Evaluating the design of income-contingent contribution schemes for financing higher education in Chile

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December 2025

Executive summary

1 Context and motivation

Over the past two decades, Chile has expanded access to higher education primarily through student-based financing instruments. While this approach contributed to rapid growth in enrolment across universities, professional institutes (IP), and technical training centres (CFT), it has also generated significant challenges for students, institutions, and the state. The State-Guaranteed Loan (Crédito con Aval del Estado, CAE), introduced in 2006, became the dominant financing instrument for students in higher education not covered by free tuition, but it has been associated with high repayment hardship, persistent default, and rising fiscal costs.

Despite previous reforms, the CAE system continues to impose substantial financial pressure on graduates with low or unstable earnings, particularly those who do not complete their studies or who move in and out of the formal labour market. At the same time, the system has proven fiscally problematic. Public expenditure through interest subsidies, loan buy-backs, and the execution of state guarantees has increased steadily, while recovery rates remain low by international standards. These dynamics have raised concerns not only about equity and repayment burdens, but also about the long-term sustainability of Chile's higher education financing model. The other (much smaller) student loan system, Fondo Solidario de Crédito Universitario (FSCU), has also created fiscal problems for universities that administer and guarantee these loans.

In response to these challenges, the Chilean government has proposed a reform to replace the current student loan system. The reform created a new public financing instrument for higher education, the *Nuevo Instrumento de Financiamiento Público para la Educación Superior* (FES), accompanied by a plan for the reorganisation and forgiveness of existing educational debts. The FES represents a structural shift away from bank-based student lending towards a publicly managed system of income-contingent contributions by beneficiaries.

Whilst the FES proposal has been the key focus of the current policy debate, there has been limited quantitative evidence on its expected financial and distributional effects. In particular, before this study, there was no ex-ante assessment of how the FES would perform in terms of long-term resource recovery, progressivity, and fiscal sustainability, nor how it would compare with a standard income-contingent loan (ICL) under comparable parameters. This report seeks to fill this gap by providing the first comprehensive evaluation of the FES under the parameters established in the bill.

2 The FES: core design and policy logic

The FES is an income-contingent graduate contribution scheme. It represents a shift away from bank-based, state- or university-guaranteed loan systems, such as the CAE and the FSCU, towards a publicly managed financing model that involves no individual student debt and no default. Under FES, the state finances the cost of higher education upfront by transferring the regulated tuition directly to participating institutions whilst students are enrolled. In contrast to loan-based systems, students do not inherit an individual debt, rather a capped repayment obligation linked to the number of years their studies were funded by FES.

Once they leave higher education, either through graduation or interruption of studies, beneficiaries contribute a capped share of their labour income for a limited period of up to 20 years. Contribution rates are capped at a proportion of earnings (going from 0% to 8% of their after tax earnings). Repayments only start when earnings exceed a threshold of 7.5 UTA (approximately £5,000 p.a.), and are automatically adjusted to the individuals' current economic circumstances, ensuring that no beneficiary ever faces repayment hardship. Contributions are collected through employer withholding, in a manner similar to income tax and social security contributions, and hence are automatically suspended during periods of low income or periods not in the formal labour market, providing built-in insurance against labour market shocks.

The bill further specifies that contribution duration is linked to time students access FES: beneficiaries contribute two years for each semester of financing received, with coverage extending up to the formal duration of the degree programme and, in cases of delayed completion, to 50% of the regulated tuition for one additional year. The FES also allows one change of degree, with total coverage capped at 1.5 times the duration of the longest programme financed. To contain costs and prevent excessive individual contributions, the bill establishes that participating institutions may not charge additional tuition or fees to FES beneficiaries, except for students in the highest income decile. Further no beneficiary may contribute more than 3.5 times the cost of their degree. The overall design draws on and extends key features of long-standing income-contingent financing systems implemented in countries such as Australia, the United Kingdom, and New Zealand, which have been operating for almost 40 years.

3 Data and methodology

The analysis presented in this report is based on detailed administrative data covering higher education enrolment and graduation, tuition fees, and post-study earnings trajectories in Chile. These data are used to construct a microsimulation model that follows individuals over time and estimates their contributions under the FES once they enter the labour market.

The analysis relies on a microsimulation framework that constructs a synthetic future cohort of FES beneficiaries in order to estimate the expected impacts of the reform. The starting point is a cohort of students who entered higher education in 2017, for whom detailed administrative information on enrolment, institution type, degree characteristics, and completion outcomes is available. This cohort is then reweighted to match the observed distribution of enrolment by degree and institution in 2025 updated for expected student numbers by type of institution in 2027, ensuring that the simulated population reflects the likely structure of the 2027 higher education system. We then identify students who previously applied for financial aid and who, under the rules of the FES, meet the eligibility criteria to receive this benefit.

