STUDENT DEBT GROWTH AND THE REPAYMENT PROGRESS OF RECENT COHORTS

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Studies continue to indicate that higher education is frequently a worthwhile investment for individuals,[1] and raises the productivity of the workforce as a whole.[2] While the rising cost of postsecondary education has not eliminated this "college premium," it has raised new questions about how a growing number of students can make these investments.[3] One solution to this problem is student loans, which have come to play an increasingly important role in financing higher education. Yet in spite of its importance, educational debt is not well understood. Among the reasons for this is the fact that the currently outstanding stock of student debt includes loans made by both government and private lenders, taken out by different cohorts and generations of borrowers. Additionally, there exist few central repositories of information on the characteristics and performance of all student loans.

In *Measuring Student Debt and its Performance*,[4] the authors bring a new data set to bear on this important issue, and present a brief analysis of the historical and current levels of student debt and how those debts have performed. Here, we extend our analysis through the end of 2013, and we present new findings on the repayment progress of the 2005–2012 school-leaving cohorts by late 2014.

I. DATA

Our analysis is based on data drawn from the Federal Reserve Bank of New York Consumer Credit Panel (the "CCP"). The CCP represents a 5% random sample of U.S. individuals with credit files as well as all of their household members.[5] In all, the entire data set includes anonymous credit files on more than 15% of the population, or nearly

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[*] The views presented here are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of New York, or the Federal Reserve System. The authors are grateful to Brian Cadena and Raven Molloy for helpful comments.

[1] *See* CLAUDIA GOLDIN, & LAWRENCE F. KATZ, THE RACE BETWEEN EDUCATION AND TECHNOLOGY 13 (2009) (noting positive correlation between schooling and income).

[2] *See* Enrico Moretti, *Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data*, 121 J. ECONOMETRICS 175, 202 (2004) (indicating expanding human capital at higher levels of education produces spillover benefit of higher productivity).

[3] *See generally* ROBERT B. ARCHIBALD & DAVID H. FELDMAN, WHY DOES COLLEGE COST SO MUCH? (2010); Susan Dynarski & Daniel Kreisman, *Loans for Educational Opportunity: Making Borrowing Work for Today's Students*, HAMILTON PROJECT 8–11 (Oct. 2013), *available at* http://www.upjohn.org/stuloanconf/Dynarski_Kreisman.pdf (discussing generally the need for government offered student loans).

[4] *See* Meta Brown et al., *Measuring Student Debt and Its Performance*, FED. RES. BANK N.Y., STAFF REP. NO. 668 1 (Apr. 2014), *available at* http://www.newyorkfed.org/research/ staff_reports/sr668.pdf.

[5] For a detailed discussion of the contents, sources, and quality of credit report data see Robert B. Avery et al., *An Overview of Consumer Data and Credit Reporting*, FED. RES. BULL. (Feb. 2003), http://www.federalreserve.gov /pubs/bulletin/2003/0203lead.pdf.

40 million individuals. The panel includes information from the credit reports for those individuals for each quarter during the last sixteen years, and we use data for this analysis through December 2013. While the CCP commences in 1999, irregularities in student loan reporting prior to 2004 suggest dropping the 1999–2003 data, and we thus begin our analysis in 2004.

The sampling exploits randomness in the last two digits of individuals' social security numbers.[6] The procedure ensures that the panel is dynamically updated in each quarter to reflect new entrants into credit markets. In addition, Equifax, the data provider, matches the primary individual's mailing address to all records in the data in order to capture information about other members of the primary individual's household. While these individuals are added to the overall CCP sample, in this Article we focus on the 5% representative random sample of primary sample members.

The data set includes detailed data on individual student loans and individual mortgage loans such as:

- month and year the account was opened;
- current balance and payment status;
- origination balance;
- whether the account is individual or joint;
- scheduled monthly payment;
- narrative codes giving details of the account (such as the payment is deferred); and
- industry code indicating the type of the servicer.

In addition, the data set includes somewhat more aggregated data on individuals' other loans, including credit cards, auto loans such as:

- total number of each type of account (for example, the total number of credit cards);
- credit limit on each type of account (for example, the combined credit limit on all credit cards); and
- total balance on each type of account in each status (for example, the total credit card balance that is current, 30-days delinquent, and so on).

More general information regarding the borrower on the credit report includes:

- residential location of the borrower at the census block level and also zipcode level;
- birth year of the borrower;
- indicators for whether the individual has a foreclosure or bankruptcy within the last twenty-four months, and ever, on the report;
- indicators for whether the individual has any accounts in collection and the amount of collection; and
- a consumer credit score that is analogous to the well-known FICO score.

The data are completely anonymous and stripped of all personal identifiers. Unfortunately, while the vast majority of student loan servicers report to credit bureaus,

