Differences in Rural and Urban PA 529 Education Savings Accounts, 2018-2022

January 2023

The Center for Rural Pennsylvania analyzed anonymized data from the Pennsylvania Treasury Department to evaluate trends in its post-secondary education savings accounts, also known as PA 529 accounts. This report examines differences between rural and urban Pennsylvania beneficiaries in the amount of savings, consistency of contributions, and types of accounts opened.

Key Findings

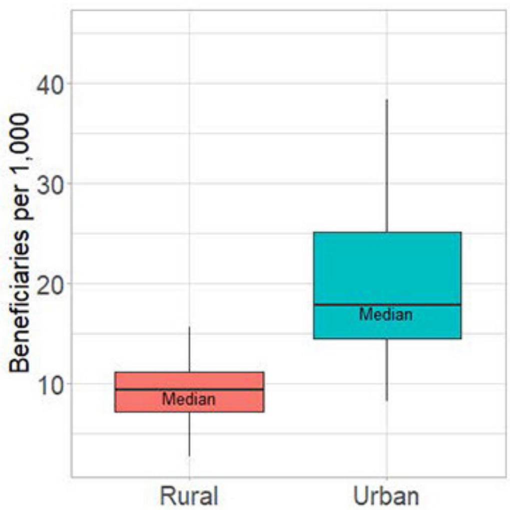
- Education savings in PA 529 accounts are more highly concentrated in urban counties.
- More than 60 percent of all contributions in PA 529 accounts between January 2018 and March 2022 went to Investment Plan accounts in urban counties.
- A sharp increase in contribution amounts occurred in the third and fourth quarters of 2021, with Investment Plan contributions rising more than 30 percent from inflation-adjusted prior-year values.
- Rural beneficiaries received, on average, $56 less per quarter than their urban counterparts - even after controlling for income, educational attainment, and age.

Introduction

The cost of college and other post-secondary education has been increasing steadily for years. According to the National Center for Education Statistics (2022), private, nonprofit, 4-year institutions saw an 18 percent increase, on average, in the cost of tuition between 2010-11 and 2020-21. These increases make savings important to families who would like to provide affordable access to higher education for their children.

To provide an opportunity for Pennsylvanians to save for future post-secondary education, the Pennsylvania Treasury Department manages the state-sponsored PA 529 College and Career Savings Program, also known as "529 accounts," named for the section in the Internal Revenue Code where they are authorized. The two different savings account plans in the program are the Guaranteed Savings Plan (GSP) and the Investment Plan (IP). Accounts are opened on behalf of a particular beneficiary for explicit use in education spending but must be maintained and controlled by an adult. Both plans are state tax-deductible and generate earnings that are tax-free at the state and federal levels. The IP operates more like a standard investment account and growth is based on the performance of an investment portfolio selected by the account holder. The GSP, in contrast, is managed by the Pennsylvania Treasury and provides a return on savings based on inflation of college tuition prices. From January 2018 to March 2022, Pennsylvanians contributed more than $2.5 billion to these accounts for beneficiaries throughout the Commonwealth and the country.