Future earnings trajectories are simulated using a combination of age–earnings profiles estimated from the general population and a copula-based approach to model income mobility over time. Earnings are predicted as a function of gender, age, type of institution, and completion status, allowing the model to capture heterogeneity in mobility in the labour market by group and age.

The evaluation reports the financial and distributional outcomes generated by the microsimulation model at both the individual and group level. For this analysis, we assume that the institutions currently participating in the State-Guaranteed Loan and Free Education schemes will also participate in the FES. Among the outcomes we estimate are income trajectories and the number of years of contribution to the FES, repayment (or contribution) rates at the individual and overall level (state recovery rates), the implied fiscal subsidy or surplus per borrower, repayment burdens (measured as loan payments as a share of income), and implicit interest rates derived from each borrower's total contributions. These outcomes are analysed across key sources of heterogeneity in the higher education system, including educational trajectory (graduate versus dropout by degree-institution type), gender, and position in the income distribution (deciles and ventiles). The report explores a range of sensitivity analyses covering both instrument design parameters and macroeconomic assumptions. To benchmark the performance of the FES, the study also simulates an income-contingent loan (ICL) under aligned repayment parameters, allowing a like-for-like comparison between a contribution-based design and an individual debt-based repayment scheme.

4 Main results

The simulations show that, once the system reaches its long-run steady state and is fully operational, the FES would be taken up by around 97,000 students per year, including those who request the FES after exhausting their entitlement to the free education policy.

Under the parameters defined in the bill, the FES achieves a high level of recovery of the initial outlay required to fund FES. Simulations indicate that aggregate recovery rates for the state for the FES scheme range between 94% under a 1% real wage growth assumption and 105% under a 2% real wage growth assumption. These recovery levels are substantially higher than those observed under Chile's current student loan system and place the FES at the upper end of recovery rates reported for mature income-contingent financing systems internationally. Assuming an average real wage growth of 2%, students contribute on average 102% of the cost of their degree, based on regulated tuition rates, which corresponds to approximately CLP 11.1 million per student. As a result, at the individual level, the state obtains an average surplus of around CLP 586 thousand per student.

The results show that the FES is progressive and generates significant redistributive impacts that enhance equity within the system. The contribution mechanism should help mitigate persistent gender gaps in default and repayments that exist under the CAE system. On average, female graduates repay CLP 10.4 million, compared with CLP 13.3 million for male graduates. These differences translate into reduced repayment burdens for women compared to men: men face an average repayment burden of 4.26% of monthly earnings, while for women it is 3.81%. These differences arise from the income-contingent structure of the system, which automatically adjusts contributions to current earnings. As a result, the FES reduces gender disparities in repayment burdens relative to loan-based systems, while maintaining high aggregate recovery rates for the state.

The progressivity of FES is not only observed across gender but also across academic trajectories. On average, dropouts contribute substantially less than the cost of their studies, paying between

0.37 times the degree cost for female students from CFTs and 0.69 times for male students from IPs. These lower contributions are financed through cross-subsidies generated primarily by graduates, particularly high-earning male graduates, reinforcing the redistributive (insurance) features of the system.

Among the alternative policy designs explored in the simulations, we analyse the effects of reducing the cap on total lifetime contributions under the FES. The bill currently sets this cap at 3.5 times the cost of the degree; however, this level may be considered high and could discourage participation among students in the upper income deciles because of the high implicit interest rate. Reducing the cap lowers aggregate recovery: for example, when the cap is reduced to two times the degree cost, the recovery rate falls to 91.2%. To offset this reduction, we propose complementary policy adjustments, including extending the maximum contribution period to 25 years, increasing the grace period to two years, and suspending contributions while beneficiaries are enrolled in postgraduate studies. When these measures are combined with a lower cap, aggregate recovery rises to 101.1%, restoring fiscal sustainability while limiting very high individual contributions (high effective interest rates).

We also examine the implications for institutions in terms of revenues. First, we establish the difference between regulated tuition rates and the real tuition charged by institutions. On average, real tuition is 12.8% higher than the regulated rate.

Second, we estimate copayments across different income deciles. Under the current bill, only students in the 10th income decile may be charged copayments, defined as the gap between the regulated and real tuition rates paid directly to institutions. All FES beneficiaries are funded by the state at the regulated rate and may not be charged real tuition fees. Simulations show that average annual copayments per person reach approximately CLP 1.2 million when applied only to the top decile and decline to around CLP 1.0 million per person when copayments are extended to students in deciles 7 to 10. Overall, copayment under the FES will be substantially lower than those observed under the CAE, as they are based on the regulated–real tuition gap rather than the reference–real tuition gap. Nevertheless, allowing copayments, particularly for lower-income deciles, could negatively affect access to and persistence in higher education, as students would be required to finance these payments out of pocket without access to additional state support.