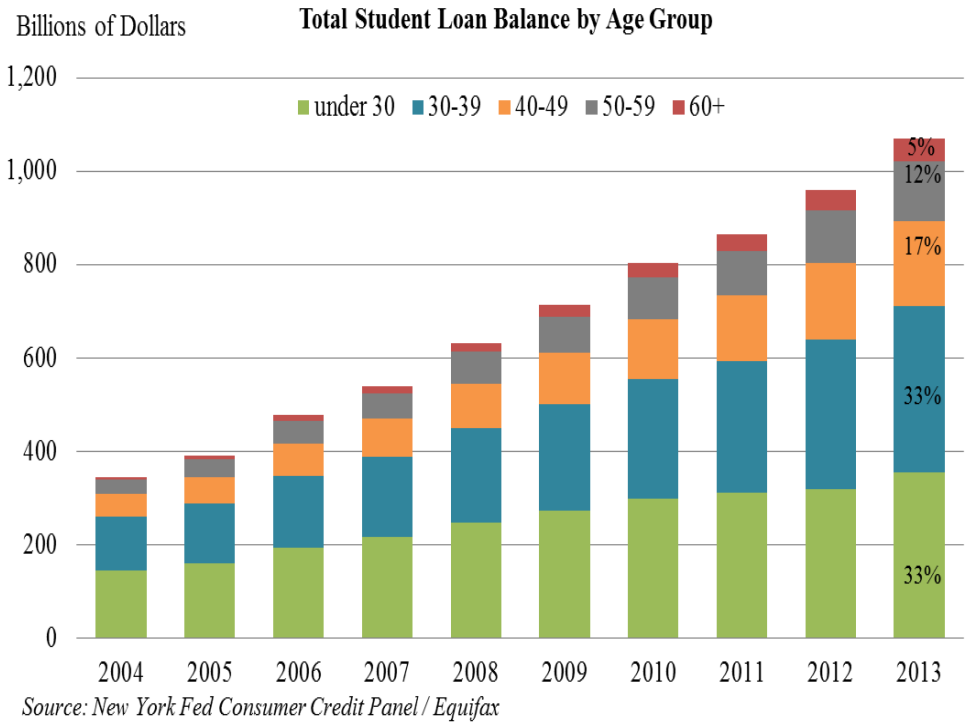
[6] For further details about the sample design and content of the Federal Reserve Bank of New York Consumer Credit Panel see Donghoon Lee & Wilbert van der Klaauw, *An Introduction to the FRBNY Consumer Credit Panel*, FED. RES. BANK N.Y., STAFF REP. No. 479 3 (Nov. 2010), http://www.fednewyork.org/research/staff_reports/sr479.pdf.

these data do not distinguish between private and federal loans. Outside reports suggest that private loans account for approximately 10% of aggregate student debt.[7] Although a number of reports have pointed to differences in the growth, size, and performance of private and federal loans, this limitation of our data will require a focus on the total student debt burden.

II. GROWTH OF STUDENT DEBT

Between 2004 and 2013, the total student debt in the United States tripled, from $364 billion in 2004 to $1.08 trillion in 2013 (**Figure 1**). Expressed in annual terms, this means student debt increased by an average of 14% per year. As of the end of 2013, about two-thirds of this debt is owed by borrowers under forty, with about one-third of the total being owed by borrowers under thirty. Americans above forty also have student debt, but their share is much smaller, with 17% held by borrowers in their forties, 12% held by borrowers in their fifties, and the remainder held by borrowers sixty and older.

Figure 1



Source: New York Fed Consumer Credit Panel / Equifax

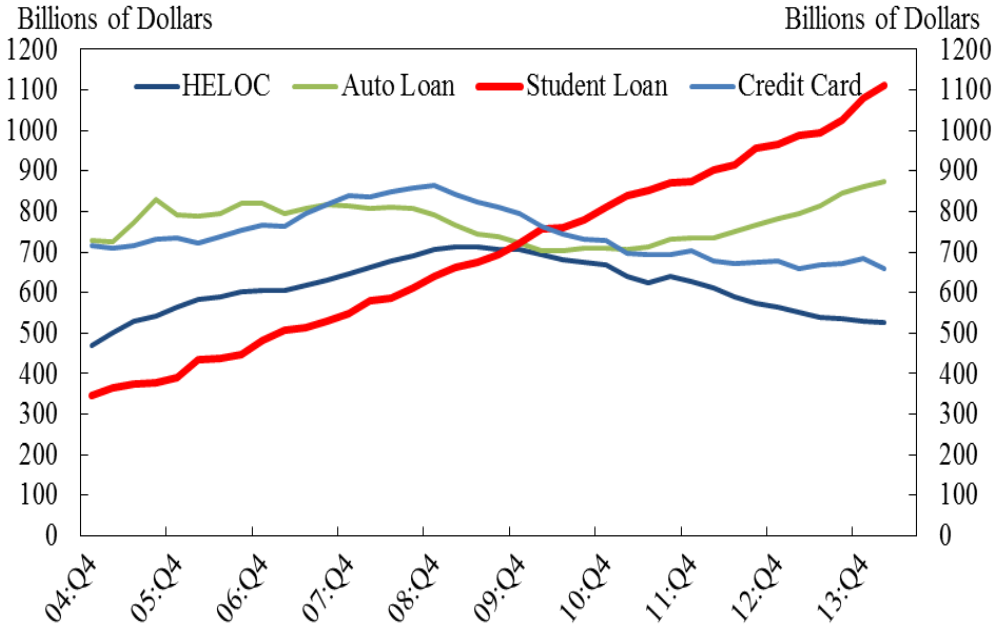
Among the various types of household debt, student debt is unique. While balances on all other forms of household debt—including mortgages, credit cards, auto loans,

[7] *See* Dan Feshbach, et al., *Private Student Loan Performance Report - Q3 2014*, MEASUREONE (Dec. 2014), *available at* http://www.measureone.com/reports.

and home equity lines of credit—declined during and after the Great Recession, student debt has steadily risen, as shown in **Figure 2**.[8] In 2010, student debt surpassed credit cards to become the second largest form of household debt after mortgages whereas prior to 2008, the student debt was the smallest of household debts.

