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Federal and State Financial Aid During the Great Recession

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I. Introduction

Shifts in need-based financial aid policies in the United States, particularly the Pell grant, have historically been sporadic and incremental. Lawmakers have been reluctant or unable to achieve consensus around steady growth. Instead, the Pell grant has often stagnated and failed to maintain pace with increases in college costs. The “corrections” to the Pell have come sporadically, and lawmakers have often needed an extra push to establish consensus behind large increases in the Pell. The Great Recession of 2008 provided such a push. In the wake of the recession, Congress passed the 2009 American Recovery and Reinvestment Act and the 2010 Student Aid and Fiscal Responsibility Act. Together these two acts set in motion increases in both the size of individual Pell grants and the overall Pell expenditure.

To put these changes in historical perspective, consider that over the 38 year history of the Pell grant award, the maximum real Pell award has either been stagnant or slightly decreasing in 15 years and had less than five percent growth in another seven of those years. Only in three periods has the Pell seen substantial growth: the Pell maximum increased from \$1,050 to \$1,800 between 1975 and 1980; the award steadily grew from \$2,340 to \$4,000 from 1996 to 2004; and then it rose from \$4050 to \$5350 between 2007 and 2010. Outside of the initial years of the Pell, this last period of growth, the period of the Great Recession, was the most rapid growth over a three year period in the history of the Pell grant with a growth rate in the maximum Pell grant in excess of 32 percent.

Another way to put this historical growth in perspective is to look at the overall expenditure. With the exception of its foundational years, the annual growth in overall Pell

grant expenditure has been over 10 percent 12 different times in its history. The annual growth rate in overall expenditure has exceeded 20 percent just four times in its history. Two of those times occurred during the Great Recession, when the annual growth rates in overall expenditure were 15 percent, 25 percent, and then 64 percent. The three-year growth rate (134%) in overall expenditure over the Great Recession was over twice the maximum of the three-year growth rates over the life of the program.¹

While advocates and supporters of the Pell have lauded this increase (e.g., Shireman 2007; Katsinas, Mensel et al. 2012), it is unclear what impact this historic increase has actually had on student outcomes. In particular, this historic increase in federal financial aid comes at a time when states' investments in higher education have been declining, and for reasons we discuss below, states face unprecedented fiscal pressures in maintaining public services. Public economists have often investigated the links between state and federal policies. Federal policy is never made in a vacuum, and state lawmakers often consider changes in federal policy when forming state policies. If state policymakers considered the federal increase in the Pell grant when deciding on their own state budget allocations, they might have altered their policies accordingly. If, for example, states decided to reduce their budget allocations in response to the increase in the Pell, then the overall impact on students might be far less than anticipated in the passing of the stimulus.

The response of states to the Pell program is precisely the focus of our study. We attempt to document the trends in state and federal policies during the Great Recession. Our study does not establish the causal relationship between state and federal policies during the Great Recession, but we show a pattern that as many as half of the states have reduced the generosity

¹ The prior maximum was the three-year growth rate of 61 percent covering the period from 2001 to 2003. We have also excluded the earliest years of the program when the program was stabilizing.

of their financial aid programs in response to the Great Recession. This pattern of reducing generosity in the wake of increases in the Pell grant program is not new, and we document that this potential fiscal federalism has become more apparent since 2000.

To illustrate how state policies have changed, we provide examples from multiple states in how their specific programs and the generosity of such programs have changed over time. We use student-level data from Ohio to illustrate how students' net aid packages changed in response to the combined changes in federal and state aid policy. Using these student-level data, we provide one example of how this policy may have had disproportionate effects on the poorest of students.

Section II provides a brief overview of student aid programs in the United States. We document trends in both state and federal aid. In Section III, we document how changes in state and federal policies have changed over time. We show how the correlation between state and federal policies has changed over time, and we discuss more generally how the Great Recession only intensified fiscal pressures on state governments. We provide some examples of specific states which illustrate this trend. In Section IV, we present evidence from Ohio. We demonstrate how student aid packages have changed during the Great Recession, and we show how these changes have differed across students. In Section V, we try to interpret these results particularly in relating them to the theory of fiscal federalism.

II. Background on State and Federal Student Aid Programs

Federal and State Student Aid Programs

The idea of broadly targeted federal financial aid for higher education was publicly proposed halfway through the twentieth century, although not enacted for another quarter

century. In its 1947 report, the Truman Commission imagined a larger role for the federal government in higher education; in particular, they suggested making the educational provisions of the Servicemen's Readjustment Act of 1944 (or the GI Bill) into a larger public policy program (Thelin 2004).

These ideas resonated politically on some level. At the beginning of 1960s several states took up the ideas presented in the Truman Commission report, developing their own various financial aid programs (Hansen and Stampen 1994). Twenty-eight of them had programs before the Pell Grant was created by the Higher Education Amendments of 1972, and most of the other states came on board in its immediate wake (Gladieux, Hauptman et al. 1994).

However, through the 1960s there was little federal political support for these recommendations, and research contracts instead were the predominant federal funding mechanism for higher education, spurred by federal policy for competitive scientific research and development (Thelin 2004). The unequal distribution of funds was not politically savvy; in 1960 a majority of these federal dollars went to only six schools, and to only a handful of departments at each of those schools (Thelin 2004). This funding arrangement further suffered from the growing distrust of awarding federal contracts to campuses with civil unrest (Thelin 2004).

In 1968 the financial aid ideas from the Truman Commission were revived in the Carnegie Commission for Higher Education's report, *Quality and Equality: New Levels of Federal Responsibility for Higher Education*. In particular, the report recommended that generous federal funds for college be given as "opportunity grants" directly to students to attend colleges of their choice. The report, revised in 1970, was popularly seen as the basis of the Basic Educational Opportunity Grants created in 1972 (Lagemann 1989).

