified. Of course, the 15% estimate is not supported in the IRS data, but we use this simply as a far upper bound on underreporting.

## ADJUSTING EARNINGS FOR UNREPORTED TIPS

We next use our 8% estimate and the 15% upper bound estimate to adjust the earnings of cosmetology programs under GE. The lower rows of Table 3 report on the average difference in earnings we observe.

The results are strikingly different from the alternate earnings appeal. Notably, earnings increase by just about \$1,126 on average for the 8% adjustment and by \$2,112 for the 15% adjustment. Of course, this is by construction, but the comparison to an 82% and \$10,000 change in the appeals is striking. Again, the alternate earnings appeal data does not seem within the realm of possibility for underreported tipped income.

With our adjustments, we find that the number and proportion of cosmetology programs that pass and fail the debt-to-earnings threshold do not change substantially. As shown in Figure 4, inflating earnings by 8% results in only minimal changes in outcomes. Just 19 additional programs out of 1,359 (or just 1.4% more) programs failing debt-to-earnings metrics than under the original GE calculations. Overall, the proportion “failing” or in the “warning zone” decreases by just 2 percentage points from 32 to 30 percent after adjusting for underreporting. Likewise, the percentage passing is about 2 percentage points higher than in the original SSA data in Figure 1 at 70 percent.

Figure 5 show the results for the 15% adjustment. Allowing a very generous 15% additional earnings for cosmetology programs shifts the percentage passing/failing by about 7 percentage points over the original SSA data to a 75% pass rate.

We show the results of the original GE rule, the alternate earnings appeal process, and our tipped income adjustments together in Figure 6. Our 8% adjustment seems to nearly equally split the difference between the original SSA earnings (19 more programs fail with our adjustment and the appeals (20 fewer programs fail than with the appeals). The 15% adjustment is much more generous than even the 2014 Rule’s appeals process with 32 additional institutions passing and 1 fewer school failing, suggesting that this larger adjustment is an extreme upper bound and unsupportable for accountability.

## CONCLUSIONS AND POLICY IMPLICATIONS

In the coming months policymakers have the opportunity to implement policies that will strengthen accountability and protect students. Our investigation into earnings data used in the 2014 Rule’s “alternate earnings appeal” suggests that the appeal as it formerly operated could be improved in order to prevent schools from using graduate surveys to inflate programs’ debt-to-income ratios and avoid oversight. Indeed, programs raised their earnings estimates by an implausible average of 73%. Among cosmetology programs, earnings appeals resulted in earnings that were 82% higher than the reported SSA earnings. These earnings numbers undermine the credibility of cosmetology programs that argue that their field is disproportionately harmed due to the underreporting of tipped income. Unreported income of 82% is far beyond any reasonable estimate based on IRS earnings or real-world tipping behavior and may be driven by flawed survey data submitted by institutions for their own appeal. We recommend that policymakers contemplating GE not allow alternate earnings appeals based on survey data.

We develop an estimate of underreporting of tipped income based on IRS reports based on random audits of thousands of individuals. Using estimates of the tax gap and percentages attributed to tipped income in personal services and for cosmetologists specifically, we develop an estimate of the percentage of income that goes unreported in this field of about 8%.

We adjust earnings of cosmetology programs by 8% and find that the overall passage and failure based on debt-to-earnings ratios has only a very modest impact on passage and failure of GE thresholds. This finding suggests that underreporting of tipped income is not the central reason why cosmetology schools are failing GE. We further find that a 15% upper bound adjustment for underreporting would be too generous and result in even less accountability than the flawed alternate earnings appeal. We suggest that any adjustments for tipped income be limited to 10%.