Third, we estimate the revenues received by institutions from students, including copayment revenues under different policy scenarios, as well as payments made by students who do not fully finance their tuition through the FES or who extend their studies beyond the formal duration.

Finally, we compare the FES with a traditional income-contingent loan calibrated to the same repayment thresholds, contribution rates, and a maximum repayment horizon of 20 years. While the ICL achieves a higher average individual repayment rate (94.2%), its aggregate recovery rate is substantially lower, reaching only 85.0%, which implies an average state subsidy of approximately CLP 1.67 million per student. By contrast, under a version of the FES capped at two times the degree cost achieves an aggregate recovery rate of 91.1%, with average individual contributions equivalent to 86.9% of degree costs and an average state subsidy of around CLP 983 thousand per student.

These differences are also reflected in the implicit real interest rates effectively paid by students under each system. Under the ICL, implicit interest rates are generally positive and relatively flat across groups and academic trajectories, ranging from –4.3% for university dropouts to 1.9% for graduates from CFTs and IPs. Under the FES, implied interest rates are strongly progressive, being negative for low-income individuals and dropouts (for example, around –40% for female CFT dropouts and –24% for female IP dropouts) and positive only for graduates, with the highest rates

observed among male graduates from IPs (3.1%).

As a result, the ICL shifts a larger repayment burden onto lower-income graduates (who have to pay longer under a loan) while limiting contributions from top earners, whereas the FES concentrates a larger share of total contributions among higher-income graduates (as they have to pay longer under FES than with an ICL), allowing it to achieve higher aggregate recovery while reducing repayment burdens for low- and middle-income students. This pattern is illustrated in Figure 1, which shows total repayments by graduate income ventile under an ICL with a 2% interest rate and an FES capped at two times the degree cost. Under the ICL, individuals in the first 11 ventiles among men and the first 13 ventiles among women repay more than under the FES, whereas under the FES the highest payments are concentrated in the top ventiles.

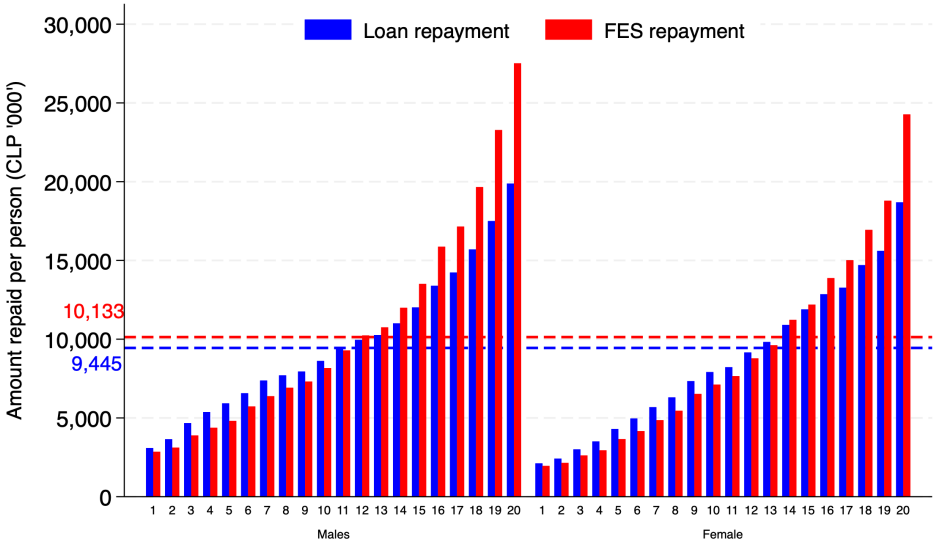

Figure 1: Amount paid by students under the FES capped at 2x versus IC Loan by ventile

5 Conclusions

Taken together, the results indicate that the FES constitutes a financially viable and strongly progressive alternative to Chile's current student loan system. Under the parameters established in the bill, the FES achieves high aggregate recovery rates while substantially reducing repayment burdens for low- and middle-income graduates, women, and individuals with incomplete academic trajectories. The comparison with a standard income-contingent loan highlights that the FES combines higher fiscal sustainability with a more equitable distribution of contributions, shifting a larger share of financing towards high-earning graduates. Overall, the evidence suggests that the FES can improve equity and efficiency, while providing a robust and sustainable scheme for the public funding of higher education in Chile.