Federal Reserve Bank *of* Kansas City

Student Loans in Perspective

13th Annual Oklahoma Homebuyer Education Conference

Edmond, OK

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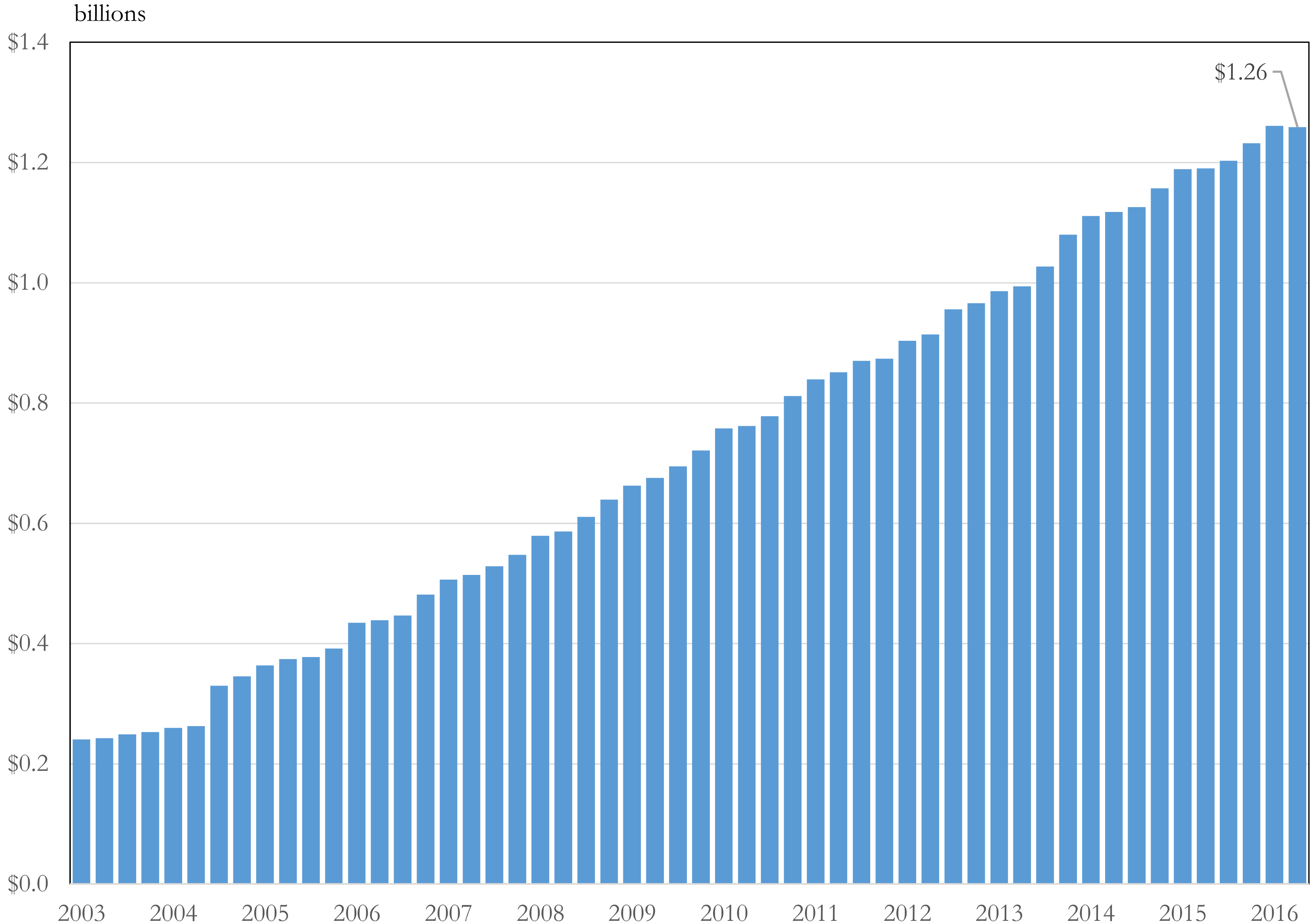
Questions and Answers

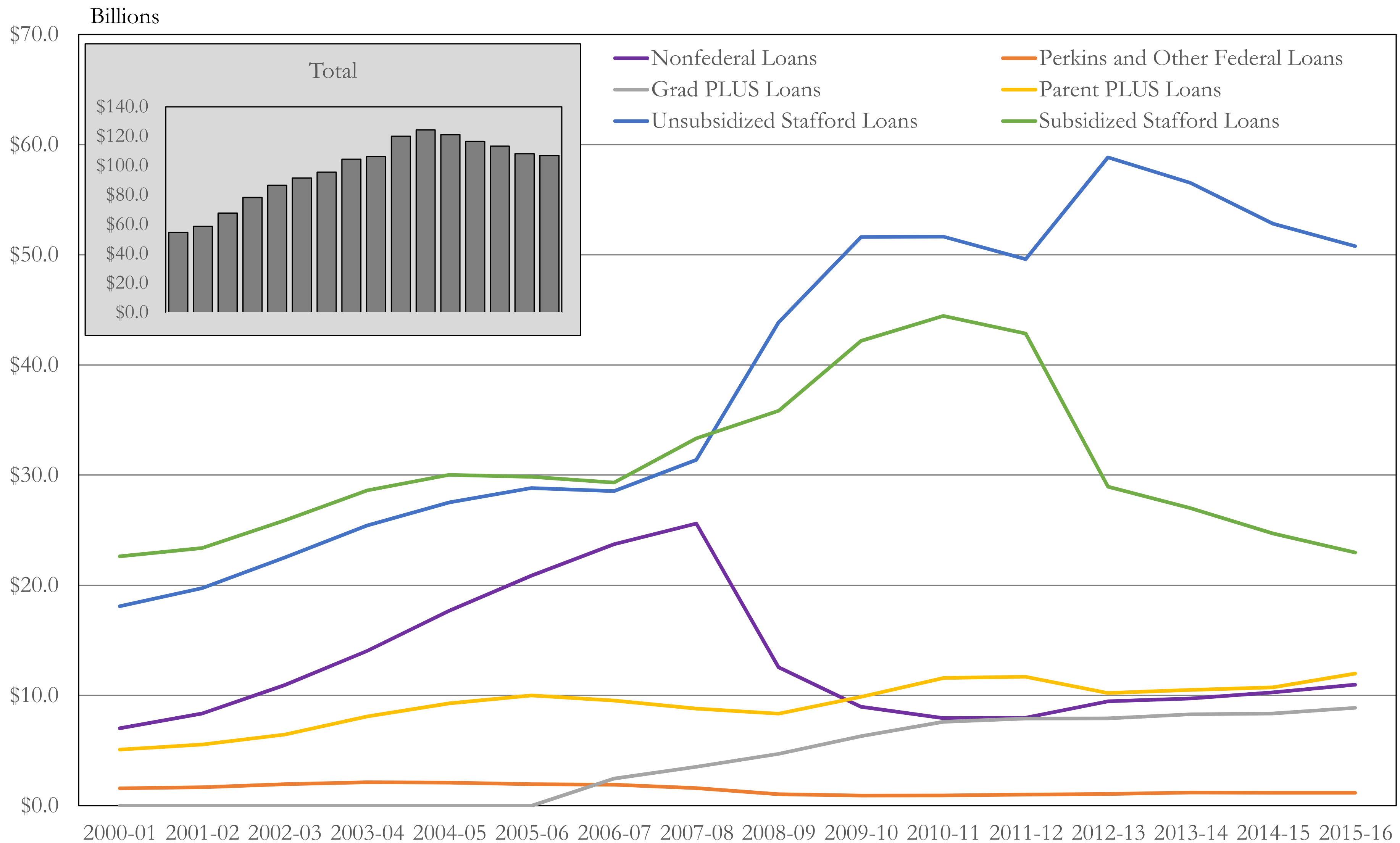
- Is the problem of high debt levels overblown?
- Delinquencies are high relative to other forms of debt, but
  - What is different about student loans?
  - Who is delinquent?
  - How much is delinquent?
- Repayment programs are increasingly taken up as a way to get payment/debt relief

Outstanding student loan debt has leveled off in early 2016



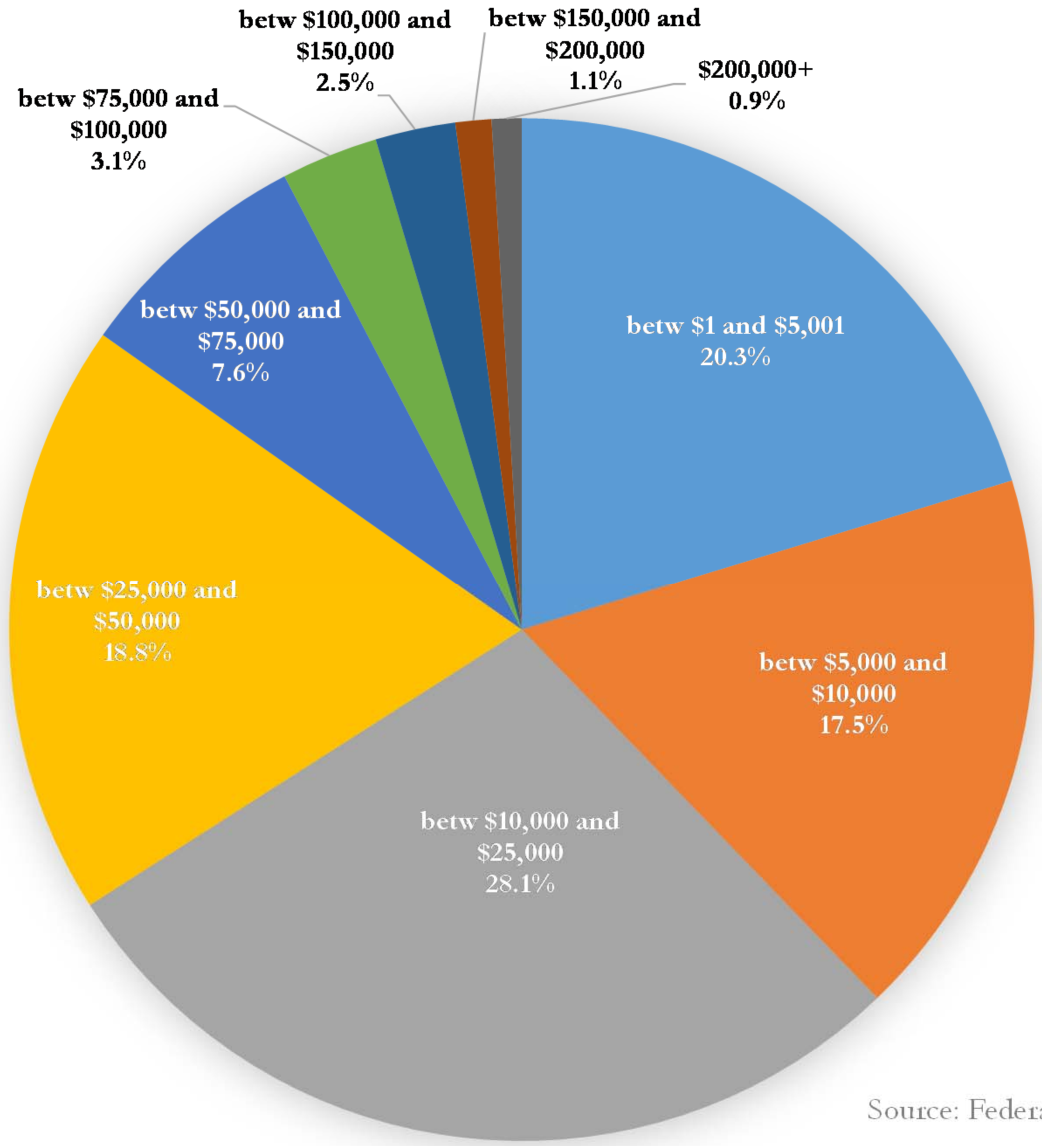
Source: Federal Reserve Bank of New York