By this time political support had gathered for these portable student grants for full-time undergraduate study, soon called Pell Grants. Student lobbying groups, the Carnegie Commission, and the Rivlin Commission championed it, over objection from the academic establishment. Legislators saw great direct benefits to their constituents, especially if their state colleges and universities did not get exclusive federal research grants. (Thelin 2004). Making money available to all accredited colleges, the program brought low-income students many more choices while carrying funding to a broad array of institutions (Thelin 2004). The federal bill also encouraged the growth of state-level aid with a State Student Incentive Grant that would match states' need-based grant dollars (Gladieux, Hauptman et al. 1994).

Other Forms of Financial Aid

State and federal need-based programs are certainly not the only other source of funding. The College Board estimates that students in the 2009-10 school year received \$154.5 billion in financial aid (College Board 2010). Of this, 18 percent, or about \$28.2 billion, came through the Federal Pell Grant program. States provided an additional \$8.6 billion in grants to students, and institutions, an additional \$26.0 billion. The largest component of aid is the Federal Student Loan Program, which makes up \$65.8 billion, or about 43 percent, of all federal aid. Until recently, the federal government did not award merit-based financial aid. The Federal Academic Competitiveness Grant is the first federal award to include a merit component. Other federal grant programs, including the Academic Competitiveness Grant and SMART grants, made up an additional \$12.0 billion in aid. Pell Grants and state need-based grants make up about one-quarter of the overall financial aid awarded to students

States need- and merit-based aid programs have existed alongside each other in many states for decades. The College Board, relying on data from NASSGAP, show that non-need-based grants increased sharply throughout the 1990s. In the 1989-90 school year, non-need-based grants made up about 11 percent of states' total expenditure on student grants for college. Need-based grants made up the other 89 percent. By 2000, non-need-based grants rose to 22 percent, and the average expenditure in such programs per student tripled. Non-need-based grants continued to rise through the 2000s although like need-based grant aid, their generosity has decreased in the last few years.

State appropriations are another other way in which states have provided support to public and private institutions. In the 2010-11, excluding the federal stimulus dollars, states gave about 76.1 billion dollars to higher education (College Board 2011). This is a considerable decline from the peak in appropriations of 84.7 billion in the 2007-2008 academic year. During the 2010-11 school year, the College Board estimates an increase in appropriations of about 2.8 billion as a result of the federal stimulus. The overall size of the appropriations budget is nine to ten times the size of student grant programs. These often cover operating expenses and other regular budget items.

State Budget Crunch

There is a substantial literature and set of media reports which document the ongoing fiscal crises that many states face in their budgets. While declining revenues during the Great Recession have intensified the fiscal pressures states face, a growing amount of fiscal pressure, particularly with respect to the funding in higher education, has been building even before the recession.

Kane and Orszag (2003) discuss these fiscal pressures. They focus on the expansion of Medicaid and its growing costs during the 1990s. They show that Medicaid expenditures depleted state budgets, and states decreased their investments in higher education as a result of these growing costs. Rizzo (2004) builds on Kane and Orszag by investigating how primary and secondary school spending might also have increased the fiscal pressure on states' higher education budgets. Rizzo argues that equalization of funding forced states to make greater financial commitments to higher education. As states struggled to increase spending in low-income districts, they reduced the funding of higher education. As much as 25 percent of the increase in funding for K-12 came from decreasing investments in higher education. This reduction in state appropriations affected tuition costs and explains part of the rise in college tuitions during the 1990s and 2000s.

Theories of How States and Institutions Respond

Quite a few studies investigate how higher education institutions adjust tuition levels in relation to federal financial aid. The Bennett hypothesis, suggested by Secretary of Education William Bennett in 1987, is that colleges and universities appropriate Pell grants via tuition increases. Empirical evidence is mixed. Singell and Stone (2007) find that tuition at private institutions and out-of-state tuition at public institutions increases dollar for dollar with the Pell, but in-state tuition does not respond. Rizzo and Ehrenberg (2004) find that higher in-state tuition is associated with increased federal and state need-based grants and subsidized loan access, but states raise need-based aid at the same time. Long (2004) finds only weak increases in tuitions after the HOPE Tax Credit and Lifelong Learning Tax Credit: public two-year colleges charging

\$1000 to \$2000 with large numbers of students eligible for the credits increased tuition 18% more than other colleges, but there was no such change for public four-year colleges.

Recent working papers suggest evidence of capture in certain contexts. Cellini and Goldin (2012) find evidence for higher tuition at for-profit Title IV schools (eligible for federal funding) relative to non-Title IV schools. They use for-profit schools that offer certificates, Associate's degrees, and non-degree programs and control for school quality (for instance, passage rates on state cosmetology exams) where possible. Turner (2012) uses a combination of regression discontinuity and regression kink designs to identify changes, finding that 16 percent of Pell Grant aid is captured by schools in prices, with patterns varying by institution type.

As Hoxby (1997) mentions, federal financial aid may not be salient enough to many higher education institutions to have a large effect on their tuition policies; in contrast to health care payments, the federal government is a fairly minor payer for most schools. This would largely depend on how many students are eligible for aid and how high tuition levels are relative to grant levels. Federal aid policy may be more salient to large public schools, but they face opposing political considerations when setting tuition. However, an entire state will certainly have a large number of needy students, so the level of Pell Grant funding should be salient to any state offering its own portable need-based financial aid packages.

III. Relationships Between State and Federal Programs

Historical Aggregate Relationships

Historically, states have had the largest responsibility in funding higher education. As we discussed above, states have a variety of ways in which they invest in higher education. The two largest programs are the direct operating and capital subsidies offered to public universities and

the second include student-level subsidies, including both need- and merit-based awards. As we discussed above, our focus is on student-level, need-based portable subsidies.

We focus on these need-based subsidies since these are the program which runs most parallel to the Pell grant program. Changes in the availability of Pell grant funds directly affect the funds available for the students eligible for these state, need-based awards. Additionally, these state need-based aid programs have more visibility as media and students' direct reports from financial aid offices are more likely to mention these programs and their visibility.