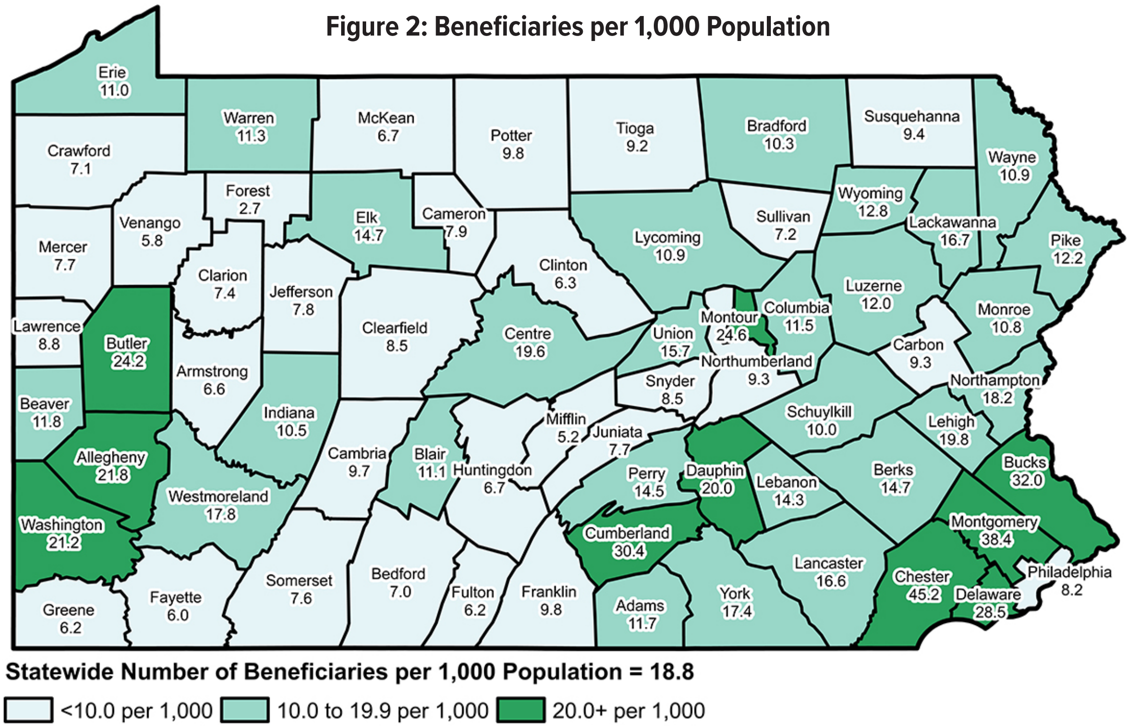
Figure 1: Beneficiaries per 1,000 in Rural and Urban Pennsylvania



Accounts by County

As of March 2022, there are more than 244,000 beneficiaries of PA 529 accounts in Pennsylvania. Fifty-seven percent of the beneficiaries had IP accounts opened on their behalf, and 43 percent had GSPs opened on their behalf. Eighty-four percent of all beneficiaries live in urban counties, but as of the most recent decennial census, urban counties represent 74 percent of the total Pennsylvania population. As a proportion of the population, there are nearly double the number of urban beneficiaries per 1,000 people

Figure 2: Beneficiaries per 1,000 Population



(21.4) compared with rural beneficiaries (11.5) per 1,000. The relative difference in the two populations is statistically significant, suggesting that there are more urban beneficiaries of PA 529 accounts per capita than rural beneficiaries. This difference can be seen in Figure 1, which shows the distribution of beneficiaries per 1,000 by county. The red box-and-whisker diagram shows the range of beneficiary concentrations of rural counties. Half of rural counties had between eight and 11 beneficiaries for every 1,000 residents (as indicated by the box). The top whisker shows that 95 percent of rural counties had fewer than 16 beneficiaries per 1,000 residents. This is well below the distribution of urban counties, which are concentrated between 15 and 25 beneficiaries per 1,000 residents.

Figure 2 also shows that the highest concentration of accounts is in urban counties, particularly those surrounding Philadelphia and Pittsburgh. Only two rural counties contain more beneficiaries as a proportion of the population than the urban average: Montour and Butler. These counties also have some of the highest educational attainment rates among rural counties in the Commonwealth, with more than 30 percent of adults over age 25 receiving a bachelor's degree or higher.

The difference between average accounts per capita in rural and urban counties remains significant when considering the type of PA 529 account. Urban coun-

