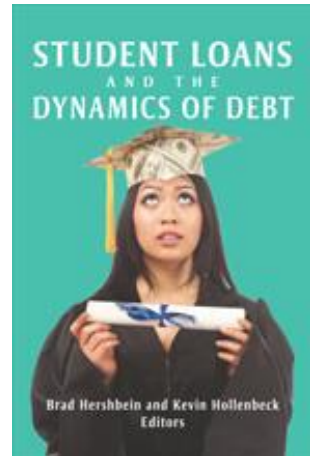# Measuring Student Debt and Its Performance

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Student Loans and the Dynamics of Debt

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Measuring Student Debt and Its Performance

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Studies continue to indicate that higher education is a worthwhile investment for individuals (Goldin and Katz 2008) and raises the productivity of the workforce as a whole (Moretti 2004). 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 (Archibald and Feldman 2010; Dynarski and Kreisman 2013). 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, partly because the currently outstanding stock of student debt includes loans made by both government and private lenders, and there exist few central repositories of information on the characteristics and performance of all student loans. In this chapter, we 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 are performing. We also briefly discuss the implications of student loans for borrowers and the economy.

DATA

Our analysis is based on data drawn from the Federal Reserve Bank of New York Consumer Credit Panel (CCP), which represents a 5 percent random sample of U.S. individuals with credit files as well as all of their household members.[1] In all, the entire data set includes anonymous credit files on more than 15 percent of the population, or nearly 40 million individuals. The panel includes information from the credit reports for those individuals for each quarter during the last 14 years, and we use data for this analysis through December 2012. 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.[2] 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 to capture information about other members of the primary individual's household. While these individuals are added to the overall CCP sample, in this chapter we focus on the 5 percent 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, and 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 24 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, these data do not distinguish between private and federal loans. Outside reports suggest that private loans account for approximately 15 percent of aggregate student debt. 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.

GROWTH OF STUDENT DEBT

Between 2004 and 2012, total student debt in the United States nearly tripled, from $364 billion in 2004 to $966 billion in 2012 (see Figure 3.1). Expressed in annual terms, this means student debt

Figure 3.1 Total Student Loan Balances, by Age Group
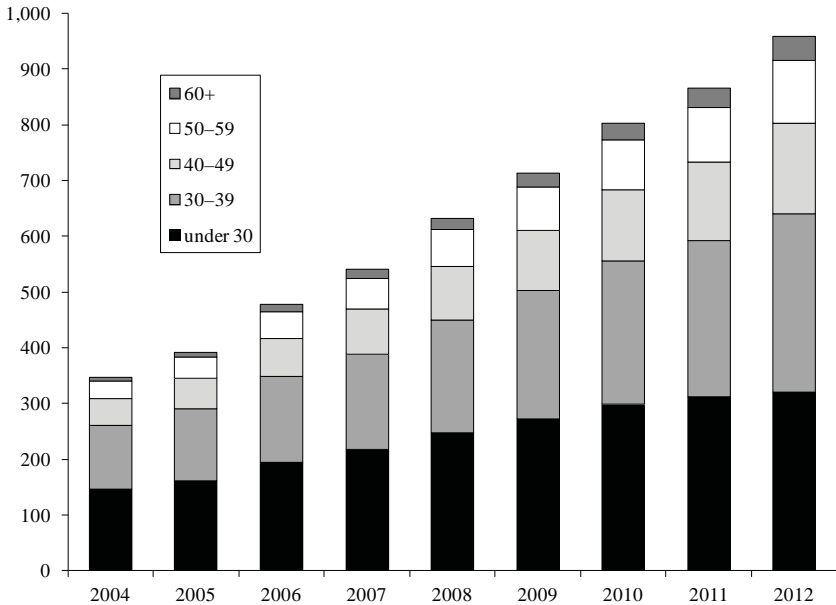
SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

increased by an average of 14 percent per year. As of the end of 2012, about two-thirds of this debt is owed by borrowers under the age of 40, with about one-third of the total being owed by borrowers under the age of 30. Americans older than 40 also have student debt, but their share is much smaller, with 17 percent held by borrowers in their 40s, 12 percent held by borrowers in their 50s, and the remainder held by borrowers 60 and older.