Annual student lending has drifted downward

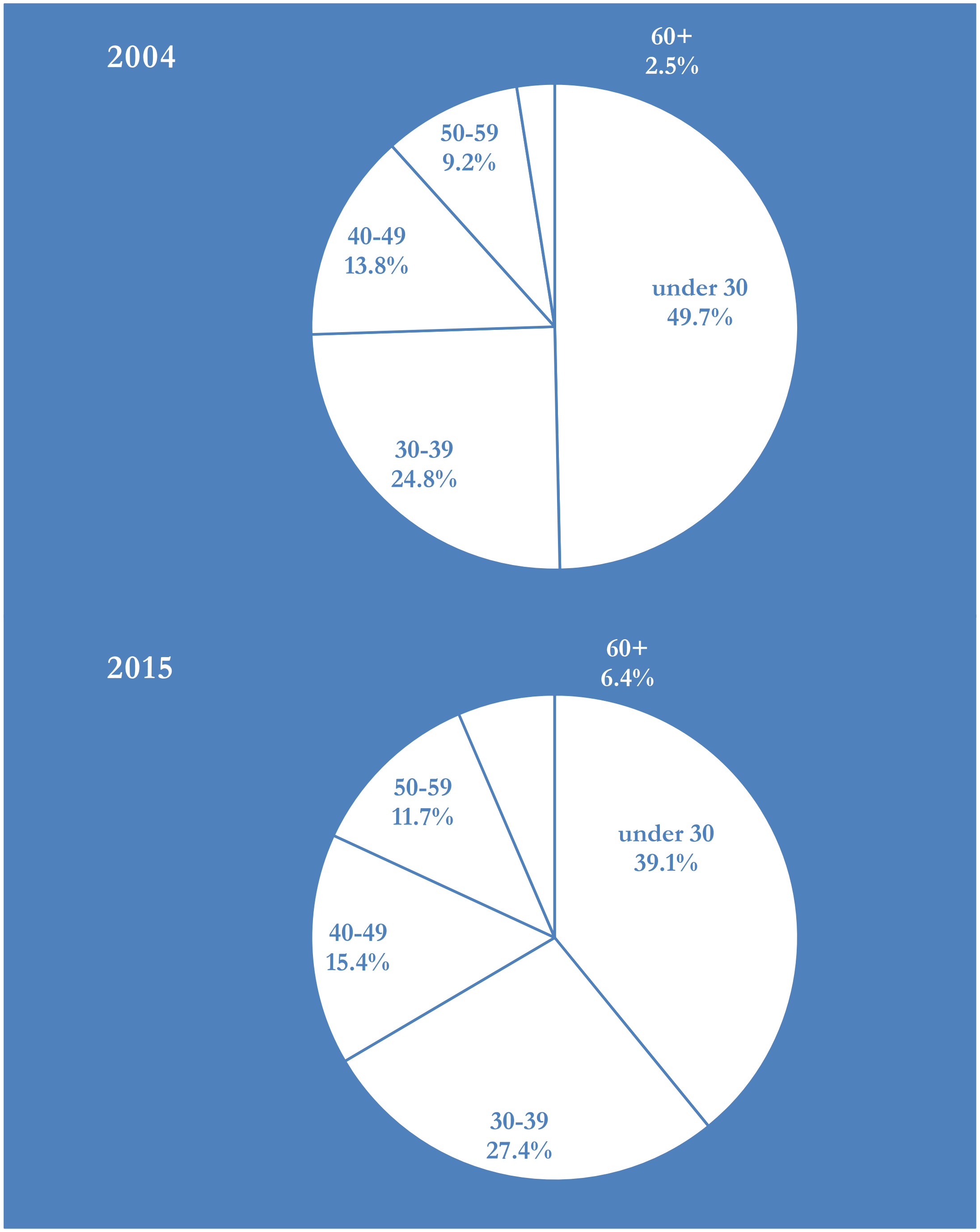


Source: The College Board, *Trends in Student Aid*

Two-thirds of student loan debtors have balances of $25,000 or less



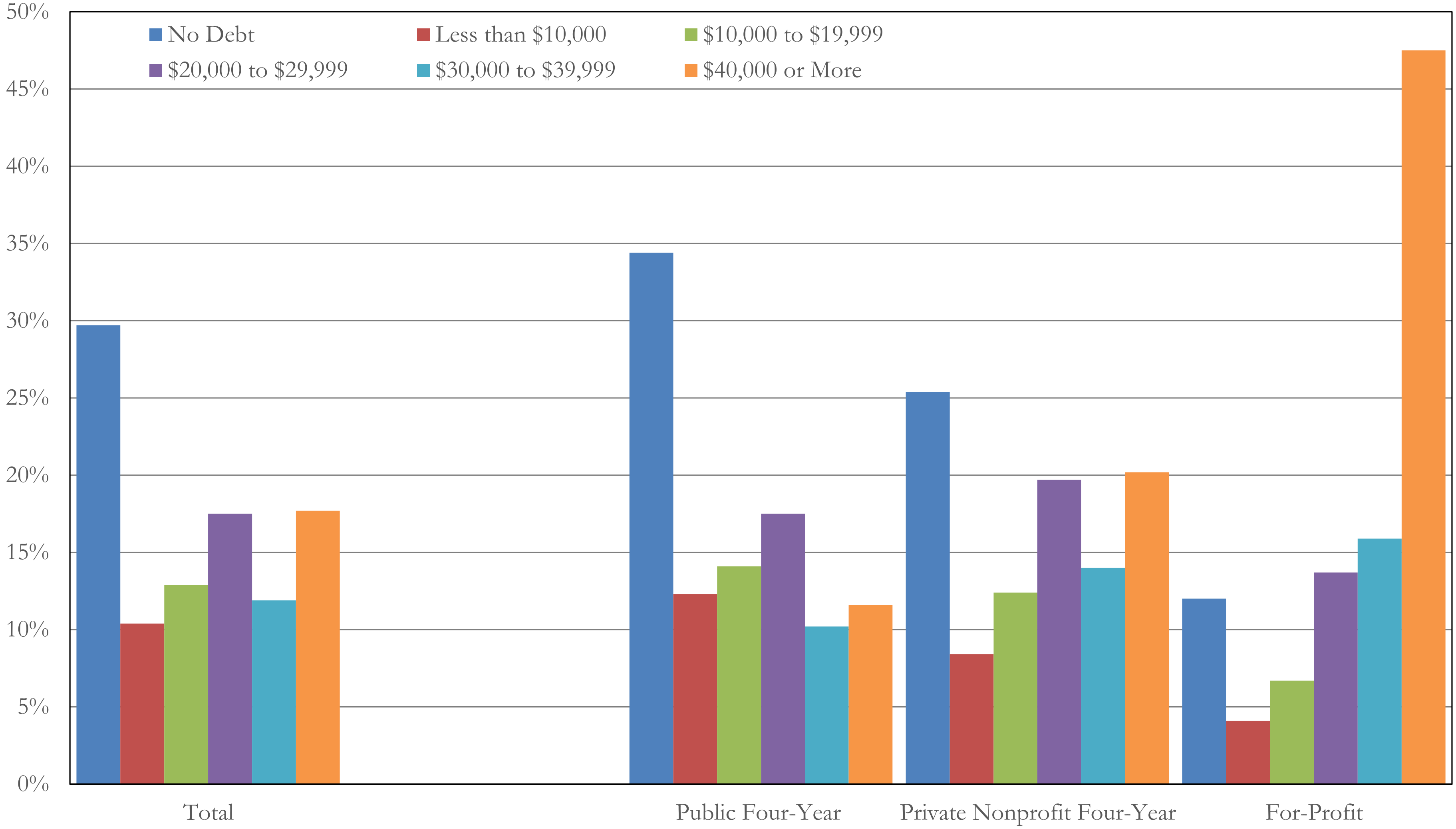
Source: Federal Reserve Bank of New York



Older borrowers are accounting for increasing shares of outstanding student loan debt