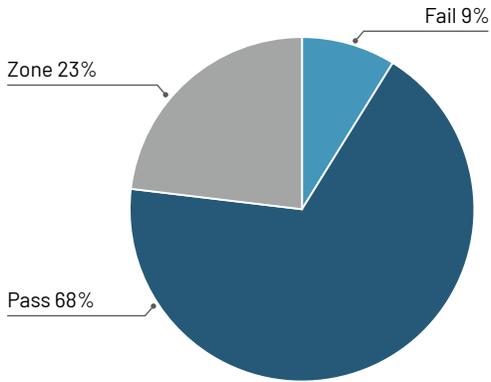
Although tips are likely the largest component of underreported income for cosmetologists, underreporting is not limited to tips. For example, those who are self-employed or accept unofficial “under-the-table” cash payments for services may illegally underreport this income to the IRS and SSA. These underreporting problems may, of course, be prevalent in other fields to a greater or lesser extent and are not unique to cosmetologists. The types and sources of underreporting undoubtedly vary by occupation, location, nature of the employer-employee relationship, and more. Moreover, non-wage benefits such as health insurance and retirement contributions are not included in SSA earnings measures.

Still, our analysis of the largest potential source of underreporting in a field that has successfully lobbied and litigated for exceptions, demonstrates that this type of underreporting has little impact on program outcomes using SSA earnings under the 2014 GE Rule. While SSA or IRS data may not perfectly capture all income, our analyses show that these sources continue to offer a much more reliable record of earnings than the implausibly large estimates offered up by institutions under the alternate earnings appeals process.

We recommend that policymakers continue to use SSA or IRS earnings data for GE or similar accountability policies. We further recommend substantial changes to the alternate earnings appeals process to avoid the use of graduate surveys by appealing institutions. Should policymakers allow programs in heavily-tipped fields to appeal, a reasonable earnings adjustment would be to allow earnings to be inflated by 8%, or at most, 10%. We believe that an 8-10% adjustment may reasonably be applied beyond cosmetology to other fields where underreporting is prevalent.

## FIGURES

**Figure 1. Official Status of Cosmetology Programs under Gainful Employment**



Source: 2015 GE Data Final Rates.

Notes: Program status is based on pre-appeal data. There are a total of 1,359 cosmetology programs in the GE data.

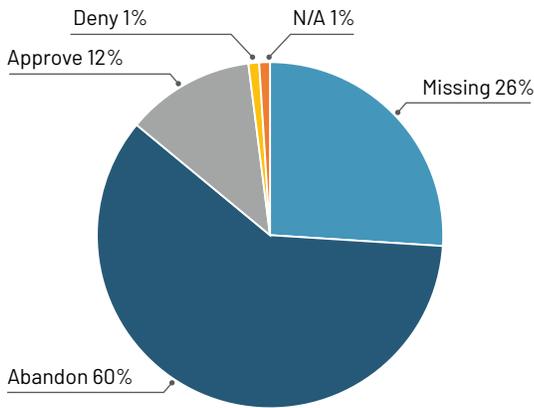
**Figure 2. Official Status of Cosmetology Programs under Gainful Employment, by Sector**



Source: 2015 GE Data Final Rates.

Notes: Program status is based on pre-appeal data. There are a total of 8 cosmetology programs at non-profit institutions in the GE data, 1164 at for profit institutions, and 187 at public institutions.

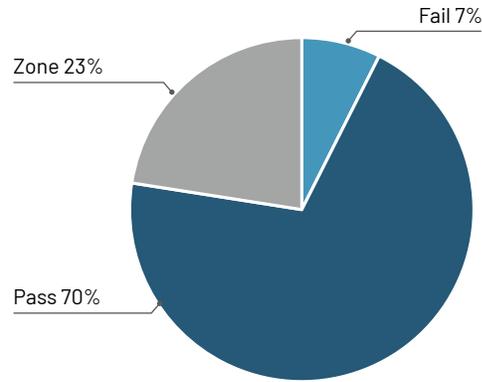
**Figure 3. Official Appeal Decisions**



Source: 2015 GE Data Final Rates with Appeal Decisions.

Notes: A total of 882 programs appealed. Abandoned represents programs for which schools submitted a notice of intent to appeal but did not follow-up with required information by the deadline. Approved represents programs for which schools met the requirements for the DoED to grant the appeal.