Figure 2

Nonmortgage Balances Reported on Consumer Credit Reports

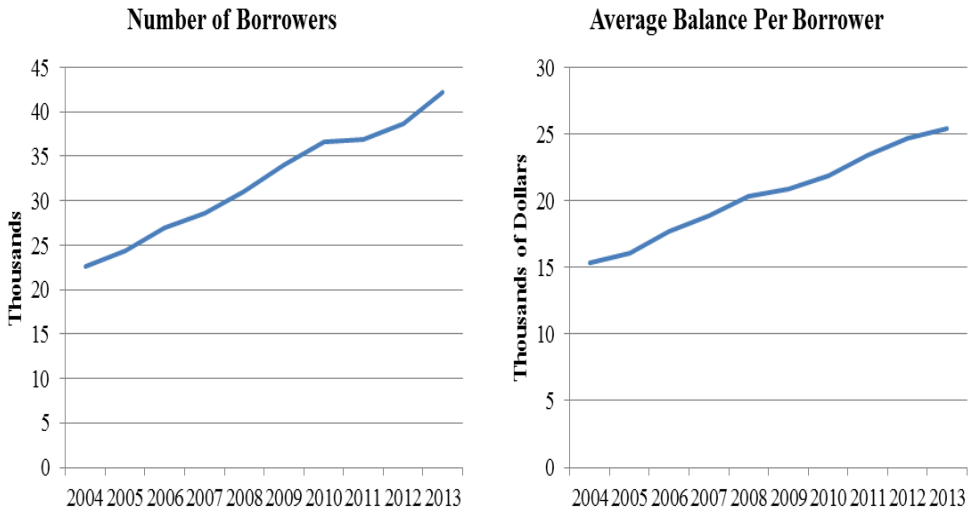


Source: New York Fed Consumer Credit Panel / Equifax

What accounts for the rapid increase of the aggregate student debt in this period? Our research shows that increases in the number of borrowers and the average debt per person equally contributed to the growth of total student debt. Between 2004 and 2013, the number of borrowers increased by 87% from 23 million borrowers to 42 million (**Figure 3**). In the same period, average debt per borrower also increased by 66%, from about $15,000 to $25,000.

[8] *See* Meta Brown et al., *The Financial Crisis at the Kitchen Table: Trends in Household Debt and Credit*, 19 CURRENT ISSUES IN ECON. & FIN. 3–6 (2013), *available at* http://www.newyorkfed.org/research/current_issues/ci19-2.pdf (analyzing consumer behavior in decreased spending and increased repayments during economic downturn).

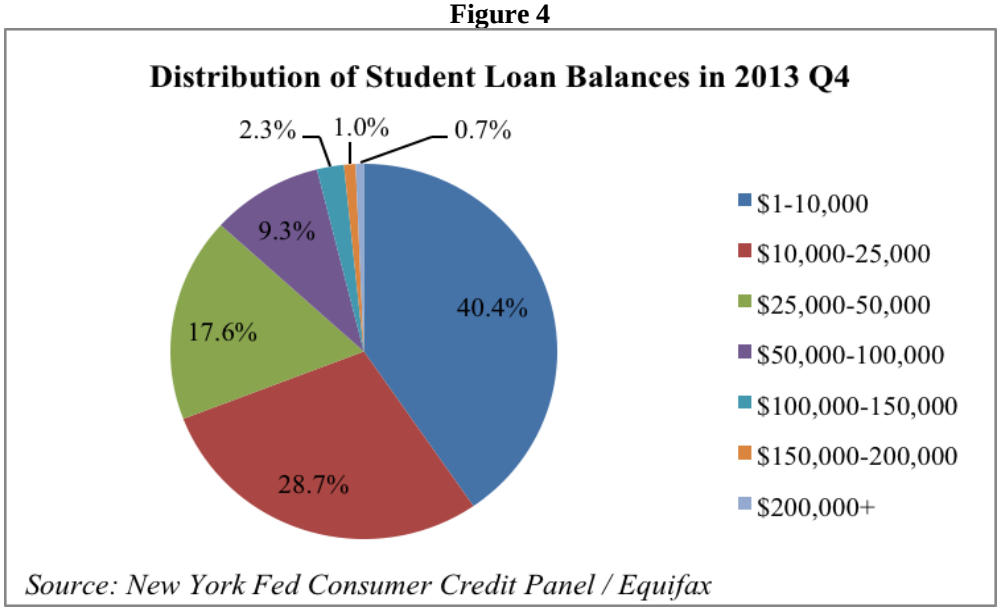
Figure 3



Source: New York Fed Consumer Credit Panel/Equifax

Note, however, that there is actually a great variation in balances among borrowers, as shown in **Figure 4**. Of the 42 million borrowers, about 40% have balances of less than $10,000. Approximately another 29% owe between $10,000 and $25,000. Only 4% of borrowers have balances of more than $100,000, with 0.7%, or roughly 295,000 borrowers nationwide, having more than $200,000 of debt.

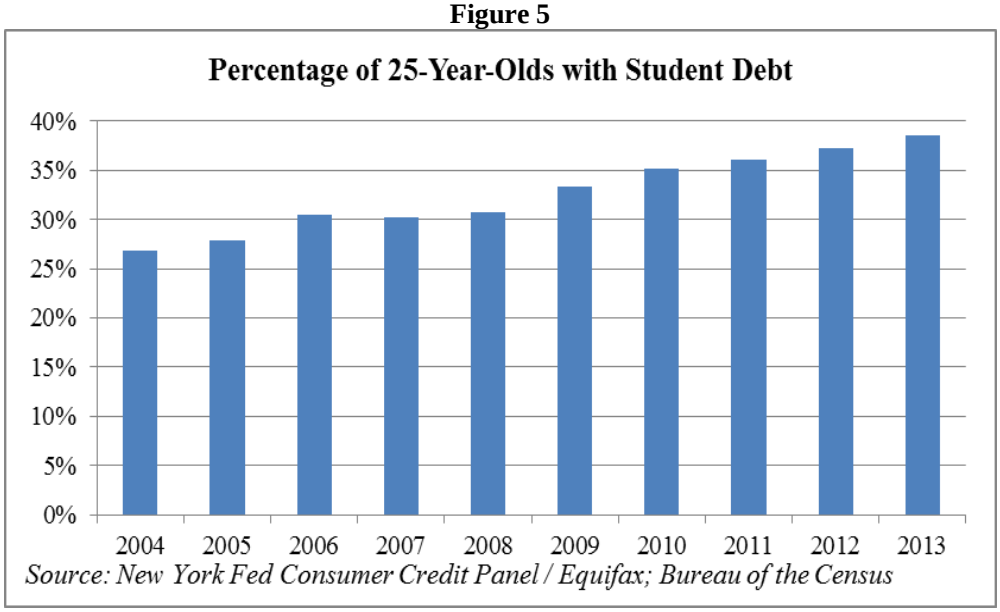
Figure 4



Source: New York Fed Consumer Credit Panel / Equifax

With respect to the rise in the number of borrowers, **Figure 5** shows that a steadily increasing share of younger people are taking out student loans: in 2004, only about 27% of 25-year-olds had student debt, while eight years later, in 2013, the proportion of 25-year-olds with student debt increased to about 39%.