Figure 3: Educational Attainment and Account Uptake by County

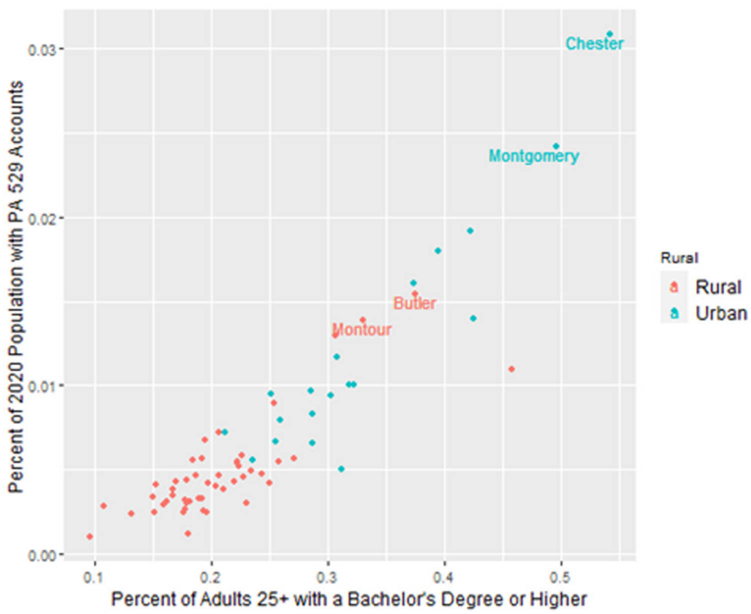


Figure 4: Percent of Rural Contributions by Plan Type, January 2018-March 2022

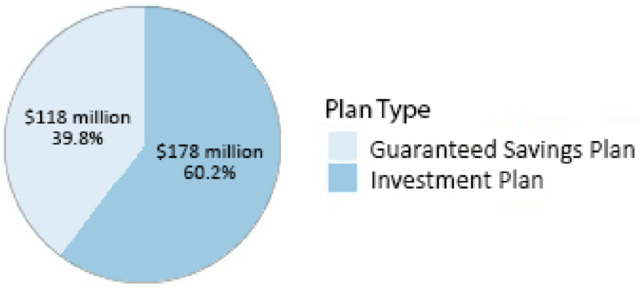
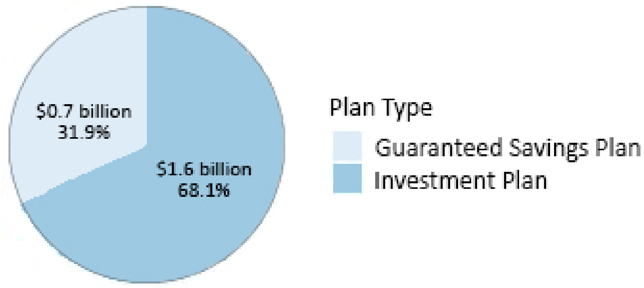


Figure 5: Percent of Urban Contributions by Plan Type, January 2018-March 2022



ties surpassed rural counties in the number of account beneficiaries in both GSP and IP accounts as a percentage of the population. In both rural and urban counties, IP accounts were more prevalent than GSPs. In urban counties, there were 50 percent more IP accounts (124,104) than GSPs (81,371). Plans were more evenly distributed in rural Pennsylvania, but IP accounts (19,930) were still more common than GSP accounts (18,931).

IP accounts also saw significantly more savings between January 2018 and March 2022. Among Pennsylvania beneficiaries, IP accounts represented more than two-thirds of total contributions ($1.75 billion) compared to GSPs ($850 million). Less than 12 percent ($295 million) of contributions were in accounts for rural beneficiaries. The remaining 88 percent were contributed to accounts for urban beneficiaries, with more than 60 percent ($1.57 billion) being contributed to IP accounts for urban beneficiaries.