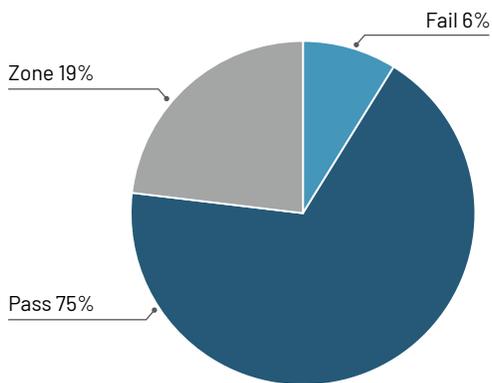
**Figure 4. Status for Cosmetology Programs after 8% Earnings Adjustment**



Source: Authors' calculations using 2015 GE Data Final Rates.

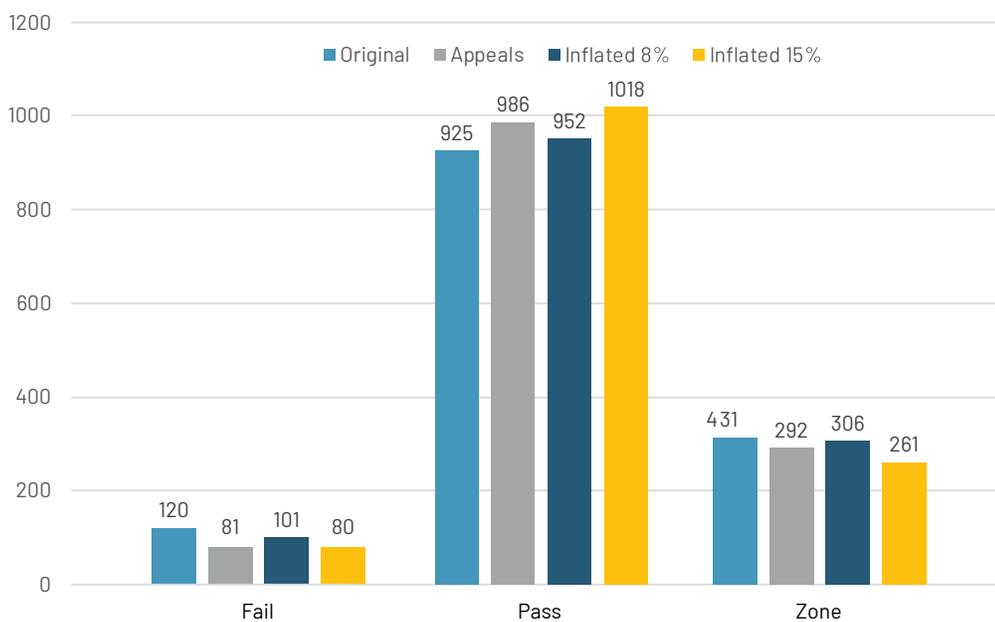
Notes: We inflate the higher of mean or median earnings by 8% and compare to the GE thresholds.

**Figure 5. Status for Cosmetology Programs after 15% Earnings Adjustment**



Source: Authors' calculations using 2015 GE Data Final Rates.  
 Notes: We inflate the higher of mean or median earnings by 15% and compare to the GE thresholds.

**Figure 6. Cosmetology Program Status Under Original, Appeals, and Adjusted Earnings**



Source: Authors tabulations 2015 GE Data Final Rates with Appeal Decisions.  
 Notes: Original is based on SSA data prior to appeals. Appeals are based on "Alternate Earnings Appeals" reported by institutions. The 8% inflated earnings are based on our estimate of underreported tips. The 15% inflated earnings represent an upper bound on underreporting.

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## TABLES

**Table 1. Appeals by Field of Study**

| Description                | Count | Percent |
|----------------------------|-------|---------|
| Cosmetology                | 254   | 29%     |
| Medical Assisting Services | 87    | 10%     |
| Design and Applied Arts    | 82    | 9%      |
| Health Care Administration | 60    | 7%      |
| Criminal Justice           | 40    | 5%      |
| Culinary Arts              | 31    | 4%      |
| Film/Video Production      | 29    | 3%      |
| Business Administration    | 23    | 3%      |
| Legal Assistant            | 22    | 2%      |
| Massage                    | 20    | 2%      |

Source: 2015 GE Data Final Rates with Appeal Decisions.