Figure 1 shows the generosity of the Pell grant and state need-based awards over time. The data for this come from the College Board. The College Board estimated these data by combining data from the NASSGAP survey with data from IPEDS. The College Board adjusted these to be in current dollars. As the figure shows, the general trend over time is for increased levels of state need-based aid over time. The peak was in 2007-08 when per student spending was nearly \$500. Once the recession began, need-based aid declined in 2008-09 and again in 2009-10.

We have also plotted in Figure 1 how the Pell grant, in real dollars, has changed over time. The two have similar trend lines in that both have increased in generosity over time. This increase in generosity is small relative to the corresponding trend in tuition costs (College Board 2011).

There are a few interesting patterns when we compare these series. In the long period leading up to 1990, Pell grant and state aid seemed to move in unison. When the Pell grant increased, states expanded state aid as well. In fact, the correlation between the Pell and state need-based grants was about 0.37 between 1974 and 1990. For each five-year period, we computed the correlation. In each year, we cycled the oldest observation out of the computation

and added the new year's observation. This set of correlations is always positive, and it exceeds 0.5 for more than half of the sample. Interestingly, as Figure 2 shows, Pell grant maintained a negative correlation with unemployment rates. Throughout the 1970's and 1980's, real Pell grant aid went up when unemployment rates were low and vice-versa.

These patterns changed in 1990. First, starting around the recession of 1990, the real value of the Pell grant began falling. The Pell's real value continued to decline until around 1996. Starting in 1996, the Pell began a sustained increase which lasted through 2004. State grants followed a different pattern. Throughout the 1990's and 2000's, state need-based aid had a period of sustained growth. What is interesting is that this growth seemed to accelerate when the Pell's growth was slow (early 1990s, 2004-2008) and decelerate or even drop when the Pell's growth was large (2001-2003, post-2008). Aside from the late 1990's where the Pell and state awards seemed to have a positive correlation, the correlation in every other period since 1990 has been negative. This is a dramatic change from the pattern prior to 1990.

The pattern between the business cycle and Pell grant expenditure seemed to change as well after 1990. While unemployment rates and the real Pell grant maintained a negative correlation (i.e. unemployment rates increased and Pell decreased) throughout the 1990s, the correlation was considerably lower in its absolute value in the 90s (-.141) versus the 80s (-.320). After 2000, the correlation changes dramatically turning from negative to positive (.726). Unlike any other period in the history of the Pell, policymakers started to increase the Pell during economic downturns while letting it stagnate (in real terms) during economic upswings. Conversely, state policymakers maintained a negative relationship with the business cycle. When unemployment rates increased post 2000, states decreased (or at least slowed the growth) of state need-based aid programs.

Why did this change occur? There are a number of plausible explanations for this pattern. First, as we discussed in the prior section, states faced unprecedented fiscal pressures during the 2000s. The decline in state revenues during the 2000 and 2008 recessions, and the increased pressure on maintaining state fiscal programs might have forced states to cut other state programs.

Another and potentially complimentary story is the one related to fiscal federalism that we described above. It is not unrelated to the fiscal pressures that states have faced under the most recent recessions. States face a dilemma anytime that they consider budget cuts. The story of fiscal federalism in a period where budget cuts are happening is about strategically coordinating federal budget changes to state spending cuts. If the federal government takes on a more significant role in funding a particular program, the state, regardless of the fiscal pressure they face, can strategically make decisions in response.

The underlying phenomenon here is a shift in the way that Pell grant increases occur rather than a change in state policies. As Figure 3 illustrates, the relationship between real state need-based grants and the business cycle has been fairly constant over time. With only a few exceptions, states' commitments to need-based student aid have been pro-cyclical over time. As unemployment rates have risen, states have generally decreased their overall expenditure on state-based financial aid. Pell grant generosity followed a similar pattern prior to 2000. After 2000, the federal government began using the Pell as a countercyclical measure.

We discuss this more below. However, the newly found countercyclicity of the Pell creates a policy hedge for states. Prior to 2000, students could face "triple" cuts. An economic downturn could impact their family's finances directly, could reduce their Pell grants, and could

reduce their state need-based grants. With a countercyclical Pell, the last two effects could offset each other.

Additionally, a goal of this paper was to document the relationship between state and federal spending during the Great Recession. A key point in examining the correlations between the business cycle, and state and federal need-based aid is that the structural change in these correlations likely began around 2000 and pre-dates the Great Recession. The magnitude of the increase during the Great Recession might have been historic, but the increase itself was consistent with the early 2000s. We will return to this discussion in the final section of the paper.

Heterogeneity in States' Responses

While thus far we have described overall trends across states, we now turn our attention to understanding the heterogeneity in state policies. For this exercise, we rely on data from the National Association of State Student Grant and Aid Programs (NASSGAP) (1972-2012). NASSGAP has annually collected and published data on state financial aid for higher education since 1969. It collects information on programs and spending directly from its members, the state agencies that administer state-funded financial aid. It is commonly used as a data source by organizations such as the College Board and the National Center for Education Statistics. NASSGAP is one of the few sources of state need-based aid data. Sources like IPEDS and NPSAS often conflate receipt of state need-based aid with institutional aid. Even so, the state data are varied in their quality. NASSGAP surveys state representatives, and there are some

inconsistencies in the data.² The data consistently report the overall expenditure of grant aid categorized by level (undergraduate or graduate) and whether awards are need-based. Other measures reported vary by year. From 1973 through 1994 NASSGAP directly reports the number of students per state receiving grants. From 1995 through 2002 we construct this from NASSGAP estimates of the percentage of students receiving need-based aid. From 2003 through 2010 we use the count of recipients in the state's primary need-based aid program. Thus, the number data change over time in how they are measured, but they are consistent across states within any year.

There is substantial variation across states and time in state-need based aid programs. Most states have had an active state need-based program in every year since at least 1982. There are a few exceptions when states are between programs (e.g. Wyoming 2001) or when states have opted out of programs for a few years (e.g. South Dakota 1998-2009). In most years, there might be a single state without a program. The only exception was between 1999 and 2003 when in any year two to four states were without a program in any given year.