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, and home equity lines of credit—declined during and after the Great Recession, student debt has steadily risen, as shown in Figure 3.2 (see Brown et al. [2013] for a discussion of dynamics of other kinds of household debts during the 2000s). 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 3.2 Nonmortgage Balances Reported on Consumer Credit Reports
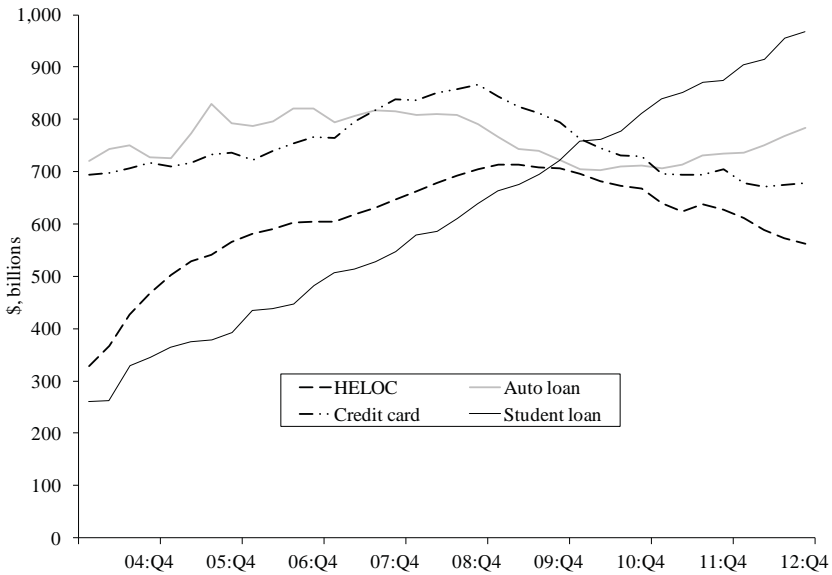
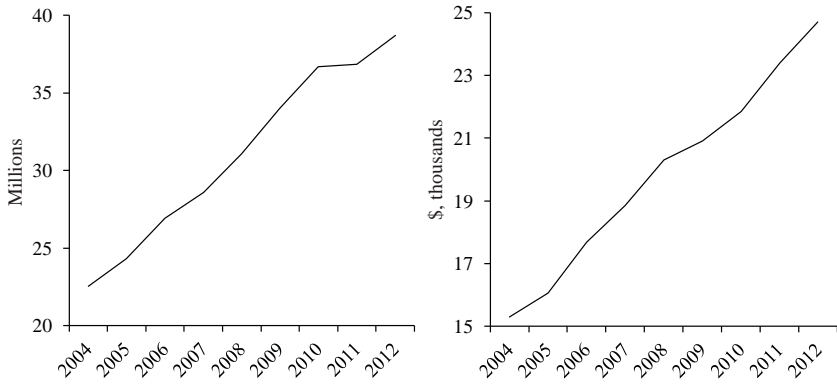SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

What accounts for the rapid increase of the aggregate student debt in this period? Our research shows that increases in number of borrowers and the average debt per person equally contributed to the growth of total student debt. Between 2004 and 2012, the number of borrowers increased by 70 percent from 23 million borrowers to 39 million (see Figure 3.3). In the same period, average debt per borrower also increased by 70 percent, from about $15,000 to $25,000.

Note, however, that there is actually a great variation in balances among borrowers, as shown in Figure 3.4. Of the 39 million borrowers, about 40 percent have balances of less than $10,000. Approximately another 30 percent owe between $10,000 and $25,000. Only 3.7 percent of borrowers have balances of more than $100,000, with 0.6 percent, or roughly 230,000 borrowers nationwide, having more than $200,000 of debt.