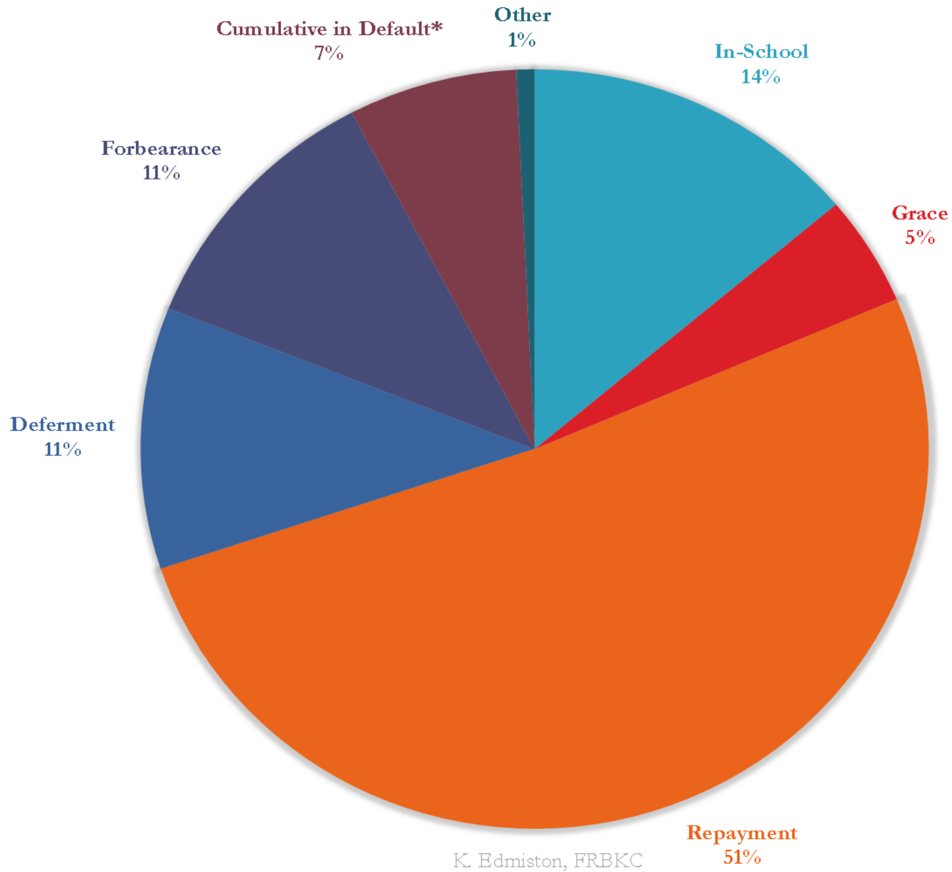
Source: Federal Reserve Bank of New York

71 percent of recent graduates have < $30,000 in student debt (78 percent for public colleges and universities); graduates with large balances disproportionately attended for-profit institutions



Debt Status

- 3.7 million FDLP (direct) loans and 4.3 million FFEL (guaranteed) loans in default
- Cumulative distressed student loan debt $124.8 million
  - Significant proportion of loans not in repayment

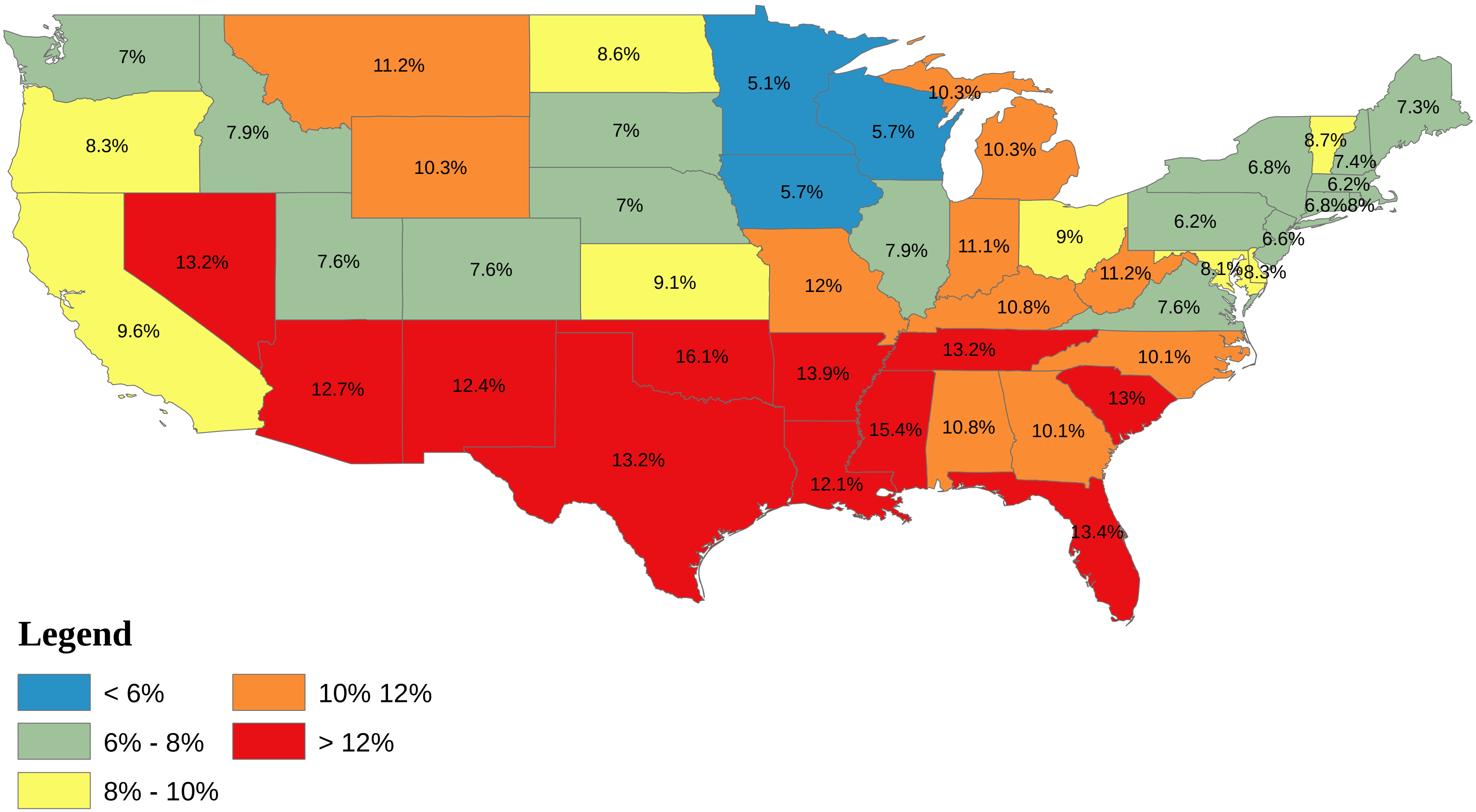


Total: $911.6B
In Repay: $531.3B
Default: 11.9%
Distressed: 23.5%

Issues Driving Delinquency

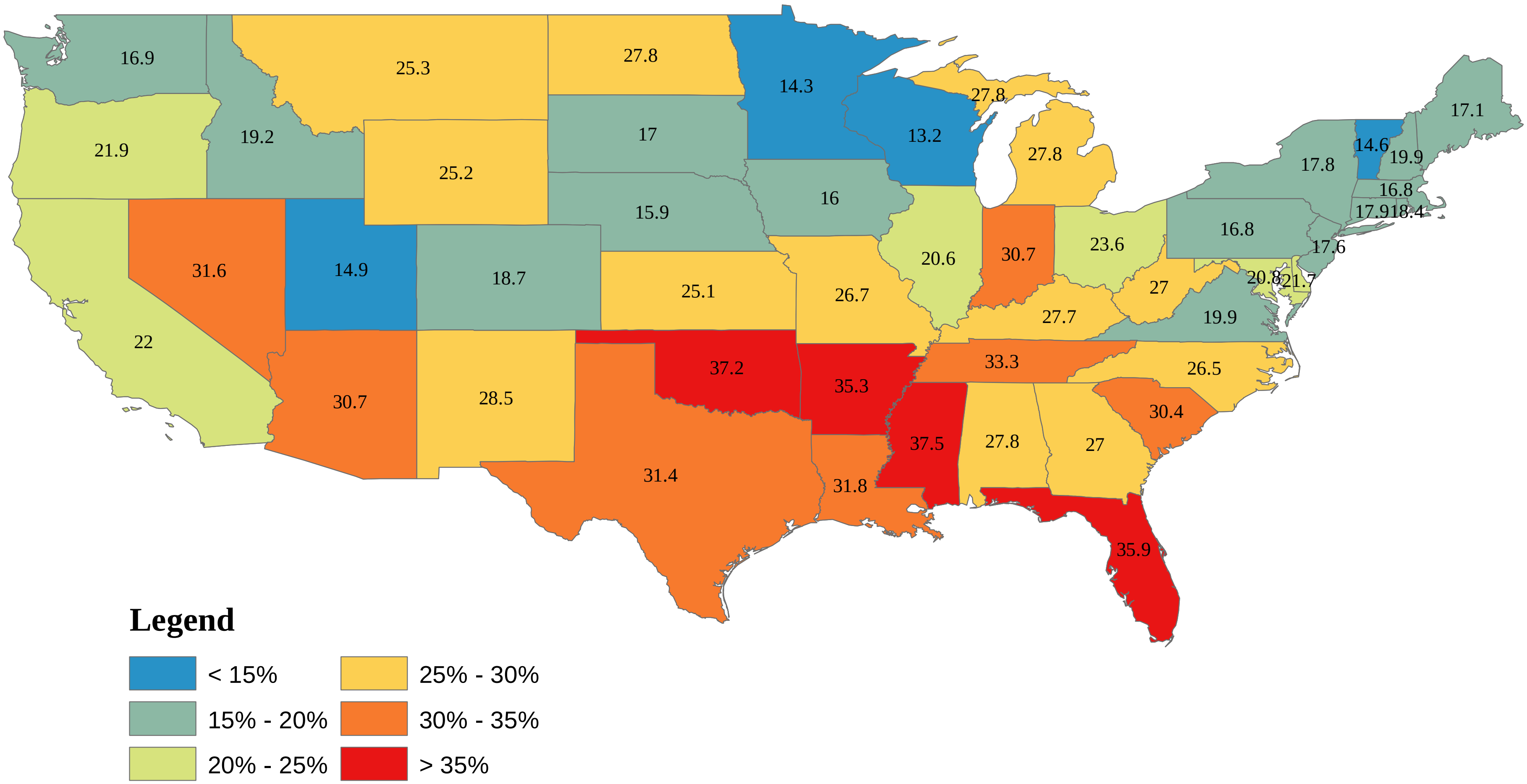
- Economic conditions
  - Most over-due balances for those over 30
  - Unemployment ("real rate?"), esp. for young
  - Underemployment
  - Slower wage and salary growth, esp. for young
  - AP: early in recovery, 50% of young unemployed/underemployed
- Non-completion
  - Much better prospects for completers (buying an asset; lifetime income)
  - Especially high for for-profit (28% completion for-profit, 56% public, 65% private not-for-profit)
- No credit consideration
- Poor borrower information (this is changing)