Figure 6: Distribution of Total 529 Contributions, January 2018-March 2022

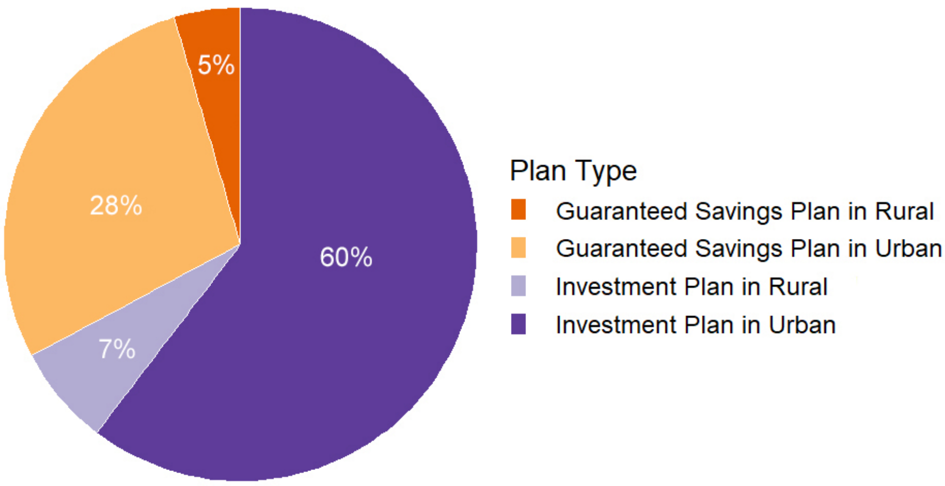
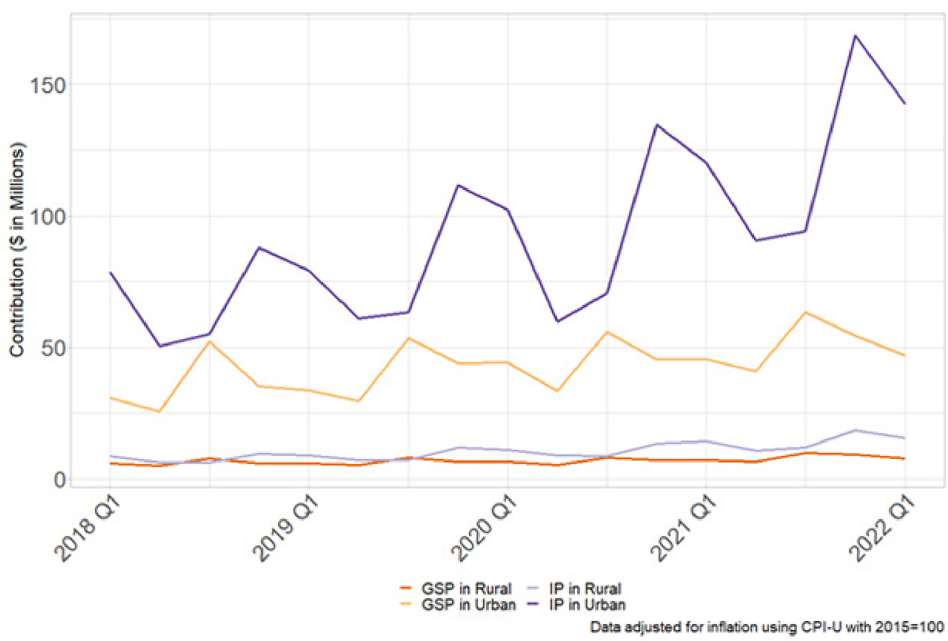


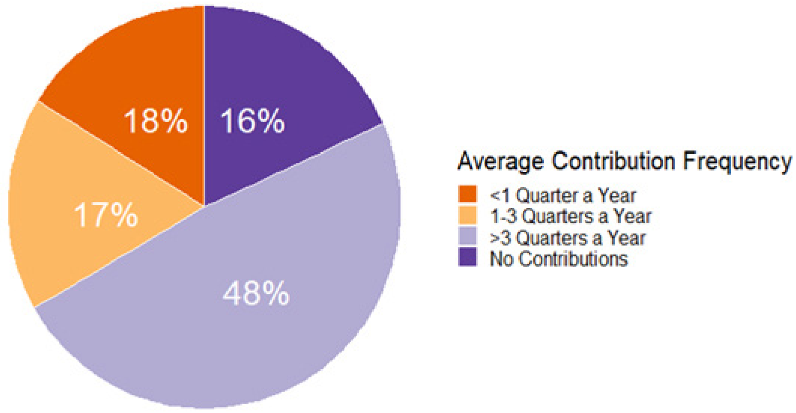
Figure 7: Total Inflation-Adjusted 529 Account Contributions by Quarter