With respect to the rise in the number of borrowers, Figure 3.5 shows that a steadily increasing share of younger people are taking out
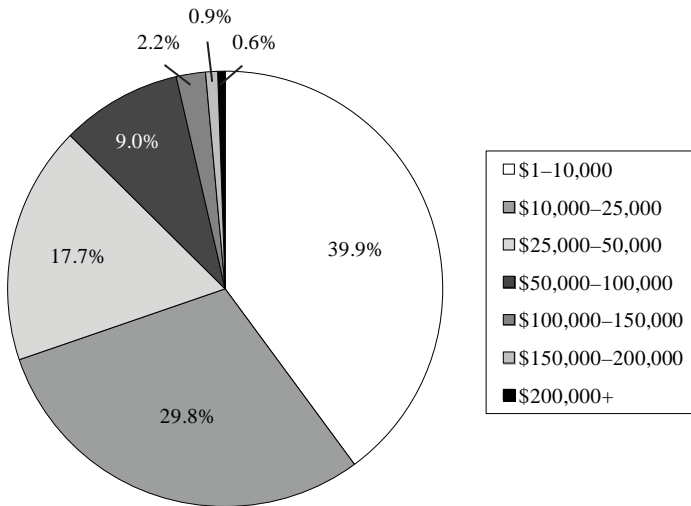
Figure 3.3 Number of Borrowers and Average Balances Per Borrower
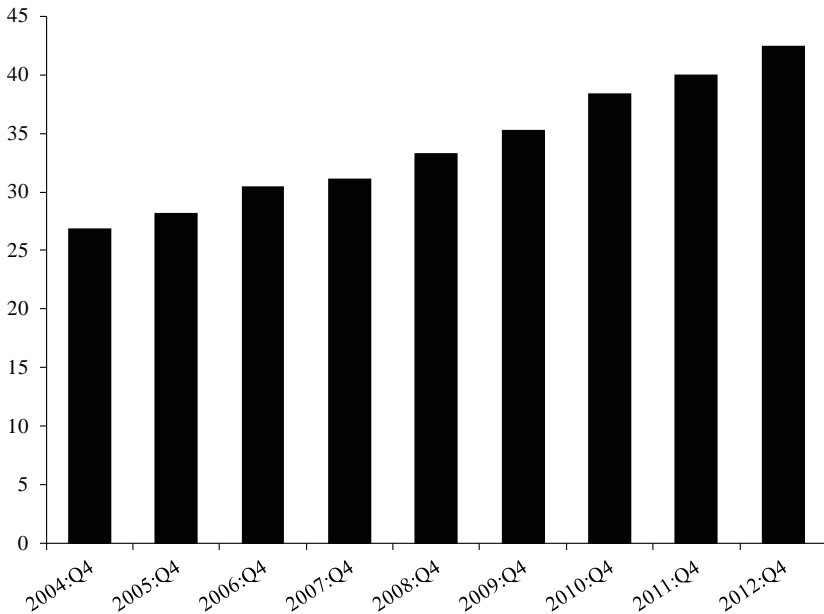

SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

Figure 3.4 Distribution of Student Loan Balances in Q4 2012

SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

Figure 3.5 Percentage of 25-Year-Olds with Student Debt

SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

student loans: in 2004, only about 27 percent of 25-year-olds had student debt, while eight years later, in 2012, the proportion of 25-year-olds with student debt increased to about 43 percent.

There are several explanations for these increases. First, more people are attending college, adding to the number of borrowers (National Center for Education Statistics 2013). 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 (Gonzales, Allum, and Sowell 2013). Third, it has become cheaper for parents to take out student loans to help finance their children's education.[3] Fourth, the cost of a college education has continued to grow sharply during the period (College Board 2013).