Overall Student Loan Delinquency Rate (All outstanding loans)



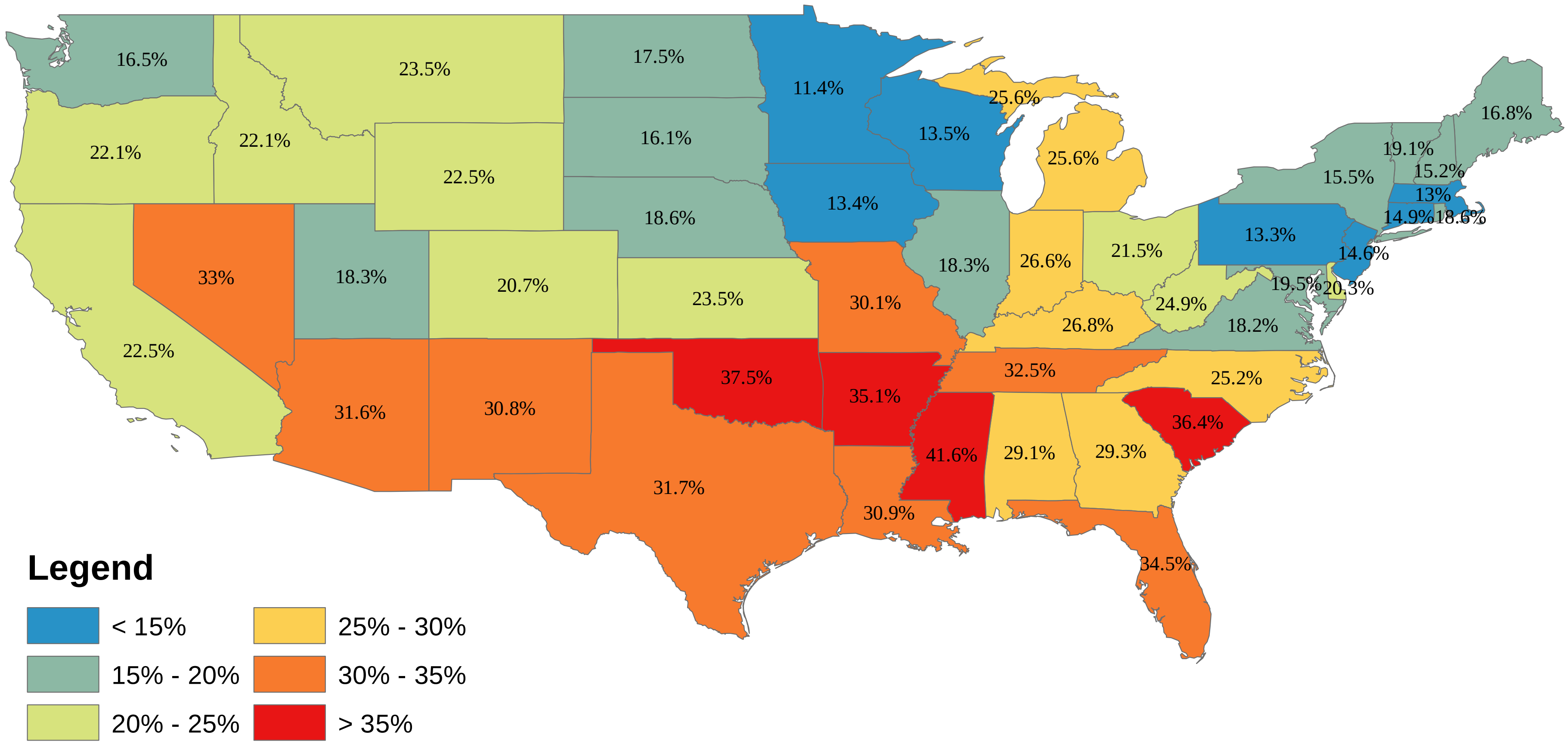
Data generated from the Federal Reserve Bank of New York Consumer Credit Panel / Equifax. This number is based on the percentage of student loan trades overdue, even if not in repayment.

Delinquency Rates for Loans in Repayment (Method 1)



Data generated from the Federal Reserve Bank of New York Consumer Credit Panel. Repayment here includes all loans with nonzero minimum payments.

Delinquency Rates for Loans in Repayment (Method 2)



Data generated from the Federal Reserve Bank of New York Consumer Credit Panel. Repayment here excludes all loans with nondecreasing balances that are not delinquent.

Repayment Relief Programs

Student Loans in Perspective

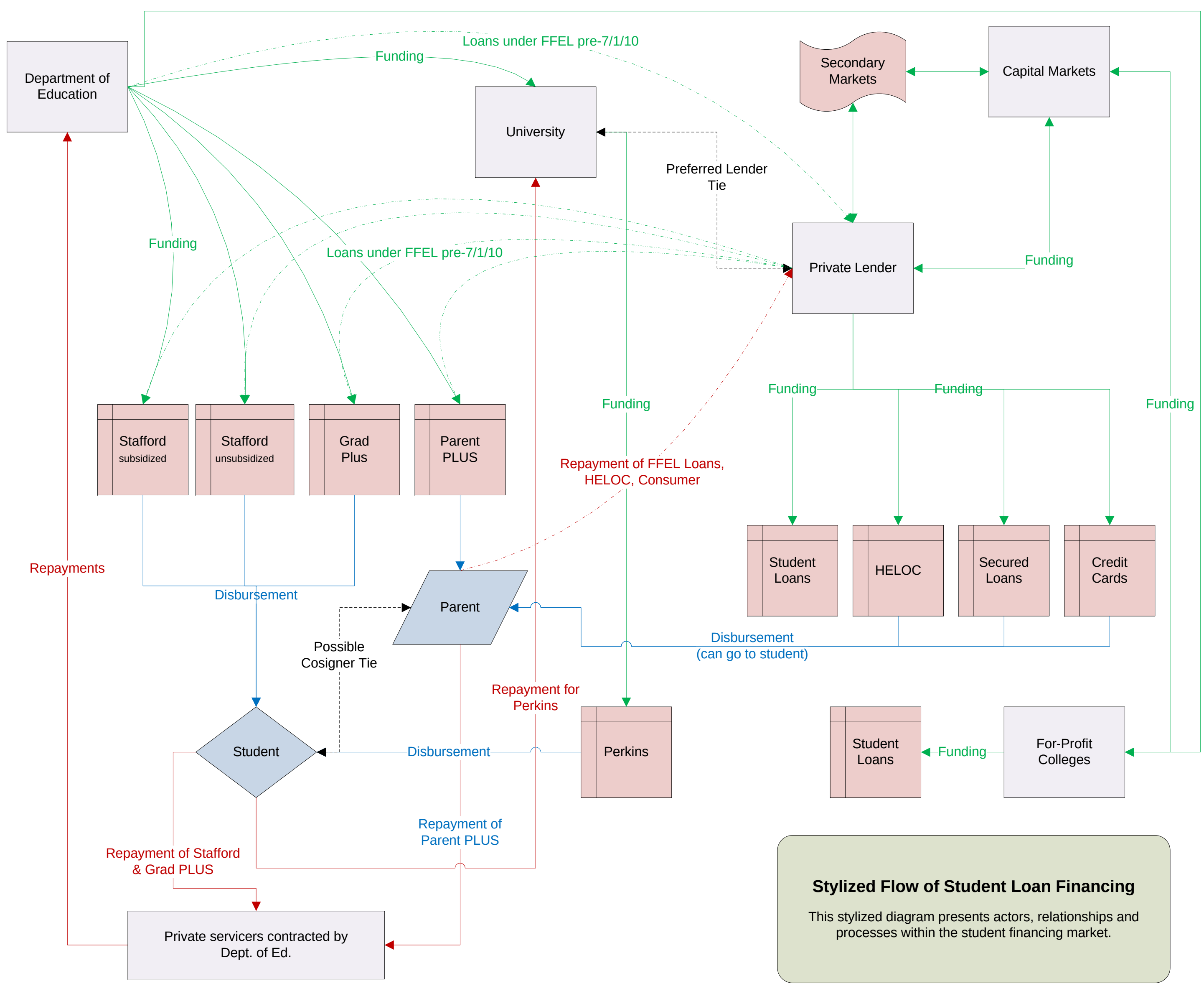
Wenhua Di and Kelly D. Edmiston (2016). "Fiscal Impact of Student Loan Relief Programs," forthcoming, *Annals of the American Academy of Political and Social Science*.

Motivation for borrower relief

- The consequences of being unable (or unwilling) to repay student loans can be severe for debtors and has been shown to have a broader economic impact.
  - Less likely to marry over 7 years
  - Lower rate of household formation
  - Less likely to buy home, even if mortgage qualified
  - Lower rates of new business formation / entrepreneurship
  - Lower levels of personal and retirement saving
  - Mars credit history (incl. ability to get more federal student aid)
- For many families, student loans are the only financial tool to bridge the gap between college costs and funds from family savings and other sources of aid.
- In light of these concerns, considerable political attention has been focused on providing financial relief to student loan debtors, resulting in a number of programs that extend repayment terms, graduate payments, or tie required payments to discretionary income.

Motivation for borrower relief

- Participation in an income-driven plan has been shown to significantly reduce defaults by making payments more manageable, but participation often comes at significant long-term cost to the borrower.
- The GAO estimates that the majority of borrowers of federal student loans are qualified for a relief program(s), but only a small percentage of eligible borrowers participate in these programs (currently about 25 percent).
- **The take-up rate of these programs depends largely on borrowers' understanding of the programs**
- Existing student debt relief programs and proposed relief efforts can provide a safety net for distressed borrowers and possibly diffuse the fear of debt for some borrowers, but they have substantial fiscal implications.
- The consequences of numerous student debt relief programs for borrowers and the federal budget are not well-understood.



Source: Kelly D. Edmiston et al., 2012 (updated 2013, 2015), "Student Loans: Overview and Issues," RWP 12-05, Federal Reserve Bank of Kansas City.