Figure 5



There are several explanations for these increases. First, more people are attending college, adding to the number of borrowers.[9] Second, students are staying in college longer and attending graduate school in greater numbers, and loans to finance graduate study have become more readily available.[10] Third, competing, non-education sources of credit, such as home equity loans and credit card debt, have imposed tighter underwriting standards, and generally become less available, since 2008.[11] Fourth, the cost of a college education has continued to grow sharply during the period.[12]

If student borrowers complete their education and quickly start repaying their debt, then the increase in the number of borrowers and in the total amount of student debt would in part be offset by the outflow. However, as we will discuss in the next section,

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[9] *See Percentage of 18- to 24-year-olds Enrolled in Degree-granting Institutions, by Level of Institution and Sex and Race/Ethnicity of Student: 1967 through 2013*, NAT'L CENTER FOR EDUC. STAT. (2013), http://nces.ed.gov/programs/digest/d14/tables/dt14_302.60.asp (breaking down enrollment for degree granting institutions and showing increase in enrollment).

[10] *See* Leila M. Gonzales et al., *Graduate Enrollment and Degrees: 2002 to 2012*, COUNCIL GRADUATE SCHOOLS 70 (Sept. 2013), http://www.cgsnet.org/ckfinder/userfiles/files/GEDReport_2012.pdf (comparing graduate school application trends over ten year period).

[11] Meta Brown & Sydnee Caldwell, *Young Student Loan Borrowers Retreat from Housing and Auto Markets*, LIBERTY STREET ECON. (Apr. 17, 2013), http://libertystreeteconomics.newyorkfed.org/2013/04/young-student-loan-borrowers-retreat-from-housing-and-auto-markets.html#.VNGFMGjF-Co (discussing stricter standards imposed by lenders as factor in declining participation in non-student debt markets).

[12] *See Trends in College Pricing*, C. BOARD 7, 9 (2013), https://trends.collegeboard.org/sites/default/files/college-pricing-2013-full-report.pdf (surveying increased costs of undergraduate education among private and non-private institutions during last decade).

the repayment rate on student loans is low. This is because many borrowers delay payments through continuing education, deferrals, forbearance, and income-based repayment plans. Some borrowers have difficulty making required payments, become delinquent on their debt, and ultimately default, which for federal loans is defined as falling 270 days behind on payments.[13] In addition, discharging student debt is very difficult; the delinquent debt stays with the borrower, and the high rate of inflow and the low rate of outflow contribute to the increase in the total student debt outstanding.

III. STUDENT LOAN DELINQUENCY

Over the past eight years there has been an increase in payment difficulties for student loan borrowers. The most common measure of inability to meet the debt obligation is the proportion of borrowers ninety days or more past due on their payments. We refer to this as the "measured delinquency rate."

As of the fourth quarter of 2012, about 17%, or 6.7 million borrowers, were 90 days or more delinquent on their student loan payments (see the left panel of **Figure 6**). This measured delinquency rate is higher among borrowers aged 30–49 than it is among younger or older borrowers, which is unexpected since typically younger borrowers have higher delinquency rates. There was a strongly increasing trend in delinquency between 2004 and 2012 among all age groups, with measured delinquency rising from an overall rate of less than 10% in 2004 to 17% in 2012.

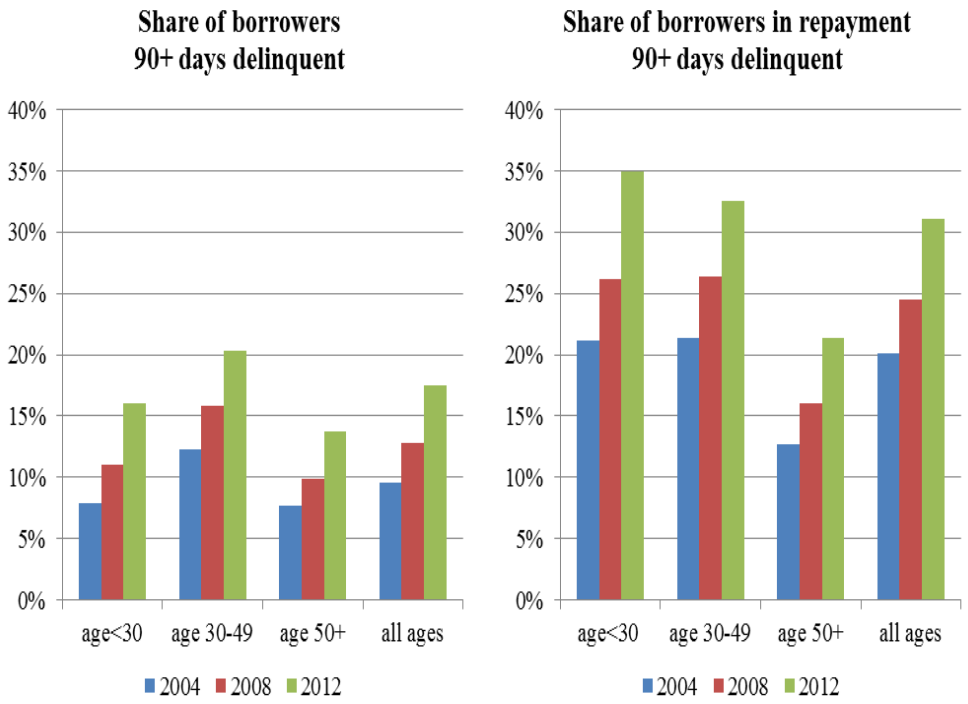
The measured delinquency rate on student debt is currently the highest of any consumer debt product, although for most of the last decade credit card delinquency was even higher. Nonetheless, the measured delinquency rate is somewhat misleading, and the effective delinquency rate, as we define below, on student debt is even higher. As noted above, in 2012 the measured delinquency rate among the 39 million borrowers was 17%. But many of the remaining 83% in fact were not paying down their loan balances. While 39% did reduce their balance from the previous quarter by at least one dollar, 14% of borrowers had the same balance as the previous quarter. A full 30% of borrowers actually saw an increase in their balance. In other words, 44% of borrowers were neither delinquent nor paying down their loans.