Saving Trends

Between January 2018 and March 2022, 48 percent of accounts received contributions in at least three quarters over a one-year period. Sixteen percent of accounts received contributions in less than one quarter during a single year, and 17 percent of accounts received contributions in at least one to three quarters during a single year. The remaining 18 percent of accounts received no contributions between January 2018 and March 2022. While a portion of those accounts were actively being used to pay for education (3 percent of all accounts), 14 percent of all accounts had no contributions or withdrawals during the evaluation period. In total, most accounts (65 percent) received at least annual contributions. These trends were consistent regardless of whether a beneficiary lived in a rural or urban county, suggesting that savings strategies are similar among rural and urban account holders, even if dollar amounts vary.

Figure 8: Percent of Beneficiaries by Consistency of Contributions



There were significant seasonal trends in when accounts were likely to receive contributions, especially in IP accounts. Among accounts in the dataset, there was a consistent 4 percentage point increase in account contributions in the fourth quarter compared with other quarters, consistent across both rural and urban accounts. In all quarters except the fourth, a smaller percentage of IP accounts tended to receive contributions compared with GSPs. GSPs saw markedly fewer contributions in the first and second quarters relative to the third and fourth.

Between 2018 and 2021, the percentage of IP accounts receiving contributions in a quarter increased 2 percentage points, from 56 percent, on average, in 2018 to 58 percent in 2021. However, the average rate of quarterly account participation declined by 2 percentage points for GSPs, from 59 percent in 2018 to 57 percent in 2021. Both changes are statistically significant, suggesting

Figure 9: Percent of Accounts with Contributions by Quarter

that the relative use of accounts is changing in favor of IPs.

As shown in Figure 9, the first quarter of 2022 saw higher participation in IP accounts than GSPs, the first-time participation rates were higher for IPs in January through March.

Further research could be conducted to determine what leads to these changes in account participation, but these data provide clear evidence that account holders do not invest at the same rate throughout the year.

Figure 10: Year-over-Year Percent Change in Account Contributions, Q3

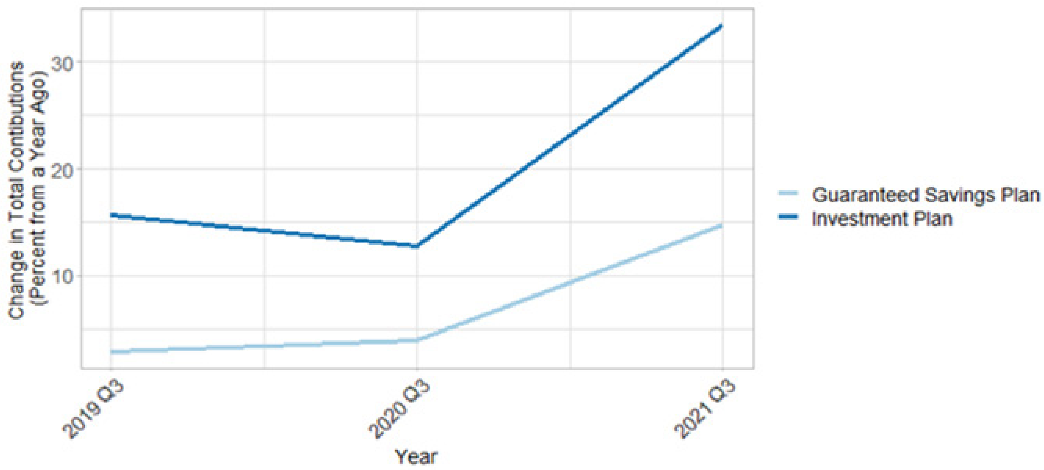
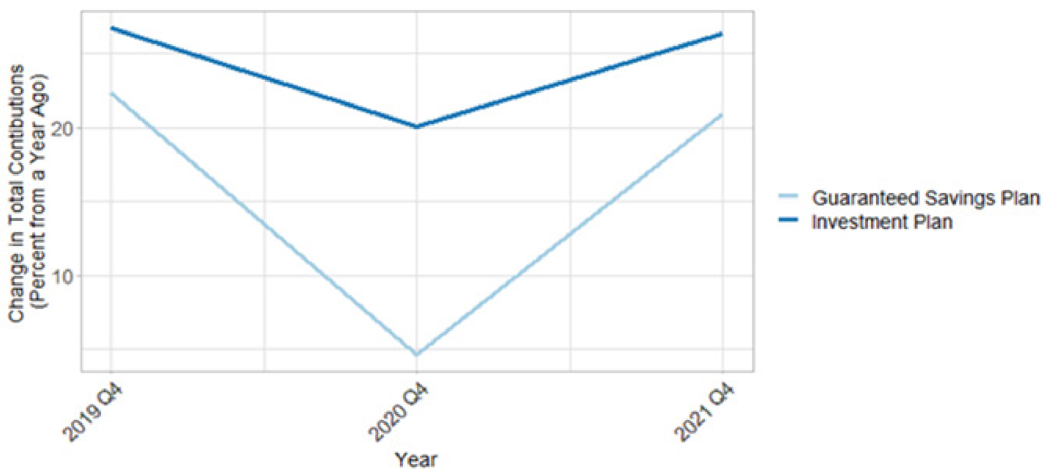