Student Loan Repayment Programs

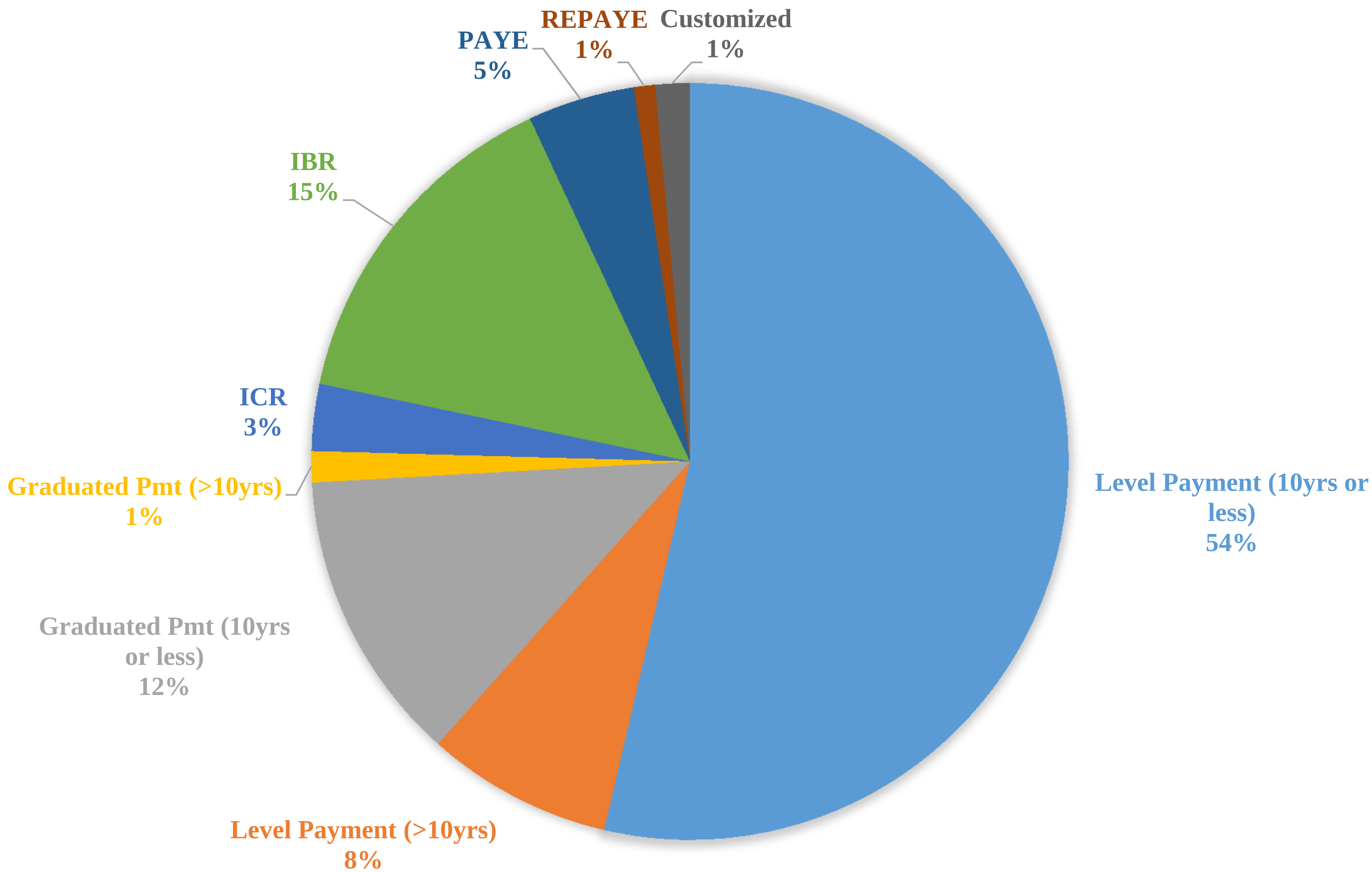
- Deferment and forbearance
- Standard (default) repayment plan – full amortization with level payments over ten years
- Extended repayment plan – full amortization with level payments over a term of up to 25 years
- Graduated repayment – full payment; payments start low and increase every two years at a constant rate; terms up to 30 years
- Income-Driven-Repayment Programs
  - Income-Contingent Repayment (ICR)
  - Income-Based Repayment (IBR)
  - Income-Based Repayment (IBR) for new borrowers
  - Pay-As-You-Earn (PAYE)
  - Revised Pay-As-You-Earn (REPAYE)

Characteristics of Alternative Income-Driven Repayment Plans for Federal Student Loan Debt

Program	Income-Based Repayment (old)	Income-Based Repayment (new)	Income-Contingent Repayment	Pay-As-You-Earn	Revised Pay-As-You-Earn
Abbreviation	**IBR**	**IBR (new)**	**ICR**	**PAYE**	**REPAYE**
Eligibility	FFEL; DL with no loans after Jul 14 2014	DL with loans after Jul 14 2014 "new borrowers"	DL; Direct **Consolidated FFEL and FFELP**	DL disbursed on/after Oct 1 2011; Direct Consolidated loans in some cases	DL; Direct Consolidated **FFEL and FFELP**
Hardship Requirement (PFH)	Yes	Yes	No	Yes	No
Discretionary Income	AGI – 1.5 (Poverty)	AGI – 1.5 (Poverty)	AGI – Poverty	AGI – 1.5 (Poverty)	AGI – 1.5 (Poverty)
Income-Driven Payment (share of discretionary income)	Lesser of 15% or 10-yr level payment	Lesser of 10%; or 10-yr level payment	Lesser of 20% or adjusted payment on 12-yr level payment plan	Lesser of 10% or 10-yr level payment	10%; no limit on payment
Interest Capitalization	If no longer **PFH** (incl. not recertifying); no maximum	If no longer PFH (incl. not recertifying); no maximum	No limit	If no longer PFH, fail to recertify, or voluntarily leave PAYE; **Limit of 10% of original debt amount**	If fail to recertify or voluntarily leave REPAYE
Subsidy of Interest (if capitalized)	100% for 3 years if subsidized loan, else none	100% for 3 years if subsidized loan, else none	None	100% for 3 years if subsidized loan, else none	100% for 3 years if subsidized loan, else **50% life of repayment term**
Repayment Term	300 payments over at least 25 years	240 payments over at least 20 years	300 payments over at least 25 years	240 payments over at least 20 years	240 payments over at least 20 years; 300 payments over at least 25 years if debt financed graduate or professional education

Sources: National Council of Higher Education Resources, "Income Driven Repayment Comparison Chart; U.S. Department of Education, Office of Federal Student Aid, "Income-Driven Repayment Plans for Federal Student Loans" and "Income-Driven Repayment Plans: Questions and Answers.

ED Loan Portfolio by Repayment Program



Source: National Student Loan Data System (NSLDS) and U.S. Department of Education

Computing <u>Monthly</u> Payment Amount ICR: Really?

- [Step 1] Determine the total monthly payment amount based on 12 years using standard amortization.
- [Step 2] Multiply the result of Step 1 by the income percentage factor (IPF) shown in the income percentage factors table that corresponds to the borrowers' AGI
  - Must interpolate from "Chart E," similar to tax tables
  - Compute Income Interval = (closest greater value in Chart E) – (closest lesser value in Chart E)
  - Find the IPFs and do a similar calculation to get the IPF Interval
  - Subtract closest lesser value in Chart E from income and divide the result by the Income Interval
  - Multiply this result by the IPF interval
  - Add this result to the IPF associated with the closest lesser value in Chart E
- [Step 3] Determine 20 percent of the borrower's discretionary income and divide by 12 (discretionary income is AGI minus the HHS Poverty Guideline amount for a borrower's family size and State of residence).
- [Step 4] Compare the amount from Step 2 with the amount from Step 3. The lower of the two will be the monthly ICR payment amount.

Source: <u>Federal Register</u>, Volume 78, Number 107 (Tuesday, June 4, 2013), pp. 33395-33398

"Note that I decided not to bother describing the deal with Income-Contingent Repayment; a'int [sic] nobody got time for that."

-- Heather Jarvis

http://askheatherjarvis.com/blog/what-triggers-student-loan-interest-capitalization

U.S. Department of Education Advice on Choosing an Income-Driven Repayment Plan

How do I decide which income-driven repayment plan to choose?

If you've decided that an income-driven repayment plan is right for you, **you'll want to choose the plan that provides the most benefit to you based on your individual circumstances**. Although all four income-driven plans allow you to make a monthly payment based on your income, the plans differ in terms of who qualifies, how much you have to pay each month, the length of the repayment period, and the types of loans that can be repaid under the plan.

If you have only Direct Loans, you can choose from all four income-driven repayment plans. **If you're not sure which plan to choose, you have the option of requesting the income-driven plan that provides the lowest payment amount.** Your servicer will determine which plans you qualify for and will then place you on the plan with the lowest monthly payment.