Notes: We included only the ten fields with the most appeals. Counts are based on 4-digit CIP codes. In descending order of number of appeals, the following 4-digit cips are included in the table: 1204, 5108, 5004, 5107, 4301, 1205, 5006, 5202, 2203, 5135. Percents represent of all appeals that were in a particular field.

**Table 2. Cosmetology Program Official Status Before and After Appeals**

|      | Original Status | Appeal Status |
|------|-----------------|---------------|
| Pass | 925             | 986           |
| Zone | 314             | 292           |
| Fail | 120             | 81            |

Source: 2015 GE Data Final Rates with Appeal Decisions.

Notes: Pass, Zone, and Fail include all changes (denoted as Fail\* and Fai\*\*) in the GE data.

**Table 3. Earnings Differences for Alternate Earnings Appeals and Adjusted Earnings**

|  | Obs   | Mean   | St. Dev. | Min | Max    |
|--|-------|--------|----------|-----|--------|
| <b>All Programs with Approved Appeals (Alternate Earnings Appeal Data)</b>         |       |        |          |     |        |
| Appeals Earnings Difference  | 109   | 10,739 | 7,097    | 3   | 38,853 |
| Appeals Earnings Percent Difference  | 109   | 73%    | 60%      | 0%  | 366%   |
| <b>Cosmetology Programs with Approved Appeals (Alternate Earnings Appeal Data)</b> |       |        |          |     |        |
| Appeals Earnings Difference  | 78    | 10,425 | 5,501    | 11  | 25,986 |
| Appeals Earnings Percent Difference  | 78    | 82%    | 64%      | 0%  | 366%   |
| <b>All Cosmetology Programs with Tip-Adjusted Earnings</b>                         |       |        |          |     |        |
| 8% Earnings Difference   | 1,359 | 1,126  | 312      | 159 | 2,144  |
| Earnings Percent Difference  |       | 8%     |          |     |        |
| 15% Earnings Difference  | 1,359 | 2,112  | 586      | 298 | 4,021  |
| Earnings Percent Difference  |       | 15%    |          |     |        |

Source: Authors tabulations of 2015 GE Data with Appeal Decisions.

Notes: We solve for the new earnings that would result in the post-appeal debt to earnings ratio. We difference this from the higher of the original mean or median earnings, then divide by the original "highest" to find the percent earnings increased by.

**Table 4. Estimation of Underreported Tipped Income for Cosmetologists**

| <b>% UNREPORTED TIPS PER PERSON</b> |  | <b>8%</b>       |   |                 |   |
|-------------------------------------|--|-----------------|---|-----------------|---|
| <b>1</b>                            | Total Individual Income Tax gap                          | 264,090,000,000 |   |                 | Source: IRS 2011-2013 estimate of tax gap     |
| <b>2</b>                            | % individual income tax gap from unreported tip income   | 10%             | Amount owed from unreported tipped income | 26,409,000,000  | Source: IRS 2006 estimate of tax gap          |
| <b>3</b>                            | Average tax owed for tipped workers                      | 18%             | Amount of unreported tipped income        | 147,750,923,129 | Source: Allegretto & Cooper EPI report 2014   |
| <b>4</b>                            | % unreported tips from restaurants and personal services | 42%             | from restaurants and personal services    | 62,055,387,714  | Source: 2018 Treasury Inspector General Audit |
| <b>5</b>                            | % of above just personal services                        | 11%             | from personal services only               | 6,826,092,649   | Source: 2018 Treasury Inspector General Audit |
| <b>6</b>                            | % personal service inc. to cosmetologists, hair dressers | 11%             | from cosmetologists, hair dressers        | 750,870,191     | Source: 2018 BLS OEWS Data                    |
| <b>7</b>                            | Number of cosmetologists, hair dressers                  | 377,210         | per cosmetologist, hair dresser           | 1,991           | Source: 2018 BLS OEWS Data                    |
| <b>8</b>                            | Median annual wages                                      | 24,780          | % unreported tips per person              | 8%              | Source: 2018 BLS OEWS Data                    |

Notes: Starting with the 2011-2013 estimate of the individual income tax gap, we back out an estimate of the underreporting of tips per cosmetologist. We adjust the tax gap for inflation to 2018\$. We use employment and annual earnings from 2018.