Figure 11: Year-over-Year Percent Change in Account Contributions, Q4



Child Tax Credit Impact

In July 2021, the U.S. Department of the Treasury made a change, as directed by the American Rescue Plan, to offer advances on the Child Tax Credit (CTC). This change allowed parents making less than $400,000 filing jointly or $200,000 for other family statuses to receive part of their CTC reimbursement as monthly checks.

This change went into effect in July 2021 and expired in December of the same year after not being renewed by Congress. As this period fell squarely in the period of analysis, it was important to consider whether this policy change had any influence on saving habits during the six-month period it was active.

Data suggest that third- and fourth-quarter contributions increased at a faster rate than in previous years (See Figures 10 and 11).

Both account types in rural and urban counties saw significantly increased contributions in the third quarter of 2021. IP accounts in both rural and urban Pennsylvania saw contributions increase more than 30 percent compared to 2020 contribution levels, even after adjusting for inflation. Similar trends can be noted in the fourth quarter, where IP growth increased in excess of 25 percent.

GSPs also saw significant acceleration in savings, with a more than 20 percent increase in total contributions for both rural and urban accounts compared with the previous year.

While some of this increase may well have been the result of changes in the CTC, there are not sufficient data to determine conclusively whether the policy change contributed to the increase in PA 529 account savings.

Factors Influencing Contributions

The Center evaluated what factors influenced contributions to a PA 529 account using a fixed effects regression model (See the Appendix). The analysis of contributions determined that a number of environmental and economic factors were relevant to the size of contributions, even when accounting for seasonal trends. While individualized economic data were not available for account holders, the average wage and unemployment rate in the county where the beneficiary lived were both strong indications of the size of a contribution. The model suggests a $1,000 increase in the quarterly wage was related to a $296 dollar increase in average contributions in that county, regardless of other characteristics.

County educational attainment was a major predictor of savings, with counties with a 1 percent increase in adults with bachelor's degrees or higher contributing an additional $635 per quarter, on average, to PA 529 accounts. Beneficiary age also played a part, with accounts for beneficiaries under age 6 receiving $42 dollars less, on average, than beneficiaries age 6 or older, on average. As noted earlier in the report, IP accounts tended to receive higher contributions, with a GSP being related to a $260 dollar reduction in average contributions, independent of age, time, or geography.

Lastly, even when accounting for economic factors and age, there was a strong indication that rural accounts received lower contribution amounts than urban accounts. Based on the sample, accounts for rural beneficiaries received $56 less, on average, than accounts for urban beneficiaries.

Implications and Future Steps

The Pennsylvania Treasury Department recognizes the gap in PA 529 use between urban and rural areas. Since January 2021, the department has increased outreach, with a focus on rural areas, to raise awareness of its consumer programs. For example, the department has hired new staff to increase community outreach, cut fees for the PA 529 program, run a statewide promotion, and met with local leaders to highlight the 529 program.