Source: U.S. Department of Education, Office of Federal Student Aid, "Income-Driven Repayment Plans for Federal Student Loans"

Government Accounting for Student Loans

- Accrual-based budgeting
  - NPV (incl disbursements, subsidies, payments)
  - Fair Credit Reporting Act (FCRA, 1990) method
  - Federal Government Costs using FCRA
    - FY2011: -$47.3b
    - FY2014: -$21.3b (estimated)
    - FY2015: $12.8b (estimated)
    - FY 2016: -$14b (proposed) [REPAYE implemented]
  - Updates
  - *vs.* fair-value

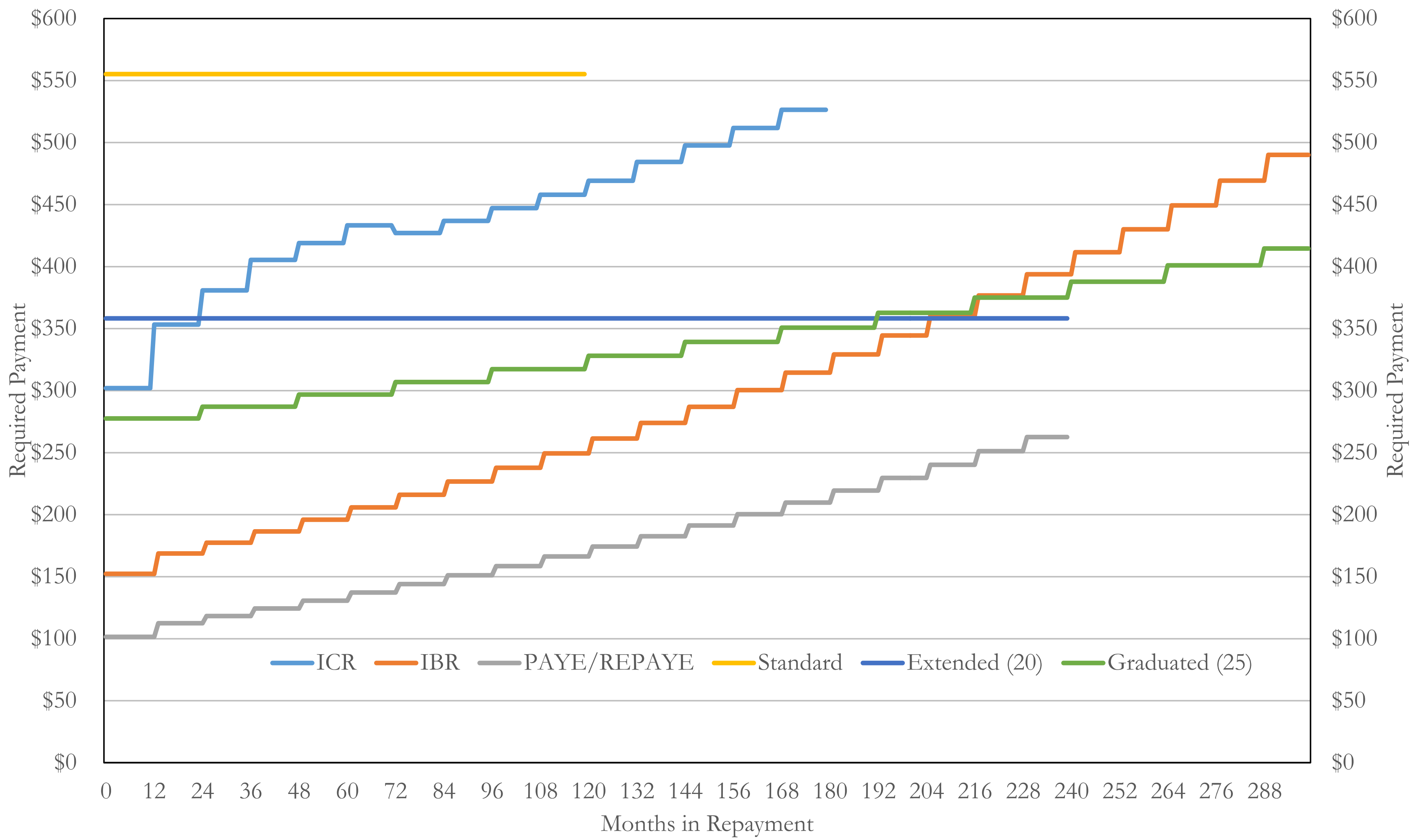
Government Accounting for Student Loans

- Accrual-based budgeting (cont)
  - Fair-value estimates
    - CBO: 11 percent of disbursements
- Indirect
  - Greater income → tax revenues; lower costs
  - Interest deductions
- Outlook
  - Not expected to see much higher default rates
  - Could see continued rapid increases in borrowing
  - Reform options

Assumptions Underlying the Calculations

- Borrower is single with no dependents
- The interest rate on the student debt is 6 percent, the average for outstanding student loans according to the ED
- The poverty threshold grows at 2.14 percent, compounded annually
  - Based on CAGR between 2000 and 2016 (HHS)
- Income grows at 3.4 percent annually
  - Based on CAGR in employee compensation, 2000-2015
  - Note: 4.0 percent for personal income
- SL repayments are discounted at a rate of 2.8 percent
  - Based on index of investment-grade U.S. corporate bonds
- Loans are paid as agreed

Payment Schedules Under Alternative Repayment Programs (Initial AGI = $30,000; Initial Student Debt = $50,000)



Borrower Impact, REPAYE

Initial AGI	Initial Debt	Payments	Interest PD	Principal PD	Loan Forgiveness	Total Interest	Unpaid Interest
$25,000	$20,000	$27,459	$20,464	$6,996	$13,004	$22,520	$2,056
$25,000	$30,000	$27,459	$26,543	$916	$29,084	$35,927	$9,384
$25,000	$50,000	$27,459	$27,459	$0	$50,000	$60,000	$32,541
$25,000	$75,000	$27,459	$27,459	$0	$75,000	$90,000	$62,541
$25,000	$100,000	**$27,459**	**$27,459**	**$0**	**$100,000**	**$120,000**	**$92,541**
$30,000	$20,000	$35,141	$15,141	$20,000	$0	$15,141	$0
$30,000	$30,000	$41,900	$31,423	$10,477	$19,523	$33,652	$2,229
$30,000	$50,000	$41,900	$41,744	$156	$49,844	$59,995	$18,251
$30,000	$75,000	$41,900	$41,900	$0	$75,000	$90,000	$48,100
$30,000	$100,000	$41,900	$41,900	$0	$100,000	$120,000	$78,100
$35,000	$20,000	$29,592	$9,592	$20,000	$0	$9,592	$0
$35,000	$30,000	$55,960	$25,960	$30,000	$0	$26,049	$89
$35,000	$50,000	**$56,340**	**$51,019**	**$5,321**	**$44,679**	**$59,216**	**$8,197**
$35,000	$75,000	$56,340	$56,340	$0	$75,000	$90,000	$33,660
$35,000	$100,000	$56,340	$56,340	$0	$100,000	$120,000	$63,660
$40,000	$20,000	$24,483	$4,483	$20,000	$0	$4,483	$0
$40,000	$30,000	$48,101	$18,101	$30,000	$0	$18,101	$0
$40,000	$50,000	$70,781	$53,172	$17,608	$32,392	$55,827	$2,655
$40,000	$75,000	$70,781	$69,492	$1,288	$73,712	$89,913	$20,421
$40,000	$100,000	$70,781	$70,781	$0	$100,000	$120,000	$49,219
$50,000	$20,000	$24,483	$4,483	$20,000	$0	$4,483	$0
$50,000	$30,000	$41,049	$11,049	$30,000	$0	$11,049	$0
$50,000	$50,000	**$88,319**	**$38,319**	**$50,000**	**$0**	**$38,319**	**$0**
$50,000	$75,000	$99,661	$80,607	$19,055	$55,945	$85,883	$5,276
$50,000	$100,000	$99,661	$96,731	$2,931	$97,069	$119,740	$23,010

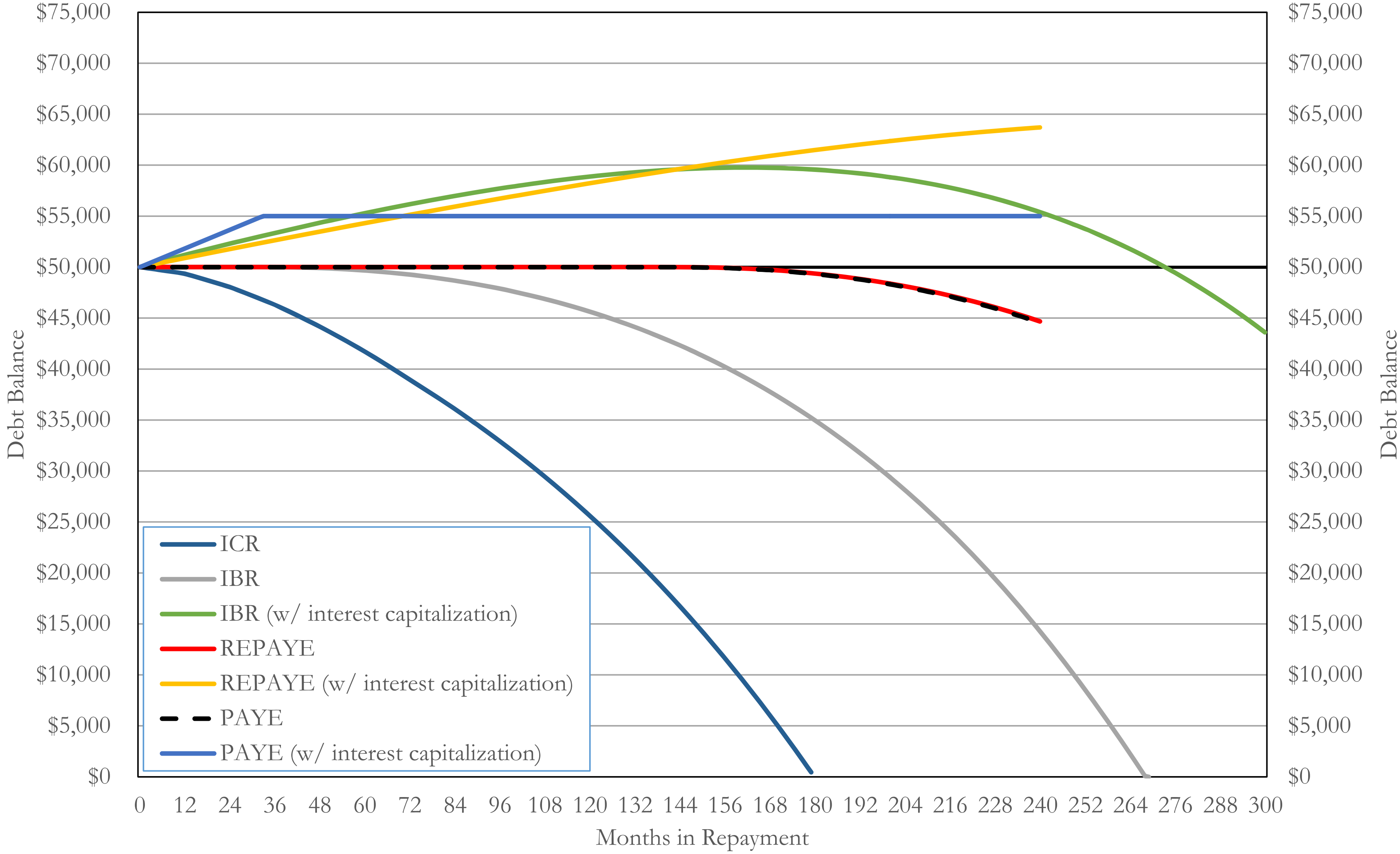
Interest Capitalization (from unpaid interest)