Those borrowers whose balances did not decline are likely not yet in the repayment cycle, meaning that they were either still in school, in deferral, or in a forbearance period delaying their regular payments. This group may also include some borrowers who participate in income-based repayment plans and make only small payments, which are often insufficient to cover the accumulated interest. In order to have a more accurate picture of the delinquency rate, we calculate the "effective delinquency rate" by excluding this 44% of borrowers not in repayment; the result is shown in the right-hand panel of **Figure 6**. This effective delinquency rate is nearly double the measured delinquency rate, with almost one-third of borrowers in repayment being delinquent on their debt. Interestingly, borrowers under 30, who previously appeared to have a lower measured delinquency rate than the 30–49 age group, are now shown to have the

[13] *See* Brown et al., *supra* note 4, at 9–12 (discussing "effective delinquency rate" to assess delinquency and default rates among students).

highest effective delinquency rate. The fact that fewer of these younger borrowers are in the repayment cycle masks high effective delinquency rates among those who are.

Figure 6

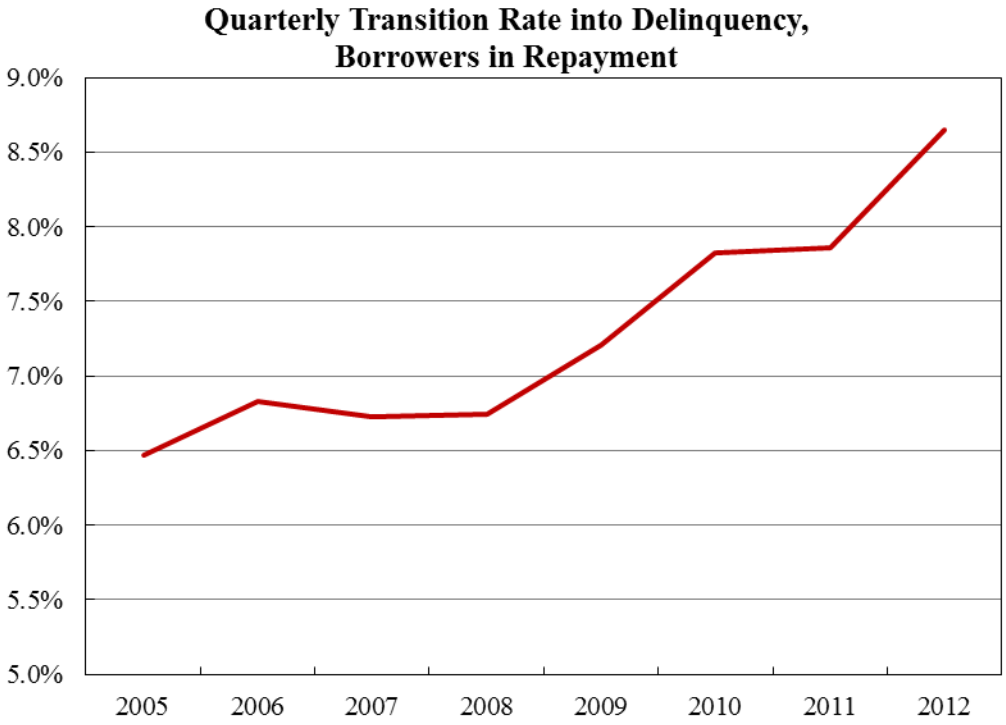


Source: New York Fed Consumer Credit Panel/Equifax

It is important to note that because of the unique character of student debt, an increasing delinquency rate defined either way does not necessarily imply that a greater percentage of new borrowers are falling behind on repayment. Borrowers who became delinquent in the past and remain so are included in the delinquency rate. Some may also default, which, again, is defined as being more than 270 days past due in the case of federal loans. Because student debt is not generally dischargeable, even in bankruptcy, the delinquency rate may continue to increase even when the percentage of borrowers becoming newly delinquent remains constant.

We address this issue in **Figure 7**, which depicts the proportion of borrowers in repayment who became newly delinquent on a quarterly basis. Here we see that in 2005 about 6% of non-delinquent borrowers in repayment transitioned into delinquency each quarter, on average. By 2012, that rate had increased to 9%. This confirms that indeed there was an increasing trend of borrowers becoming newly delinquent over time.

Figure 7



Source: New York Fed Consumer Credit Panel / Equifax

IV. THE REPAYMENT PROGRESS OF THE 2005–2012 COHORTS

Section III describes the state of repayment by the end of 2013 for all student borrowers, including those borrowers who incurred their education debt many years ago. Current higher education finance policy discussions pertain largely to recent and future cohorts of student borrowers, and the educational institutions they attend. In this section, we narrow our focus to students we observe finishing their loan accumulation, and, we infer, their schooling, between 2005 and 2012.

High rates of delinquency and default, and the high prevalence of participation in repayment-delaying programs such as deferments, forbearances and income based repayment, lead to a lower rate of balance reduction in the years after student loan borrowers leave school. In order to understand the magnitude of this delay, we use the CCP to investigate the extent of student loan repayment that recent school-leaving cohorts have achieved by 2014. Our data do not provide information on when the borrower left school, and we have no exact way to pin down the timing of graduation or drop-out. However, the available information on loan origination dates provides some evidence of the year in which the student left school. From the panel, we identify the year and month of the last student loan origination and assign it as the last year the borrower remained in school. Assuming that student borrowers take out new loans in

the last year of their postsecondary education, this approach gives us an accurate measure of the school-leaving cohort of each student borrower in our data.