In addition, the department created the at-birth Keystone Scholars program, which provides $100 for education expenses to every baby born to Pennsylvania residents. More information on this program is available at www.pa529.com/keystone/.

There are several policy steps that could enable more accurate measurement of 529 account use. Protecting beneficiary privacy, while vital for the financial and social well-being of beneficiaries and account holders, required limiting additional personally identifiable information from this analysis. However, more precise trends in saving could be evaluated internally by Pennsylvania Treasury or other appropriate agency by analyzing contributions in combination with tax record data from the Department of Revenue. Such an analysis would create a more accurate picture of the resources available to families with 529 accounts.

While collating data in this manner might require legislative action, it would allow for much clearer insights and trends in 529 account use and savings by industry, income, and other economic and demographic factors. Alternatively, Pennsylvania Treasury could conduct a survey of current account holders to collect individualized demographic or economic indicators that were represented with county-level data in this report, which could lead to more refined analysis.

Conclusions

These data show significant evidence that urban account beneficiaries have more savings for post-secondary education than rural account beneficiaries. While savings frequency is relatively consistent between rural and urban areas, contribution amounts are significantly lower in rural counties, even when controlling for county-level economic indicators and beneficiary age.

Part of this may have to do with the educational attainment rate in counties: the two rural counties with the highest rate of 529 accounts relative to population (Montour and Butler counties) also have the highest levels of bachelor's degree or greater educational attainment among the Commonwealth's adult population. Contributions increased significantly in the third and fourth quarters of 2021 relative to previous years, but more research is needed as to whether Child Tax Credit advances or other policy changes contributed to those increases.

Data Selection and Methods

All data evaluated by the Center were de-identified by the Pennsylvania Treasury Department to maintain beneficiary privacy. All 529 accounts are linked to a single beneficiary. Multiple account holders can open separate accounts for a single beneficiary. Contribution and withdrawal data were provided, aggregated at the quarterly level from the first quarter of 2018 through the first quarter of 2022.

In addition, the Center had access to the year of birth, home ZIP Code, type of savings plan, and account opening date for each beneficiary. For this analysis, the sample of accounts was limited to beneficiaries with Pennsylvania ZIP Codes. Beneficiaries do not have to live in Pennsylvania to take part in the program. For the analysis, the Center used its definition of rural and urban counties as follows: a county is rural when the number of people per square mile within the county is fewer than 291; all other counties are urban.

The Guaranteed Savings Plan requires either the beneficiary or the account owner to be a Commonwealth resident and Investment Plans have no residency requirements. To focus on active accounts, beneficiaries older than 30 (approximately 3 percent of all accounts) were also excluded. Removing these beneficiaries limited the sample to 244,336 accounts, 91 percent of all accounts.

County-level indicators were added to represent economic conditions for account holders. Wage data are from the Pennsylvania Department of Labor and Industry (DLI) Quarterly Census of Employment and Wages. Quarterly unemployment data were averaged from monthly unemployment in DLI's Local Area Unemployment Statistics. Data on county-level educational attainment were collected by the Census Bureau's American Community Survey, 2016-2020.

Reference: National Center for Education Statistics (2022). Price of Attending an Undergraduate Institution. Condition of Education. U.S. Department of Education, Institute of Education Sciences. Retrieved August 8, 2022, from https://nces.ed.gov/programs/coe/indicator/cua.

Appendix

529 Account Contribution Analysis

	Dependent variable:
	Contributions
Rural or Urban	-56.175***
	(12.225)
Plan Type: Investment Plan	259.993***
	(8.052)
Age	1.114
	(0.820)
Beneficiary Under 6	-41.845***
	(13.255)
% Bachelor's Degree or Higher	634.932***
	(71.338)
Constant	56.296
	(36.315)
Observations	3,232,723
R^2	0.001
Adjusted R^2	0.001
Residual Std. Error	7,043.586 (df = 3232709)
F Statistic	335.554*** (df = 13; 3232709)
Note:	*p<0.1; **p<0.05; ***p<0.01

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