Our concern is on how state programs relate to federal programs. To get at this, we examine the correlation by decade³ between federal and state programs. We define our measure of state need-based aid to be the average aid per student receiving aid. We do this in Figure 4. In the first decade (pre-1990), the average correlation between each state's need-based program and the Pell grant is 0.76. Without exception, the correlations between state need-based programs and the Pell grant are positive in this period.

² For instance, the classification of the large DC TAG program differs across years, leading to substantial variation across years. As a federally funded program, DC TAG is excluded in some years. With a means test of one million dollars, the program is classified as non-need-aid in some years and need-based aid in others.

³ The "decades" are only roughly approximated. They go from 1982-1990, 1991-2000, 2001-2007, 2008-2011.

When we examine the 1990s, we see movement among multiple states. The average correlation remains positive but drops by almost half (to 0.40). About 25 percent of states have a negative correlation between Pell and their programs. From 2000 to 2008, the average correlation fell again (falling to 0.31); however, only 20 percent of states had negative correlations. While there are fewer states with a negative correlation, the negative correlations are stronger than in the prior period causing the average correlation to drop. Finally, we compute the correlation for the period after 2008. This is the period after the start of the Great Recession. Over this period, the average correlation between state and federal policies becomes even more negative, and half of the states have a negative correlation with the level of the Pell.

The exercise of examining the relationship between state and federal policies raises two additional observations. First, there is substantial heterogeneity across states. Many states have maintained positive relationship with state policy even through the Great Recession. Some of the positive relationships might overstate the correlation. Oregon, for example, uses a biennial budget. In the first year, they had excess demand and hence a large surge in overall expenditure; however, this has depleted the available funds for the second year. In 2009, \$97.1 million was approved for the Oregon Opportunity Grant over two years (Oregon University System 2010); however, spending for the 2009-2010 school year drastically increased to \$76.5 million as "huge numbers of recently unemployed, high-need students to return to postsecondary education, resulting in an explosion in demand for financial aid" (Oregon Student Access Commission 2012) with a large state share as defined by the new Shared Responsibility Model. This left only \$20 million for the 2010-2011 school year. While Oregon might be an exception, many states have maintained the generosity of their programs for the average student receiving grant aid.

Second, in lieu of the change in the cyclicity of the Pell, the correlation between Pell and state grants might have different meanings over time. As we discussed above, the Pell grant underwent a systematic shift around 2000 going from procyclical to countercyclical. State programs that were positively correlated with Pell prior to 2000 were behaving procyclically while after 2000 positive correlation suggested countercyclical behavior. In fact the real Pell declined by 2 percent from 1982 to 1990 and by 13 percent from 1991 to 2000. By contrast, the Pell increased by 8 percent from 2000 to 2008 and by 18 percent from 2008 to 2010.

To sum up to this point, the results based on the NASSGAP data are quite inconclusive. Generally, they show that state and federal need-based aid seemed to undergo some fundamental transitions. Pell grant aid seemed to shift from a procyclical program to a countercyclical program. On average, states' responses were more muted. They continued to behave procyclically, and on average, their relationship became increasingly negatively correlated to the Pell grant schedule. However, these average changes in states' programs hide substantial heterogeneity. Over time more and more states have gravitated, whether consciously or not, toward having their respective programs counterbalance changes in the Pell program. During the Great Recession, states were almost equally divided between expanding and contracting. There is suggestive evidence that changes in the relationship between the Pell and some state programs began occurring as early as 2000.

Examples of Specific State Policy Shifts

Another way to detect how the relationships between state and federal programs have changed over time is to examine the specific rules of the programs to see whether the rules of these programs have influenced the correlation. In some cases, states have actively altered their

programs to account for the Pell and its subsequent changes. We provide two examples (Oregon and Minnesota) of these changes in this section. In the next section of the paper, we analyze primary student-level data from Ohio to illustrate both the relationship between Ohio's program and the Pell and the distributional consequences of state and federal policy changes on students' aid packages.

Minnesota

Minnesota had an early Assigned Student Responsibility Model, lauded by the Carnegie Council on Policy Studies in Higher Education in 1979, which turned into a Design for Shared Responsibility (Misukanis 2008). The Minnesota State Grant program first determines how much students at each institution should contribute, from their own work, savings, and borrowing; this is set as a percentage of the Recognized Price of Attendance (46% of this price, in 2008). Price of Attendance includes both tuition and fees (capped for private programs, if tuition exceeds the allotted amount) and Living and Miscellaneous Expenses (LME). After subtracting out the Assigned Student Responsibility, the family portion is subtracted (EFC adjusted to not count again student resources), leaving the Taxpayer Responsibility. First the Pell Grant is charged, and then Minnesota grants are set to cover the remainder. This last point is important in that Pell, students' contributions, and family contributions are accounted for prior to any consideration of Minnesota grants. Thus, holding costs and incomes constant, a one dollar increase in the Pell grant leads to a one dollar decrease in state aid. Additionally, if appropriations are too low, then students and families must make up the difference (Misukanis 2008).

When the Pell Grant increased in 2009, Minnesota State Grants decreased. "Money made available by the Pell Grant increase was used to increase LME [Living and Miscellaneous Expense Allowance] and the four-year tuition maximum, which contributed to an increase in the number of recipients" (Grimes 2010). This shared model led to a negative correlation between state and federal aid programs.

Finally, as we discussed above, it is important to recall that need-based aid is just one component of states' overall aid to schools. For example, in 2009, Minnesota public institutions awarded \$144 million in institutional aid. This is substantial relative to the \$264 million Minnesotans received in Pell Grant funding and \$156 million from Minnesota State Grants in the same year (Grimes 2010).