- Always an issue with unsubsidized loans during deferment and forbearance and subsidized loans in forbearance
- Fore IBR and PAYE, when no longer have a Personal Financial Hardship (PFH) or leave the program
  - Under IBR, have PFH when 15 percent of discretionary income is less than the payment under the standard 10-year level-payment plan
  - Under PAYE, have PFH when 10 percent of discretionary income is less than the payment under the standard 10-year level-payment plan
  - PFH not relevant under ICR and REPAYE
  - Note: the standard (default) 10-yr level-payment plan is a full amortization of the debt, so the first payment would necessarily exceed the interest that accrued during the month
- For REPAYE, accrued "capitalized" interest is added to the balance upon leaving the REPAYE program
- For ICR always, but limited

(Potentially) Capitalized Interest

Initial AGI	Initial Debt	IBR	PAYE	REPAYE
$25,000	$20,000	($133)	($2,000)	($1,028)
$25,000	$30,000	($4,635)	($3,000)	($4,692)
$25,000	$50,000	($19,147)	($5,000)	($16,270)
$25,000	$75,000	($52,512)	($7,500)	($31,270)
$25,000	**$100,000**	**($90,012)**	**($10,000)**	**($46,270)**
$30,000	**$20,000**	**$0**	**$0**	**$0**
$30,000	$30,000	$0	($2,229)	($1,114)
$30,000	$50,000	($5,902)	($5,000)	($9,126)
$30,000	$75,000	($27,377)	($7,500)	($24,050)
$30,000	$100,000	($60,245)	($10,000)	($39,050)
$35,000	$20,000	$0	$0	$0
$35,000	$30,000	$0	($82)	($44)
$35,000	$50,000	($674)	($5,000)	($4,099)
$35,000	$75,000	($12,296)	($7,500)	($16,830)
$35,000	$100,000	($35,667)	($10,000)	($31,830)

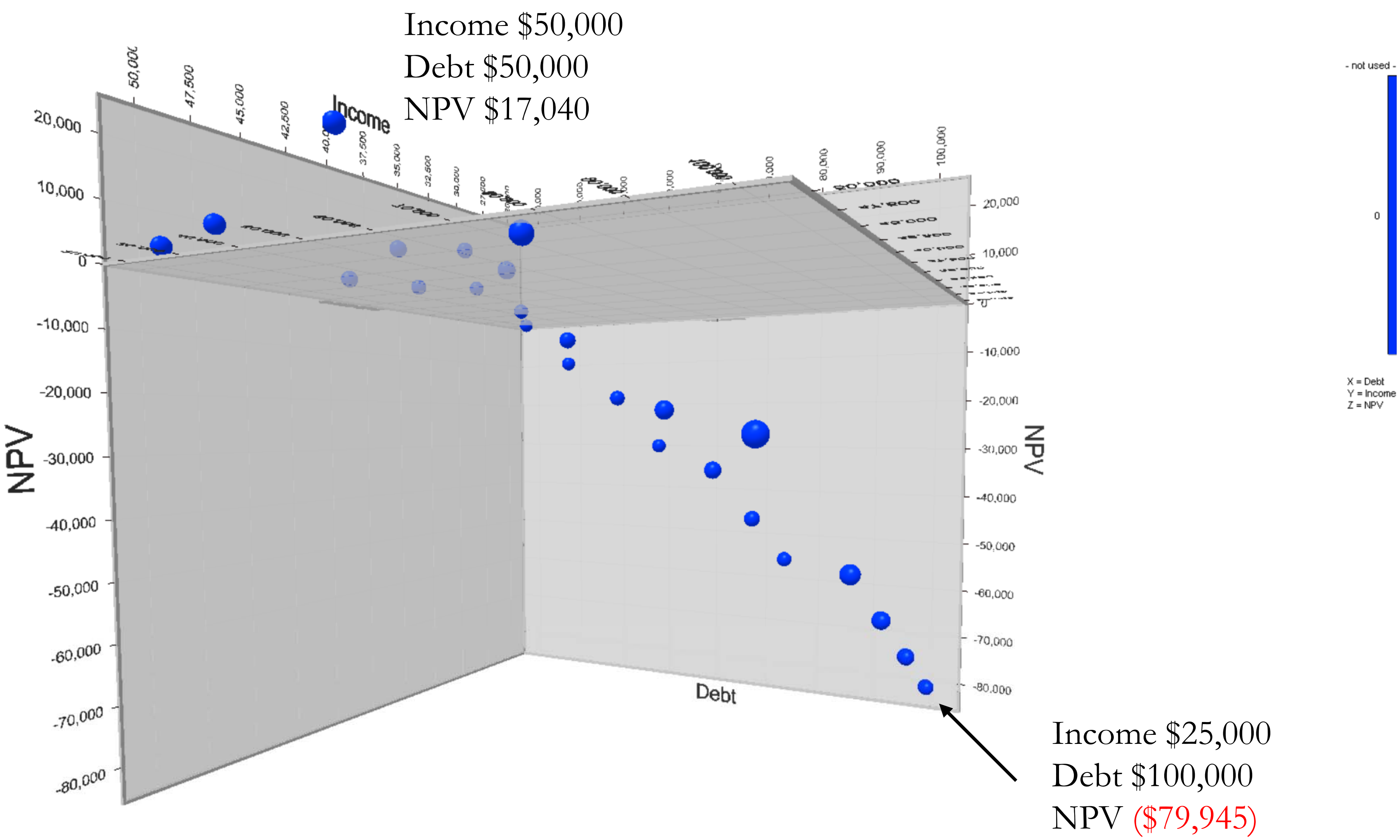
“Payoff” of Debt Balance by Program
(Initial AGI = $30,000; Initial Student Debt = $50,000)



Forgiveness of Principal and Interest

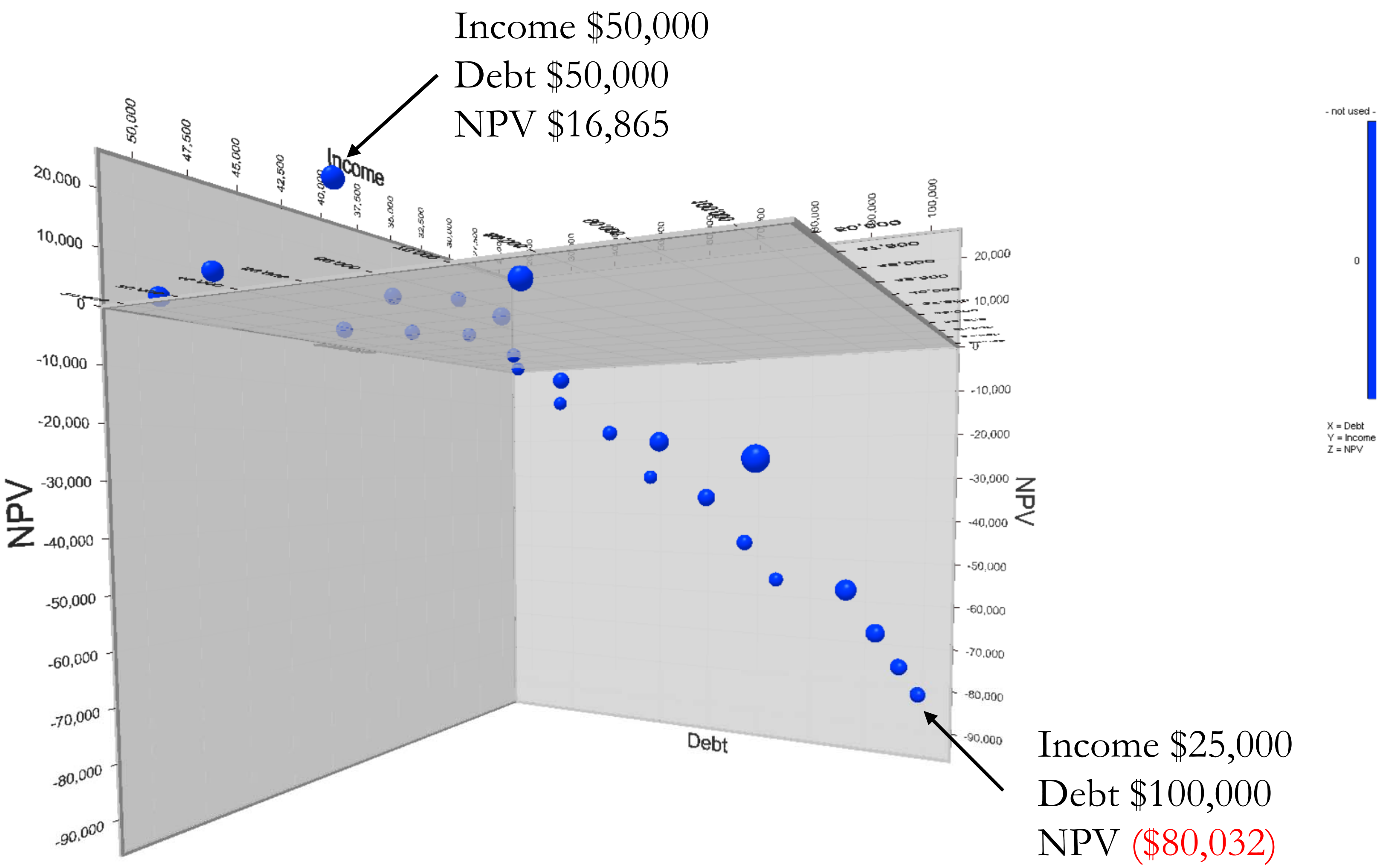
Initial AGI	Initial Debt	IBR			REPAYE		
		Unpaid Interest	Principal Forgiveness	Total Forgiveness	Unpaid Interest	Principal Forgiveness	Total Forgiveness
$25,000	$20,000	$133	$0	$133	$2,056	$13,004	$15,060
$25,000	$30,000	$4,635	$11,797	$16,432	$9,384	$29,084	$38,468
$25,000	$50,000	$19,147	$45,237	$64,384	$32,541	$50,000	$82,541
$25,000	**$75,000**	**$52,512**	**$75,000**	**$127,512**	**$62,541**	**$75,000**	**$137,541**
$25,000	$100,000	$90,012	$100,000	$190,012	$92,541	$100,000	$192,541
$30,000	$20,000	$0	$81	$81	$0	$0	$0
$30,000	$30,000	$0	$190	$190	$2,229	$19,523	$21,752
$30,000	$50,000	$5,902	$21,790	$27,692	$18,251	$49,844	$68,096
$30,000	$75,000	$27,377	$69,728	$97,105	$48,100	$75,000	$123,100
$30,000	$100,000	$60,245	$100,000	$160,245	$78,100	$100,000	$178,100
$35,000	$20,000	$0	$0	$0	$0	$0	$0
$35,000	$30,000	$0	$0	$0	$89	$0	$89
$35,000	$50,000	$674	$0	$674	$8,197	$44,679	$52,876
$35,000	**$75,000**	**$12,296**	**$49,888**	**$62,184**	**$33,660**	**$75,000**	**$108,660**
$35,000	$100,000	$35,667	$94,131	$129,798	$63,660	$100,000	$163,660
$40,000	$20,000	$0	$0	$0	$0	$0	$0
$40,000	$30,000	$0	$0	$0	$0	$0	$0
$40,000	$50,000	$0	$0	$0	$2,655	$32,392	$35,047
$40,000	$75,000	$3,982	$15,640	$19,623	$20,421	$73,712	$94,132
$40,000	$100,000	$19,348	$76,531	$95,880	$49,219	$100,000	$149,219
$50,000	$20,000	$0	$0	$0	$0	$0	$0
$50,000	**$30,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
$50,000	$50,000	$0	$0	$0	$0	$0	$0
$50,000	$75,000	$0	$0	$0	$5,276	$55,945	$61,221
$50,000	$100,000	$3,023	$6,682	$9,705	$23,010	$97,069	$120,079