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, 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. 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.

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 90 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 percent, or 6.7 million borrowers, were 90 days or more delinquent on their student loan payments; see the left panel of Figure 3.6. The 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 percent in 2004 to 17 percent 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.[4] Nonetheless, the measured delinquency rate is somewhat misleading, and the *effective* delinquency rate on student debt (as we define below) is even higher. As noted above, in 2012 the measured delinquency rate among the 39 million borrowers was 17 percent. But many of the remaining 83 percent in fact were not paying down their loan balances. While 39 percent did reduce their balance from the previous quarter by at least one dollar, 14 percent of borrowers had the same balance as the previous quarter.

Figure 3.6 Delinquency Rates for Borrowers Overall and for Those in Repayment (%)
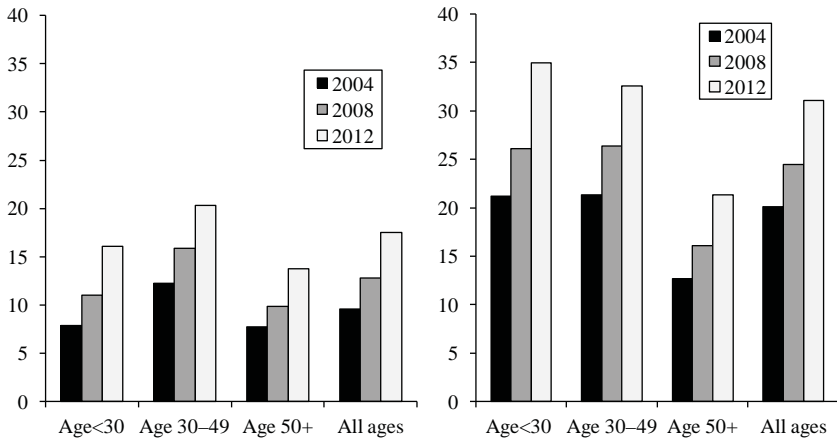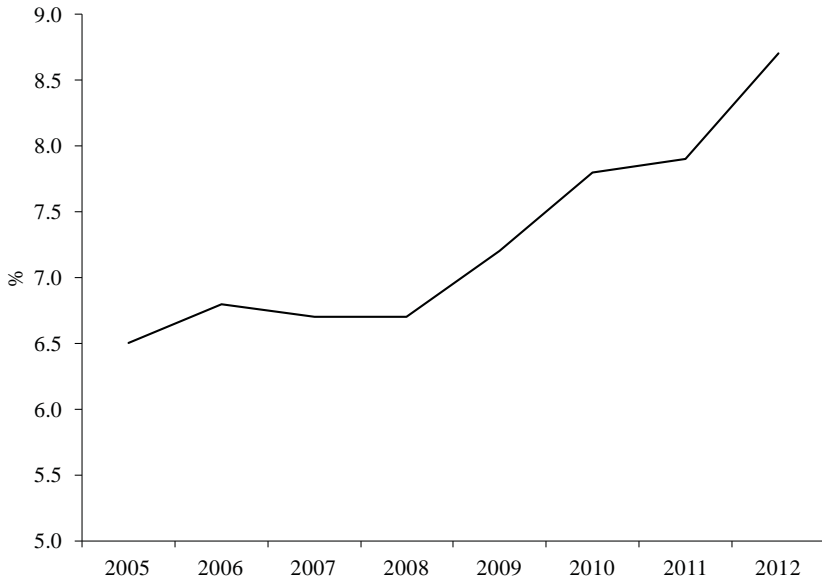

SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

A full 30 percent of borrowers actually saw an increase in their balance. In other words, 44 percent 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 percent of borrowers not in repayment; the result is shown in the right-hand panel of Figure 3.6. 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 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 3.7 Quarterly Transition Rate into Delinquency, Borrowers
in Repayment**

SOURCE: Federal Reserve Bank of New York 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 3.7, which depicts the proportion of borrowers in repayment who became newly delinquent on a quarterly basis. Here we see that in 2005 about 6 percent of nondelinquent borrowers in repayment transitioned into delinquency each quarter, on average. By 2012, that rate had increased to 9 percent. This confirms

that indeed there was an increasing trend of borrowers becoming newly delinquent over time.