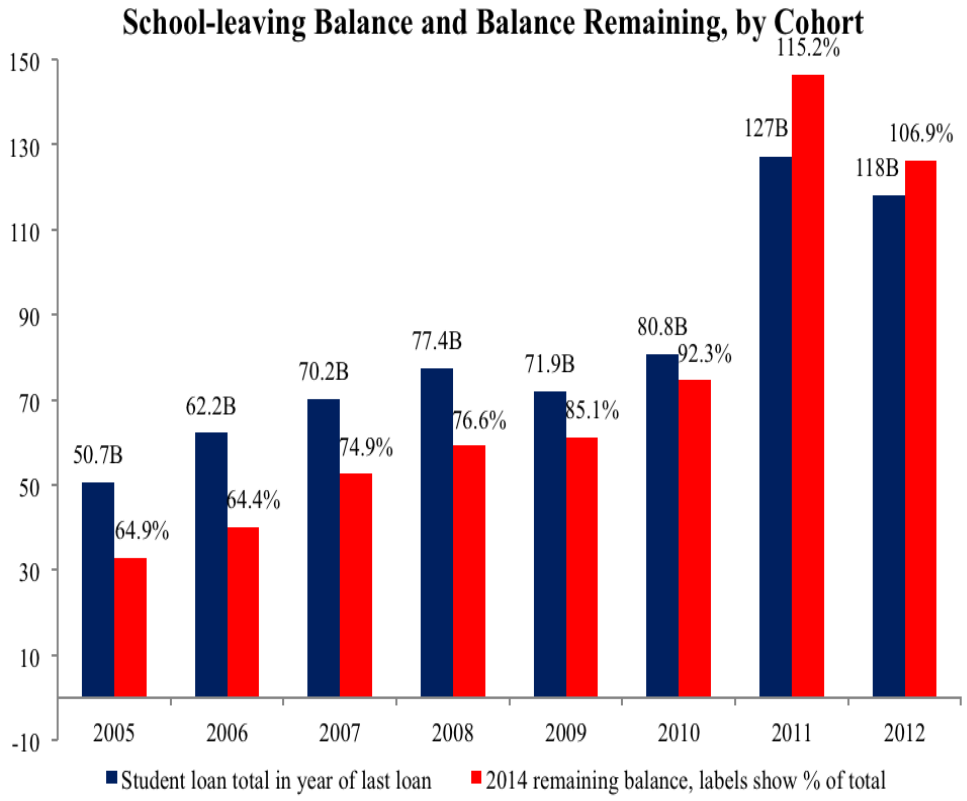
Inaccuracies in the determination of a borrower's cohort may arise when students do not borrow in the final schooling year. This may lead to an understatement in our measure of balance reduction since leaving school for two reasons. First, students still in school and not newly borrowing may accumulate more interest on their existing loans before graduating or dropping out, implying that the true school-leaving balance may be somewhat higher than what we measure. Second, standard federal student loans and many private student loans include in-school grace periods. Thus most repayment activity would begin only once the student has left school, leading us to overestimate the elapsed repayment period. The larger effects of cohort mismeasurement would appear in our approximation of delinquencies and defaults since leaving school. These would be understated as well, as we would attribute the student's final schooling year (or years) to the repayment period, and students typically remain in good standing while in school. Finally, since consolidated loans were typically dated at the time of consolidations but not related to actually taking out student loans and attending school, we did not consider loans that appeared to be consolidations based on the changes in outstanding balance and high credit information in determining a borrower's cohort.

With this cohort assignment in hand, we calculate the outstanding balance of each of the 2005–2012 school-leaving cohorts as of the second quarter of the school-leaving year. For each cohort, we record the aggregate outstanding student loan balance as of the third quarter of 2014 and the aggregate balance in each payment status: current, 30-90 days past due, 120+ days past due, and in default.

The rate of balance reduction is very low, as seen in **Figure 8**. The cohort who left school in 2005, in aggregate, has paid down their balances by only a third after almost ten years. This finding is striking given that, under a traditional ten-year student loan amortization schedule, even with a standard six-month grace period, we would expect repayment of the student loans of the 2005 cohort to be nearly complete by late 2014. Moreover, the share of the original balance that has been paid down is remarkably low for more recent cohorts: The 2010 cohort paid down only 8% of its starting balance after 4 years, and the 2011–2012 cohorts actually increased their balances after leaving school. These balances may be increasing due to interest accrued or fees during participation in payment plans such as Income Based Repayment or forbearances, or during in-school deferred payment periods for some graduate students.[14]

[14] Note that these statistics, especially for the recent cohorts, are subject to revisions if some of the borrowers return to school and resume taking out student loans.