Fiscal Impact (NPV), PAYE



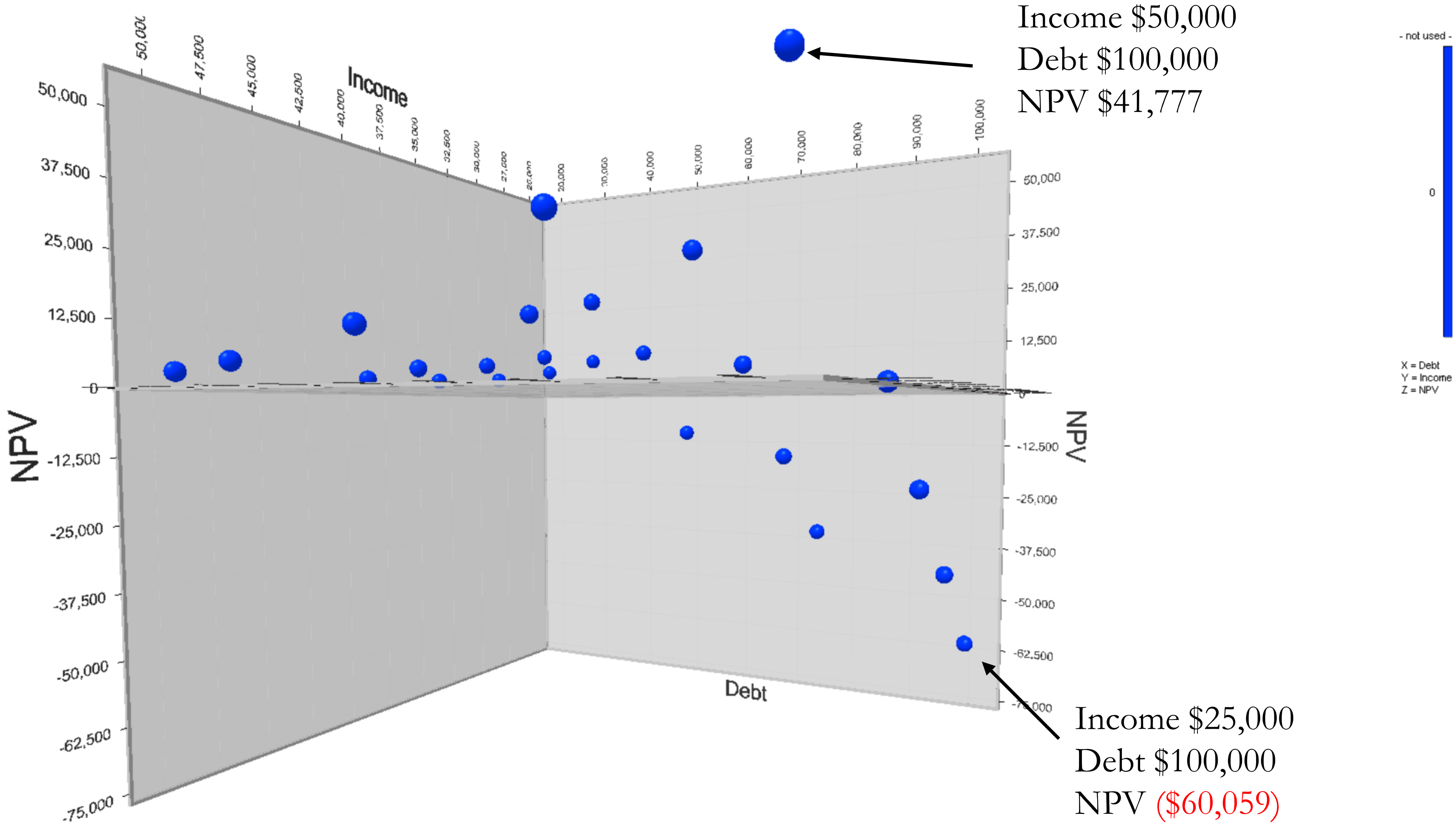
Note: Author's calculations; Made with *XLSTAT*, 3D-Plot

Fiscal Impact (NPV), REPAYE



Note: Author's calculations; Made with *XLSTAT*, 3D-Plot

Fiscal Impact (NPV), IBR



Income $50,000
Debt $100,000
NPV $41,777

Income $25,000
Debt $100,000
NPV ($60,059)

Note: Author's calculations; Made with *XLSTAT*, 3D-Plot

Moral Hazard: Borrowing more at no cost to student but great cost to federal budget

Initial AGI	Initial Debt	IBR	NPV (IBR)	PAYE	NPV (PAYE)	REPAYE	NPV (REPAYE)
$25,000	$20,000	$36,125	$6,986	**$27,459**	**$56**	**$27,459**	**($32)**
$25,000	$30,000	$59,854	$9,873	**$27,459**	**($9,944)**	**$27,459**	**($10,032)**
$25,000	$50,000	**$59,988**	**($10,059)**	**$27,459**	**($29,944)**	**$27,459**	**($30,032)**
$25,000	$75,000	**$59,988**	**($35,059)**	**$27,459**	**($54,944)**	**$27,459**	**($55,032)**
$25,000	$100,000	**$59,988**	**($60,059)**	**$27,459**	**($79,944)**	**$27,459**	**($80,032)**
$30,000	$20,000	$28,660	$4,080	$35,152	$6,798	$35,141	$6,694
$30,000	$30,000	$52,537	$9,930	**$41,900**	**$804**	**$41,900**	**$672**
$30,000	$50,000	**$89,755**	**$10,308**	**$41,900**	**($19,196)**	**$41,900**	**($19,328)**
$30,000	$75,000	**$89,755**	**($14,692)**	**$42,061**	**($44,076)**	**$41,900**	**($44,328)**
$30,000	$100,000	**$89,755**	**($39,692)**	**$42,061**	**($69,076)**	**$41,900**	**($69,328)**
$35,000	$20,000	$26,718	$3,249	$29,592	$4,561	$29,592	$4,498
$35,000	$30,000	$44,464	$6,776	$55,820	$11,286	$55,960	$11,159
$35,000	$50,000	$99,887	$20,559	**$56,541**	**($8,298)**	**$56,340**	**($8,623)**
$35,000	$75,000	**$119,522**	**$5,675**	**$56,541**	**($33,298)**	**$56,340**	**($33,623)**
$35,000	$100,000	**$119,522**	**($19,325)**	$56,541	**($58,298)**	**$56,340**	**($58,623)**
$40,000	$20,000	$26,645	$3,216	$27,267	$3,545	$24,483	$2,240
$40,000	$30,000	$40,939	$5,261	$48,010	$8,336	$48,101	$8,252
$40,000	$50,000	$85,363	$15,767	**$71,021**	**$2,480**	**$70,781**	**$2,081**
$40,000	$75,000	**$149,289**	**$26,042**	**$71,021**	**($22,520)**	**$70,781**	**($22,919)**
$40,000	$100,000	**$149,289**	**$1,042**	**$71,021**	**($47,520)**	**$70,781**	**($47,919)**
$50,000	$20,000	$26,645	$3,216	$26,645	$3,261	$24,483	$2,240
$50,000	$30,000	$39,967	$4,824	$41,316	$5,503	$41,049	$5,318
$50,000	$50,000	$71,337	$10,119	$88,105	$17,040	$88,319	$16,865
$50,000	$75,000	$132,479	$25,297	**$99,982**	**($963)**	**$99,661**	**($1,511)**
$50,000	$100,000	$208,824	$41,777	**$99,982**	**($25,963)**	**$99,661**	**($26,511)**

Conclusions about income-driven repayment programs

- The student loan relief program options are extraordinarily complex – nearly incomprehensible
- Different programs may lead to very different repayment schedules and payoff curves
- Forgiveness and unpaid interest can be significant, especially for low-income, high-debt borrowers
- Moderate to high-income borrowers with high debt loads are most favorable to the federal budget
- Lower-income borrowers with high debt loads are very costly to the federal budget
- Restrictions on monthly payments in tandem with debt (and interest) forgiveness, creates significant moral hazard, incenting students to borrow more at high fiscal cost
- *Simulations are sensitive to assumptions made about the borrowers*

Related Research

Wenhua Di and Kelly D. Edmiston (2017). "Fiscal Impact of Student Loan Relief Programs," forthcoming, *Annals of the American Academy of Political and Social Science*.

Wenhua Di and Kelly D. Edmiston (2015)."State Variation of Student Loan Debt and Performance," *Suffolk Law Review*, 48(3), 661-688

Kelly D. Edmiston et al. (2012). "Student Loans: Overview and Issues," *Federal Reserve Bank of Kansas City Community Development Research Working Paper 12-05 (updated April, 2013)*.

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