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 3.8 reports on other debts for borrowers aged 25–30 in 2005 (left panel) and 2012 (right), by their levels of student debt outstanding. In 2005, the average amount of other debt held by student loan

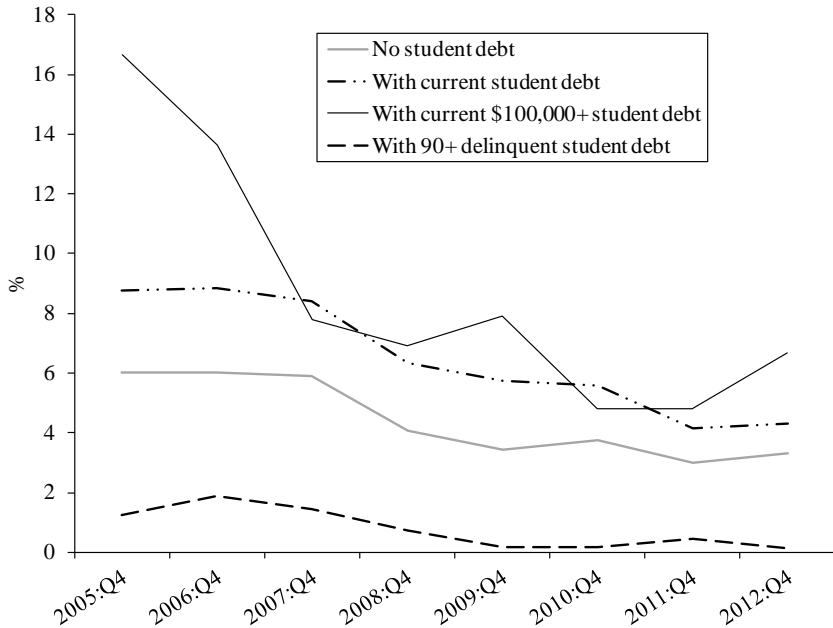**Figure 3.8 Average Non–Student Loan Balances, Borrowers Aged 25–30**
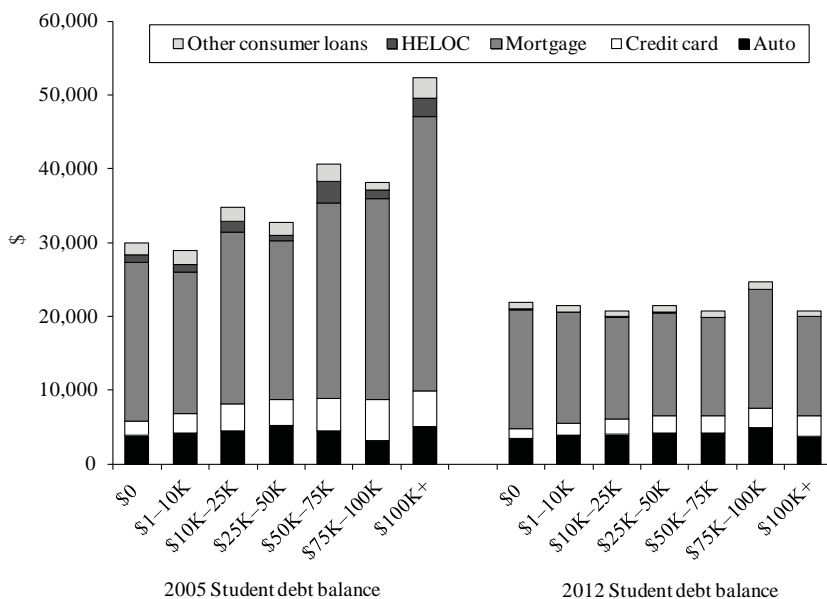
SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

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.