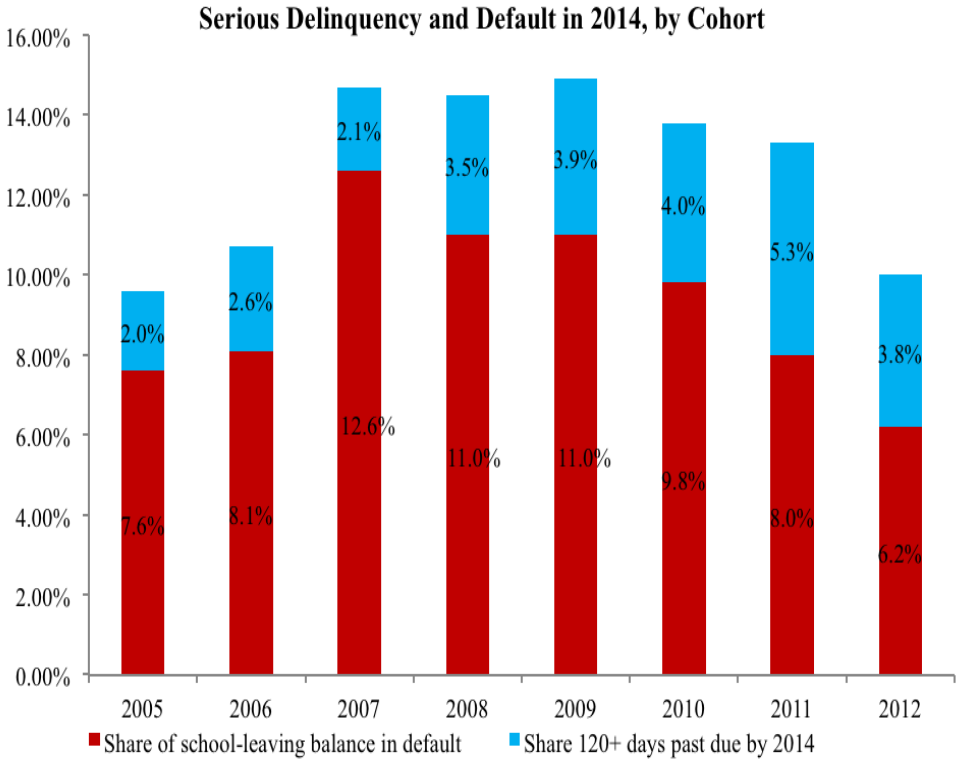
Figure 8



Source: New York Fed Consumer Credit Panel / Equifax

As seen in **Figure 9**, the proportion of the balance that is severely delinquent (120+ days past due) or in default by September of 2014 is higher for the 2007–2010 cohorts, at about 15% as a fraction of starting balance, than the previous cohorts of 2005–2006, at around 10%. It remains to be seen whether the poorer performance of the more recent cohorts reflects the negative effects of the Great Recession and the unfavorable youth labor market conditions affecting those who left school at that time, or rather the secular growth of student loan prevalence and balances among young Americans, as the growth has been disproportionally high at educational institutions with lower average wage returns to a college degree. Note that troubled balances for recent cohorts may grow, since additional borrowers will become newly delinquent and default as time progresses.

Figure 9



Source: New York Fed Consumer Credit Panel / Equifax

V. STUDENT DEBT'S ROLE ON THE HOUSEHOLD BALANCE SHEET

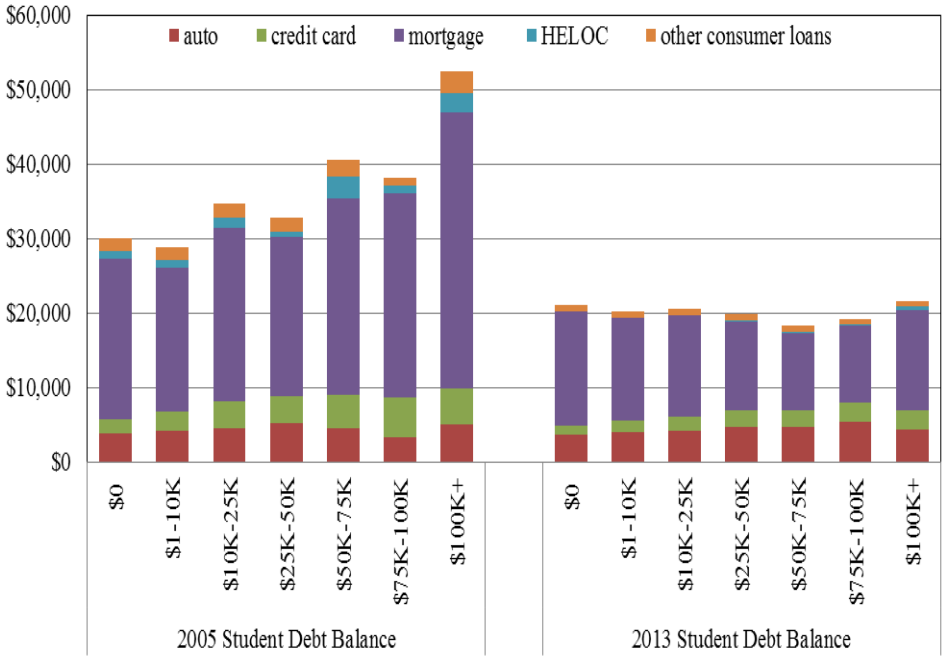
An advantage of our data is that they allow us to look at all the liabilities on each individual's balance sheet and to put educational debt and delinquencies into the broader context of household debt. In this section, we refer to non–student loan debt as "other debt."

Figure 10 reports on other debts for borrowers aged 25–30 in 2005 (left panel) and 2013 (right), by their levels of student debt outstanding. In 2005 the average amount of other debt held by student loan borrowers aged 25–30 exceeded student loan debt, which was $18,200. Interestingly, there was a positive association between student debt and other debt, such as mortgages, credit cards, and auto loans. Borrowers with higher student loan balances used to have more other debt compared to those with lower or no student debt. "After all, student debt has historically been an indicator that the borrower has some level of higher education and thus a higher permanent income, so it is perhaps unsurprising to see this reflected in the balances on other debts."[15]

[15] Brown et al., *supra* note 4, at 13.

Figure 10

Average Non–Student Loan Balances, Borrowers Aged 25–30



Source: New York Fed Consumer Credit Panel / Equifax

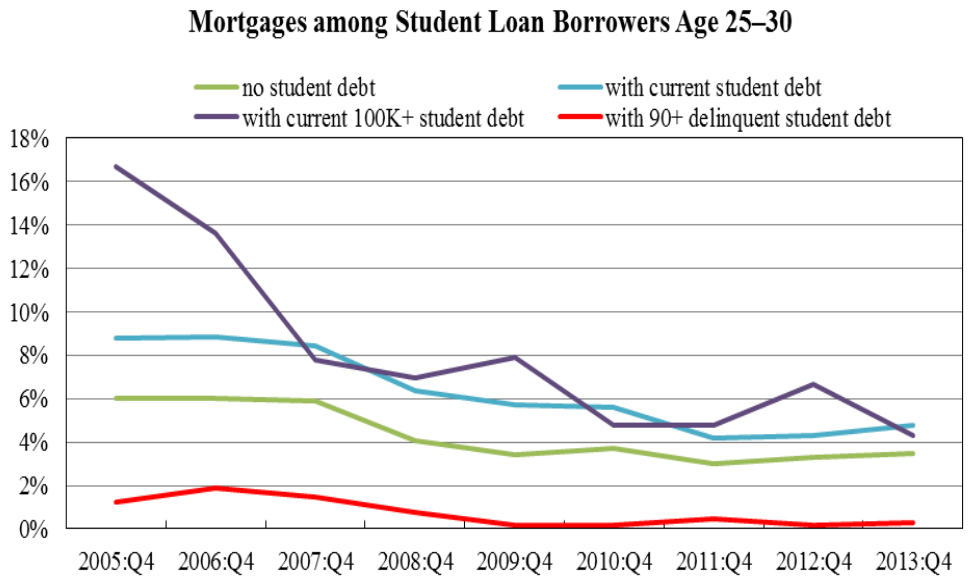
Following the general trend of household deleveraging outside of student debt in the aftermath of the financial crisis,[16] other debt balances declined for all borrowers between 2005 and 2013. But they declined much more for borrowers with student loans, so that student loan borrowers now have lower other debt at around $20,000, on average. Meanwhile the average student debt among student loan borrowers increased to $26,500 for those who were between twenty-five and thirty in 2013. The decline in other debt was especially visible among those with high levels student debt. As a result, the previous positive association between student and other debts has disappeared.