Oregon

Oregon began to look for a new financial aid model in 2005, spurred to change by a "financial aid wall" that abruptly cut off all assistance to students when family incomes exceeded a cutoff (Mills 2007). Looking to end this sharp discontinuity, Oregon adopted its Shared Responsibility Model in 2007. It requires students to submit their FAFSA, then calculates state grant awards based on cost, demonstrated need, and federal aid. Specifically, the state subtracts from its calculated cost of education (including cost of living) the student share, the Expected Family Contribution, Pell Grant, and an assumed federal tax credit. What remains is the state award amount, though it may be reduced by about a fifth of the EFC in tough financial times. The student share is calculated based on working 15 hours a week all year at minimum wage, plus \$3000 in loans for students at four-year institutions (Oregon Student Assistance Commission 2010).

In 2007, the program was funded for up to \$106 million dollars over two years. As mentioned above, a similar biennial amount was approved in 2009. Although the Oregon Student Access Commission put into place several policies meant to limit costs, large numbers of needy students received awards using most of this during the 2009-2010 school year, leaving only \$20 million for awards in 2010-2011 (Oregon Student Access Commission 2012).

IV. Case Study of Ohio

Ohio is a good example of how states altered their need-based aid programs during the Great Recession. Ohio's need-based grant program in higher education is the Ohio College Opportunity Grant (OCOG). Prior to the 2009-2010 school year, OCOG was awarded based on families' EFC. Similar to the Pell Grant, OCOG was a fixed amount based on the EFC of the family. While the Pell grant in 2008-2009 was available to families whose EFC was less than \$4,040, OCOG was available only to families whose EFC was at or below \$2,190. In the 2008-2009 school year, OCOG ranged from \$2,496 to \$300 in the public sector. Awards in private colleges were twice as high while awards in career colleges were 60 percent higher. OCOG imposed an additional constraint in that families had to have an income below \$75,000 regardless of EFC (Ohio Association of Student Financial Aid Administrators 2008).

In the wake of the Great Recession and the passage of the stimulus package in February 2009, Ohio dramatically altered the OCOG schedule in July 2009. OCOG became a flat award of \$1,008 for any family with EFC at or below \$2,190 and with an income less than \$75,000. Students at private colleges continued to receive higher awards, and their award was \$2,256. Students at for-profit colleges were excluded from the grant. The biggest exception came for

students attending community colleges or branch campuses. These students were also excluded from the grant (Foust 2009).

Figure 5 illustrates the change in the OCOG from 2009 to 2010. The figure only holds true for students attending 4-year colleges at the main university campuses. For students attending 2-year colleges or branch campuses, the OCOG in 2010 would have been zero.⁴ For most EFC ranges covered in the figure, there is a downward adjustment in student's state need-based aid awards. The most needy students (i.e. EFC=0) experience a decline in aid of 60 percent.

Not every student was worse off with the policy change. While an EFC of \$2,100 represents a low income student (the highest EFC to maintain Pell eligibility was \$4,041 in 2009), the student's family still has more resources than a student with an EFC of \$0. Students with an EFC of \$2,100 experienced more than a threefold increase in their OCOG award from 2009 to 2010.

Figure 6 shows the overall awards to students who attended university main four-year campuses in 2009 and 2010. For low values of EFC, overall awards were higher in 2009. The decline in OCOG was even more than the increase in the Pell. At an EFC of about \$1,000, the overall awards are roughly equivalent, and in higher EFCs the increases in OCOG and the Pell make it so the total award increases from year to year. The Student Aid and Fiscal Responsibility Act in 2010 expanded eligibility for the Pell from EFCs of \$4,041 to EFCs of \$4,617 – increases in these ranges are entirely due to the new Pell eligibility. It is important to note that awards in Figure 6 only cover students attending the main university campuses.

⁴ OCOG awards for students attending university regional branch campuses and Central State University were also reduced to \$0 in 2010, while students at Shawnee State University saw a reduction to a flat \$480. For convenience in the following discussion we exclude Shawnee State, Central State, and the branch campuses. We include technical colleges and two-year state colleges in the category of community colleges.

Students at regional campuses and Central State did not receive OCOG awards in 2010, while students at Shawnee State received a reduced award in 2010.

Figure 7 shows how the award schedules for the community colleges and regional branch campuses changed from 2009 and 2010. In these colleges, total awards were much lower in 2010 than in 2009 for EFCs below about \$2,000. For EFCs over \$2,000, the total awards improved from 2009 to 2010. Figure 8 sums the changes for both community colleges and university main campuses. The plots show how awards changed relative to the prior year for each EFC.

One final way to describe the change in the policies is to measure the “recapture” rate of the federal subsidy. While Ohio may well have reduced OCOG even without the stimulus package, suppose that Ohio’s intent was to reduce the burden of OCOG while maintaining the same affordability. We have already shown that at some EFC levels the loss from OCOG was much larger than the \$620 increase in the Pell. In these cases, Ohio more than fully captured the federal subsidy. Figure 9 shows our estimates of the recapture rate. We limit these to be between 0 and 100 percent since we are not considering redistribution yet. For community colleges or branch campuses, the recapture rate is almost full across the full range of EFCs which had previously been eligible for financial aid. Above about \$2,000, the recapture rate falls below 100 percent. In the range where the recapture rate is full, the state captures the entire increase in the Pell, and students see no improvement in their affordability. When the recapture rate falls below 100 percent, students start to see benefit relative to the pre-existing state policy, but this is often split between the state and the student. For students at the university main campuses, the recapture rate is full until an EFC of about \$1,000 and then it slowly fades out until an EFC of about \$1,500. After \$1,500, the state has no recapture of the federal subsidy.

So far, we have only examined the state policy in the abstract. The overall impact of the policy in terms of redistribution across students and in terms of overall state budget relief depends on the distribution of students across EFC categories.

We have data on specific students and their Pell and OCOG awards for the 2009 and 2010 fiscal years. We only observe the students if they completed a FAFSA, and many students who file FAFSAs in one year do not do so in subsequent years (Bettinger 2004). Additionally, many universities require students to complete FAFSAs even if they are not eligible for Pell aid. The FAFSA is used to determine subsidized and unsubsidized loan eligibility, work study, and other institution-level financial aid programs. We do not observe aid given through these channels. Our focus is on students who are Pell eligible, including its extension to individuals with an EFC of \$4617 in 2010. About 47.6 percent of FAFSA filers in 2009 had EFCs below this threshold while 51.8 percent of FAFSA filers in 2010 had EFCs below this threshold.