## ENDNOTES

- 1 20 U.S.C. § 102(b)(1)(A)(i), (c)(1)(A).
- 2 Cosmetology schools generally train student to become hair stylists, barbers, nail technicians, and aestheticians.
- 3 See Program Integrity: Gainful Employment, 79 Fed. Reg. 64,890 (Oct. 31, 2014), *corrected by* 79 Fed. Reg. 71,957 (Dec. 4, 2014).
- 4 U.S.C. § 20 102(b)(1)(A)(i), (c)(1)(A).
- 5 See *generally* Program Integrity: Gainful Employment, 84 Fed. Reg. 31,392 (July 1, 2019).
- 6 <https://www.govinfo.gov/content/pkg/FR-2021-12-08/pdf/2021-26571.pdf>
- 7 Estimate based on IRS data from 2006-07 reported in Cellini & Turner (2019).
- 8 E.g., in the College Affordability Act (H.R. 4674) put forward by House Democrats in 2019. <https://www.congress.gov/bill/116th-congress/house-bill/4674/text>.
- 9 E.g., Newcomer, K. and Triplett, T. (2015). Chapter 14, "Using Surveys" Handbook of Practice Program Evaluation, 4<sup>th</sup> ed. Edited by K. Newcomer, H. Hatry, J. Wholey, Jossey-Bass. <https://www.wiley.com/en-us/Handbook+of+Practical+Program+Evaluation%2C+4th+Edition-p-9781118893609#content-section>
- 10 <https://fsapartners.ed.gov/sites/default/files/attachments/GainfulEmploymentInfo/standards.pdf>
- 11 34 C.F.R sections 668.406(a), 668.409(a)(5).
- 12 <https://www.irs.gov/businesses/small-businesses-self-employed/tip-recordkeeping-and-reporting>
- 13 Slemrod, Joel. 2019. "Tax Compliance and Enforcement." *Journal of Economic Literature*, 57 (4): 904-54.
- 14 In opposition to the 2014 GE Rule, a report by Bettinger (2014) titled, "Imputation of Income Under Gainful Employment," (Stanford University, May 26, 2014) mistakenly inflates SSA earnings by 50% to adjust for underreporting of tips by cosmetologists in SSA earnings (see end-note iv). His adjustment mixes up the value of tipped income and total income. In so doing, he essentially assumes all of a cosmetologists' earnings would come from tips and that all of those earnings are underreported by 50%. This contradicts his own earlier points that 40% of tipped income is in fact already reported (if this is true, only 60% of the 20% or so of tipped income should be missing, according to his own figures). Further, he reports that only 60% of cosmetologists and barbers report significant income in tips, making his adjustment far too large. We develop and describe more plausible adjustments in the next sections.
- 15 Available at <https://studentaid.gov/data-center/school/ge#debt-to-earnings-de-rate-data>.
- 16 We are able to infer the alternate earnings values, since debt information was provided by the Department of Education and remained unchanged.
- 17 Calculated as: (Debt/New DE rate)\*100 = Alternate Earnings
- 18 Mazur, M. and A. Plumley, (2007) "Understanding the Tax Gap" National Tax Journal, 60(3). <https://www.journals.uchicago.edu/doi/pdf/10.17310/ntj.2007.3.14>.
- 19 <https://www.irs.gov/newsroom/irs-releases-new-tax-gap-estimates-compliance-rates-remain-substantially-unchanged-from-prior-study>
- 20 <https://www.irs.gov/pub/irs-pdf/p1415.pdf>
- 21 <https://www.epi.org/publication/waiting-for-change-tipped-minimum-wage/>
- 22 Numbers subject to rounding error—see table 4 for exact values
- 23 <https://www.treasury.gov/tigta/auditreports/2018reports/201830081fr.pdf>
- 24 The Net Misreporting Percentage is the net misreported amount as a ratio of the sum of the absolute values of the amounts that should have been reported expressed as a percentage.
- 25 This value aligns with one discussed by Bettinger (2014).
- 26 <https://www.payscale.com/tipping-chart-2012>
- 27 <https://www.payscale.com/tipping-chart-2012>