The shift we observe is an outcome of the interplay between supply and demand factors, and it is difficult to disentangle them. Borrowers with higher student loan balances may have become less confident about their future labor market and income prospects, and therefore reduced their demand for credit. On the other hand, lenders may have become more conservative in supplying credit to high balance student loan borrowers. Likely, both demand and supply factors played a significant role in the sharp reduction in the accumulation of other debt by high student loan borrowers. In *Young Student Loan Borrowers Retreat from Housing and Auto Markets*, Brown and Caldwell discuss the implications of student debt and delinquencies on access to other forms of credit such as auto and mortgage financing.[17] **Figure 11** complements that analysis. In

[16] *See* Brown et al., *supra* note 8, at 4–7.
[17] Brown & Caldwell, *supra* note 11.

2005, many young student debt borrowers, even those with a balance of more than $100,000, were able to finance a home purchase. The fact that more of these high student loan borrowers did so than those with lower or no student loan balances most likely reflects differences in income and higher postgraduate degree attainments (including holders of professional degrees with good labor market prospects). However, the large homeownership gap between high, low, and no student loan borrowers has since declined considerably.

Figure 11



Source: New York Fed Consumer Credit Panel / Equifax

Again, it is difficult to distinguish demand and supply factors, but it appears likely that the sharp decline in mortgage originations among the high student debt borrowers in part reflects a tightening of mortgage eligibility, for example, through maximum debt to income ratio requirements. Brown and Caldwell provide further evidence of a decline in access to credit by student loan borrowers, showing that while student loan borrowers aged twenty-five (or thirty) used to have average credit scores comparable to those without student debt, by 2013 they had considerably lower average credit scores.[18] This may be attributable in part to the high student debt delinquency rate.

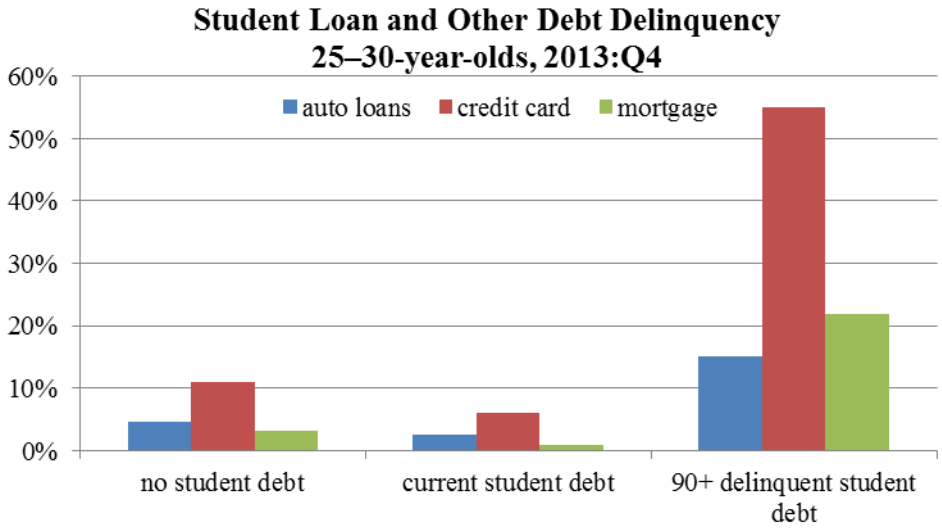
Delinquent student loan borrowers have (perhaps not surprisingly) always been much less likely—or able—to borrow for a home purchase. There are now many more delinquent borrowers than in 2005. In light of the increasing student debt burden and the growth in the delinquency rate, especially among young borrowers, student debt is

[18] *Id.*

likely to have an important influence on borrowers' use of other types of credit, particularly mortgage credit.

Figure 12 addresses the association between delinquencies on student debt and other debt. Not surprisingly, delinquent student loan borrowers are more likely to also be delinquent on other debts. Delinquent student loan borrowers are delinquent on 15% of their auto loan balances, on 55% of their credit card balances, and on 22% of their mortgage balances, and these rates are much higher compared to those with no delinquent student debt.

Figure 12



Source: New York Fed Consumer Credit Panel / Equifax

CONCLUSION

Higher education is an important investment among younger individuals to equip them for better job prospects and higher income potential, but over the last several years it has been accompanied by a growing student debt burden. Total student loan balances tripled between 2004 and 2013 due to increasing numbers of borrowers and higher balances per borrower,[19] and educational debt is now the second-largest liability on household balance sheets, after mortgages.[20] Nearly one-third of the borrowers in repayment are delinquent on student debt, a fact that is masked by the large numbers of borrowers who are in either deferment or grace periods. In aggregate, balances by cohorts are being paid down more slowly than a standard ten-year term would suggest,[21] and paydown rates are hampered by high default rates, particularly beginning with

[19] *See supra* Part II.
[20] *See supra* Part II.
[21] *See supra* Part IV.

borrowers in the 2007 cohort.[22] Further, in the most recent cohorts, increasingly popular income-based repayment options involve slower paydown.[23] Finally, while we do not establish causality, it appears that the higher burden of student loans and the associated high delinquency rate negatively affect borrowers' home purchases, other debt payments, and access to credit.

[22] *See supra* Part IV.
[23] *See supra* Part IV.