Any analysis comparing students in different years faces a series of obstacles. Given the recession, incomes may have fallen (which might explain why more FAFSA filers had EFCs below \$4,617 in 2010). Students may have chosen different colleges (given that the relative price of two-year versus four-year college changed). More students may have attended (or not) as a result of a change in their financial status. We will discuss these possibilities below in greater detail. For the first round of analysis, we will assume that the distributions of students who file FAFSAs, across EFCs, and across sectors of higher education are comparable across time.

Figure 10 shows the distribution of EFCs across 2009 and 2010. In 2009, about 50 percent of students whose EFC was below the Pell threshold had an EFC of 0. The distribution

was much more uniform once above an EFC of 0. In 2010, just over 60 percent of students whose EFC was below the Pell threshold had an EFC of 0.

Figures 11 and 12 show the breakdown in each year by university main campuses⁵ and other campuses (branch campuses and community colleges). In both 2009 and 2010, students not attending the university main campuses have significantly lower EFCs. In both 2009 and 2010, students who are Pell eligible at university main campuses have EFCs that are about \$380 higher than students at other campuses. Similarly, students at university main campuses are 17 percentage points less likely to report an EFC of zero than students at other campuses. To put this in context, across both years only about 37 percent of students attend university main campuses, and percent in university main campuses actually fell by almost three percentage points between 2009 and 2010.

The shifts in the Pell and OCOG schedules suggest a dramatic reduction in the overall amount of state financial aid awarded in 2010. This is not uniformly the case because the underlying population shifted. In fact, in our sample, we see an increase in the number of FAFSAs being filed by Pell eligible individuals in 2010. The increase in the sample and the shift to the left in the underlying distribution of EFC from 2009 to 2010 is consistent with economic times becoming considerably worse. Nonetheless, given that the change in OCOG most dramatically affected students with an EFC of zero, the policy change was so significant that it led to significant decreases in most students' total aid awards even after controlling for the increase in the historic increase in the Pell. About 74.5 percent of students had a lower total aid award in 2010 than they would have had with the same EFC in 2009 despite the increase in the Pell.

⁵ We include Shawnee State and Central State in these computations.

As the OCOG schedules implied, the losers in the policy changes in Ohio were most definitely the individuals with the lowest incomes. For these individuals whose awards were lower due to the new policy, the average family income was \$17,190. As we noted above, however, there were some “winners” in the policy changes. There were ranges of EFCs where the increase in Pell aid was more than the reduction in the OCOG. Among these individuals, the average family income was around \$46,004. Hence, there were two simultaneous effects going on. Aid awards were dropping for the poorest students (average income of \$17,190) and some redistribution was happening to actually increase the aid for families who earned roughly Ohio’s median household income.⁶

One can already see that the Ohio’s reduction in financial aid was dramatic, and Figure 13 confirms this. Figure 13 comes from the annual NASSGAP survey used in the prior section. Ohio’s spending on financial aid fell off a cliff in 2010. Ohio’s spending on need-based financial aid fell by 66 percent. Given our data, we project that the increase in Pell expenditure to students in Ohio public higher education under the stimulus was about \$68 million in 2010 relative to prior years. This is a conservative estimate in that we are only considering students who first entered college in 2005. In Figure 14 we replicate Figure 13 while including the extra Pell that we estimate came to Ohio as a result of the historic increase in the Pell grant funding. Even with this extra funding, Ohio’s overall spending on student need-based aid dropped dramatically.

In sum, Ohio’s change in financial aid policy completely dwarfed the historic changes in the Pell grant. Families at the bottom of the income distribution were disproportionately affected by the policy. The drop in their OCOG awards was far greater than the increase in their Pell

⁶ From 2006 to 2010, the Census measures Ohio’s median family income as \$47,358 U.S. Census Bureau (2006-2010). American Community Survey.

awards. By contrast, individuals who attended university main campuses and students from more affluent families experienced increases in their overall awards. The Pell grant and often the OCOG award increased for these families.

Of course, there are some caveats in our analysis. As we mentioned above, the underlying distribution of students has changed in the sample. Incomes in Ohio declined; the relative prices of two-year and four-year colleges changed (i.e. students attend four-year colleges could potentially receive more aid than students at two-year colleges); and some students may have entered (or not entered) college as a result of economic difficulty. We cannot present definitive evidence of the impact of any of these; however, in most cases, these circumstances, coupled with the policy change, would not have made a large difference in the analysis. For example, income declined which should have made families' EFCs decline. On average, recorded EFCs for Ohio public college students declined by \$250 between 2009 and 2010. Among students who filed FAFSAs in both 2009 and 2010, the median change was zero while the mean change was about-\$698. The reduction of about \$700 in EFC would have been offset by an increase of Pell of \$700. The key question is how the reduction in EFC would have affected students OCOG. In this group, the mean OCOG award declined by \$800 and the median award by nearly \$500. Again, the Pell might have offset some of the increased need, but the OCOG reductions still made potential awards lower in the aftermath of the policy changes in Ohio.

As we discuss in the next section, a key limitation is the identification of the counterfactual. Would Ohio have imposed such Draconian measures in the absence of the Pell reform? In the absence of the form, would the cuts have been more modest? Is this a case of

fiscal federalism, where Ohio reacted to the federal policy? Or is this a case where Ohio was going to face dramatic cuts and the federal government attempted to mitigate the fall?

In trying to understand if scaled back program was related to the change in the Pell, we interviewed a senior state administrator X who explained (off the record), “You’re absolutely right about the Pell increases. Here in Ohio, we call that budgeting. ... As Pell goes up, state aid goes down.” The administrator cited Minnesota and Oregon as having similar procedures.