Following the general trend of household deleveraging outside of student debt in the aftermath of the financial crisis (Brown et al. 2013), other debt balances declined for all borrowers between 2005 and 2012. 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 25 and 30 in 2012. The decline in other debt was especially visible among those with high levels of 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 loans 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.

Brown and Caldwell (2013) discuss the implications of student debt and delinquencies on access to other forms of credit such as auto and mortgage financing. Figure 3.9 complements that analysis. In 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 3.9 Mortgages among Student Loan Borrowers Aged 25–30

SOURCE: Federal Reserve Bank of New York 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 (2013) provide further evidence of a decline in access to credit by student loan borrowers, showing that while student loan borrowers aged 25 (or 30) used to have average credit scores comparable to those without student debt, by 2012 they had considerably lower average credit scores. 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 likely to have an important influence on borrowers' use of other types of credit, particularly mortgage credit.

Figure 3.10 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. They are delinquent on 17 percent of their auto loan balances, on 35 percent of their credit card balances, and on 28 percent of their mortgage balances, and these rates are much higher compared to those with no delinquent student debt.

Figure 3.10 Student Loan and Other Debt Delinquency, 25–30-Year-Olds, 2012:Q4
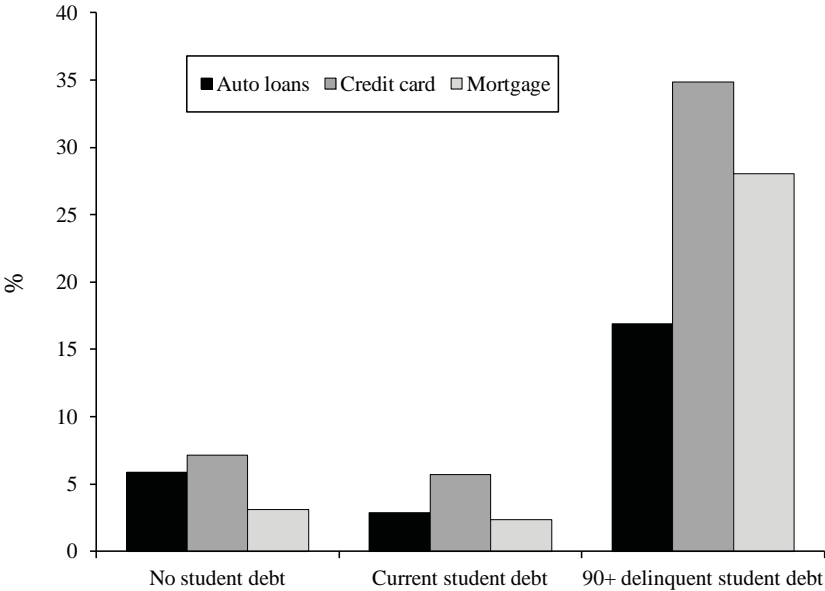
SOURCE: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

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 almost tripled between 2004 and 2012, owing to increasing numbers of borrowers and higher balances per borrower; educational debt is now the second-largest liability on household balance sheets, after mortgages. 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. 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.

Notes

1. See Avery, Calen, and Canner (2003) for a detailed discussion of the contents, sources, and quality of credit report data.
2. See Lee and van der Klaauw (2010) for further details about the sample design and content of the Federal Reserve Bank of New York Consumer Credit Panel.
3. "Student Loans," accessed February 8, 2014, http://www.finaid.org/loans/parent loan.phtml.
4. See the Federal Reserve Bank of New York's quarterly report on household debt and credit, where delinquency rates are reported as a percentage of outstanding balances rather than as a percentage of borrowers. Available at http://www.new yorkfed.org/microeconomics/data.html (accessed February 10, 2014).

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