This tradeoff between federal and state is built into OCOG policy. Ohio’s defined cost of attendance includes only tuition and fees, and Pell funding and EFC are subtracted from this cost before the state is charged. Thus students with the lowest EFCs who attend the cheapest institutions may have unmet need by the federal definition, but under Ohio’s revised policy, they receive no aid from Ohio as long as the tuition and fees are covered by combination of the Pell and the family contribution, and they are treated identically to some students with lower unmet federal need.

A series of guidance memos from the Ohio Board of Regents explains the changes for the 2009-2010 school year. "The flattened OCOG scale is a direct result of the Pell/EFC first concept. In essence, the OCOG formula takes a fixed number (tuition/general fees), subtracts a fixed number (Pell/EFC combo of \$5,350) and results in a fixed number (OCOG eligibility capped at the appropriate maximum award) " (Foust 2009). The reason community colleges and several other campuses have OCOG schedules of 0 in 2010 is because tuition and general fees are below the Pell/EFC combination of \$5,350 (Foust 2009). For comparison, community and technical colleges averaged \$4,734 for tuition, fees, and books in the 2009-2010 school year (authors’ calculations based on IPEDS data). While the Pell grant takes into account students’ living expenses, Ohio’s fixed number starting point only accounts for tuition and general fees.

Since Pell grants represent the “first dollar” in Ohio’s formula, Pell, while allowable for living expenses, is used for tuition and fees, and the OCOG, which does not have a living allowance, is left to pay whatever portion of tuition and fees Pell and EFC do not cover.

Regardless of intent or cause, the cuts in Ohio completely overshadowed any increase in the Pell, and the majority (75%) of families on financial aid were worse off. These families were also the poorest of the need-based eligible families.

Is Ohio’s experience representative of other states? This is an open question. As we mentioned, 45 percent of states reduced need-based grant aid expenditure in the aggregate between 2009 and 2010. Ohio was an extreme case, and only one state cut in aggregate spending by a larger percent. However, throughout the US there was a surge of students who were eligible for financial aid awards, and so even among the states that increased their aggregate expenditure, increasing numbers of recipients lower the average spending on any individual student in almost a third of these states.

V. Conclusion

We have tried to explore how states adjusted their need-based aid programs in response to the Great Recession and the corresponding federal policy. Our findings are mixed. Many states attempted to maintain the generosity of their programs, but about half of states reduced their per-student spending. Given the budgetary pressures facing states, this is not surprising.

Additionally, we have tried to demonstrate that since at least 2000, many states have altered their financial aid programs. Prior to 2000, their financial aid programs generally had a positive relationship with the generosity of the Pell. After 2000, state programs have increasingly had a negative correlation with the Pell grant. There appear to be two driving forces for this shift. First, the federal government is increasing the real value of the Pell in a countercyclical

rather than procyclical way. States tend to respond procyclically. Second, many states have aggressively pursued “shared models” of student funding. Under the shared model, states consider a set of costs including tuition, fees, and in some cases, living expenses. In this model, state aid pays for the remainder of students’ expenses (up to a limit) after EFC and Pell are incorporated into students’ aid packages. Holding costs constant, a one dollar increase in the Pell results in a one dollar reduction in students’ state need-based grants. The only time that Pell and state aid would increase is if an increase in Pell aid is less than the increase in college tuition. For a fixed EFC, both Pell and state grant aid would increase with tuition. However, if the growth in the Pell grant was large, such as we saw with the historic increases in the Pell program during the Great Recession, the growth in the Pell might exceed the growth rate of tuition and fees. In this case, the “surplus” would automatically reduce the size of state need-based aid programs. As such the state program would show a negative correlation with the Pell.

What is almost impossible for us to disentangle is whether the historic increases in the Pell led to more stringent state need-based aid policies than would have been attempted in the absence of the historic increase. We cannot establish any causal relationship. However, in the one in-depth case study we present, the timing of the announcement of the revised program was such that lawmakers and policymakers already knew the size of the Pell grants and could have incorporated it in their decision-making. Through the minutes of meetings and an interview with a state leader, we have at least suggestive evidence that Ohio took advantage of the generosity in the Pell and further scaled back the overall Pell. However, in the process of scaling back their program, Ohio’s policy change had redistributive consequences. The poorest families saw their college awards decline for a given EFC while families near the median income experienced increases in their overall aid packages.

The evolution of state and federal need-based grant programs has some interesting relationships with the academic literature in public finance. Developing a negative relationship between state and federal need-based aid might create more stability in students' overall need-based aid. State policy becomes a hedge against federal policy while federal policy might provide a stimulus in recessionary times when state's budgets are strained. Additionally, as states incorporate information on federal policymaking in their decision-making, they can exercise fiscal federalism in making it to where state officials have the last say in the size of need-based aid programs. The "shared" model of need-based aid makes it to where states are the final decision-maker in the overall public subsidy to needy students.

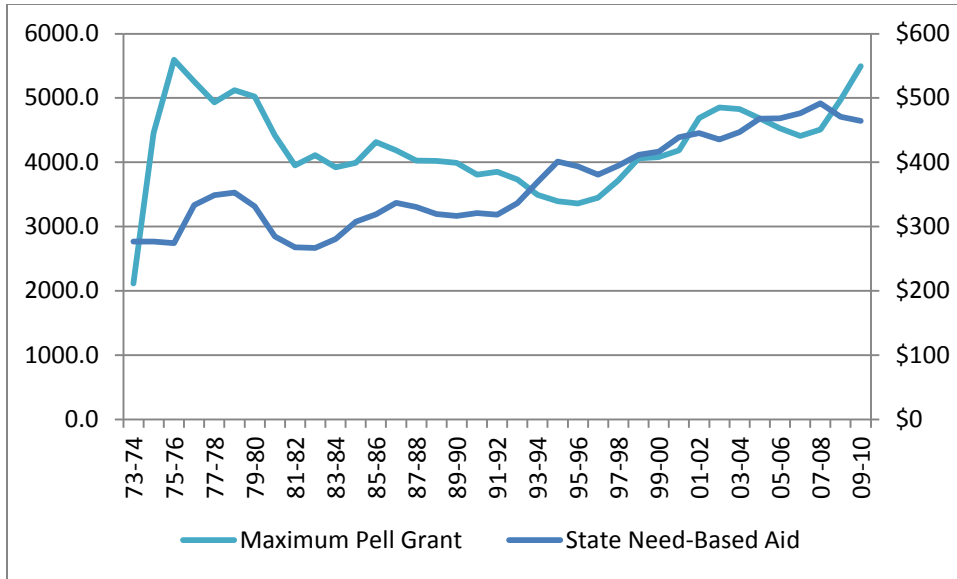
A key implication of this shift in policymaking is that the political rhetoric around Pell grant increases may be largely hollow. If states hedge against increases by altering their generosity, then students are likely not to see the promised increases in aid generosity. States may capture this.

An important observation is that the trends we see during the Great Recession were already appearing as early as 2000. While more states have altered their programs, the federal government and a large percentage of states were already adjusting their student finance models to this new modality during the 2001 recession. Their reaction during the Great Recession has thus been consistent with this "new" model of student-financing.

Finally, while we have focused on need-based aid, our study is limited. States support students in many other ways, most notably state appropriations for public institutions. We have not examined how these have changed over the Great Recession. We have avoided this purposefully in that we are focused on the visible programs which actively redistribute to low-income families. Similarly, we cannot observe institutional aid or the role that institutions might

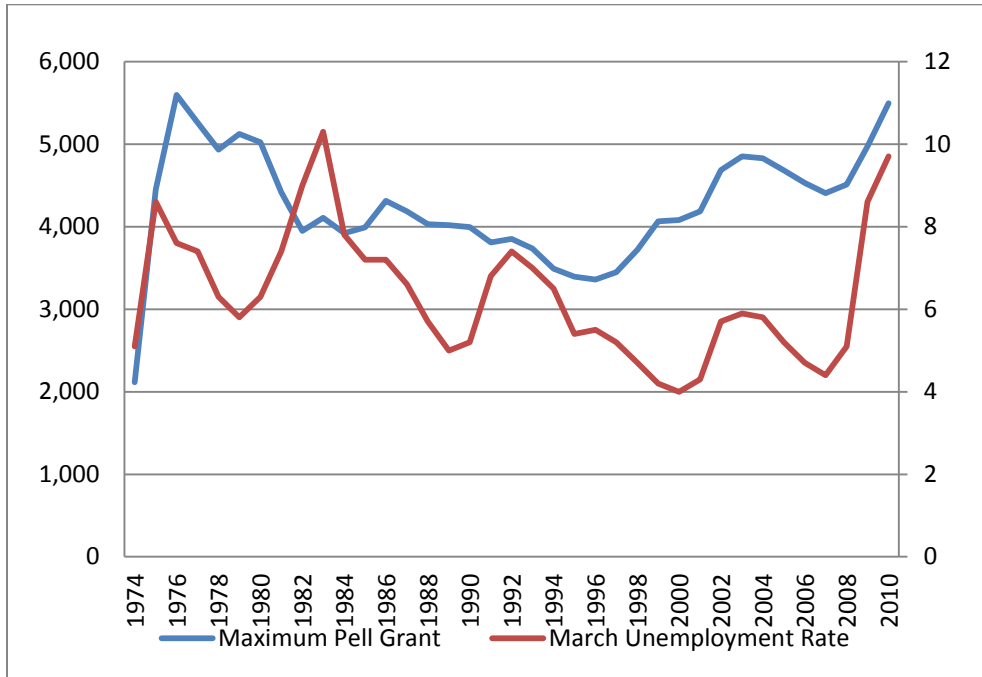
play in strategically altering prices. These institutional policies can alter the affordability options and may be an additional hedge against changes in federal or state policy changes. We have little information about how these aid policies changed during the Great Recession.

Figure 1. Real Maximum Value of the Pell and State Need-Based Aid over Time



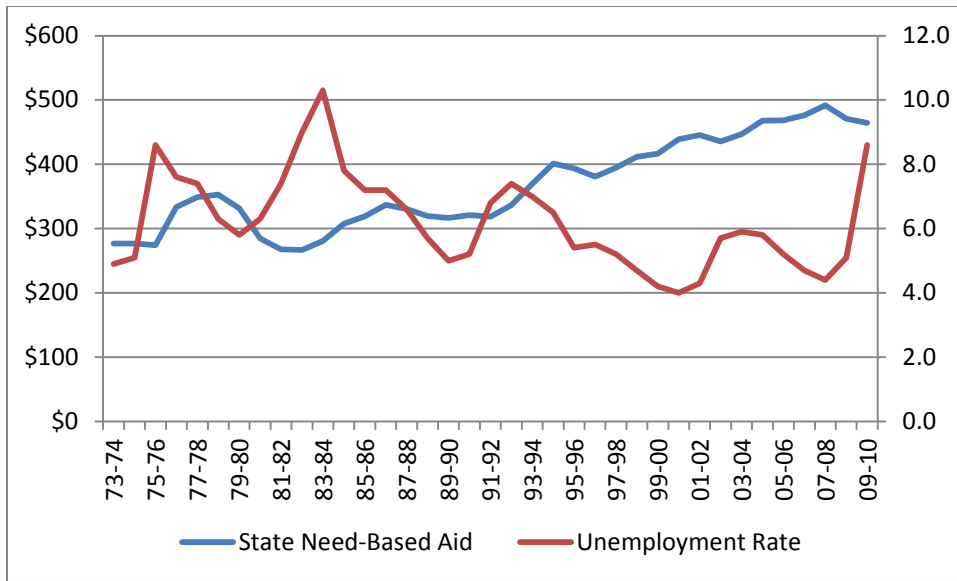
Source: College Board (2011)

Figure 2. Real Maximum Value of Pell Grants and the March Unemployment Rate, 1974-2010



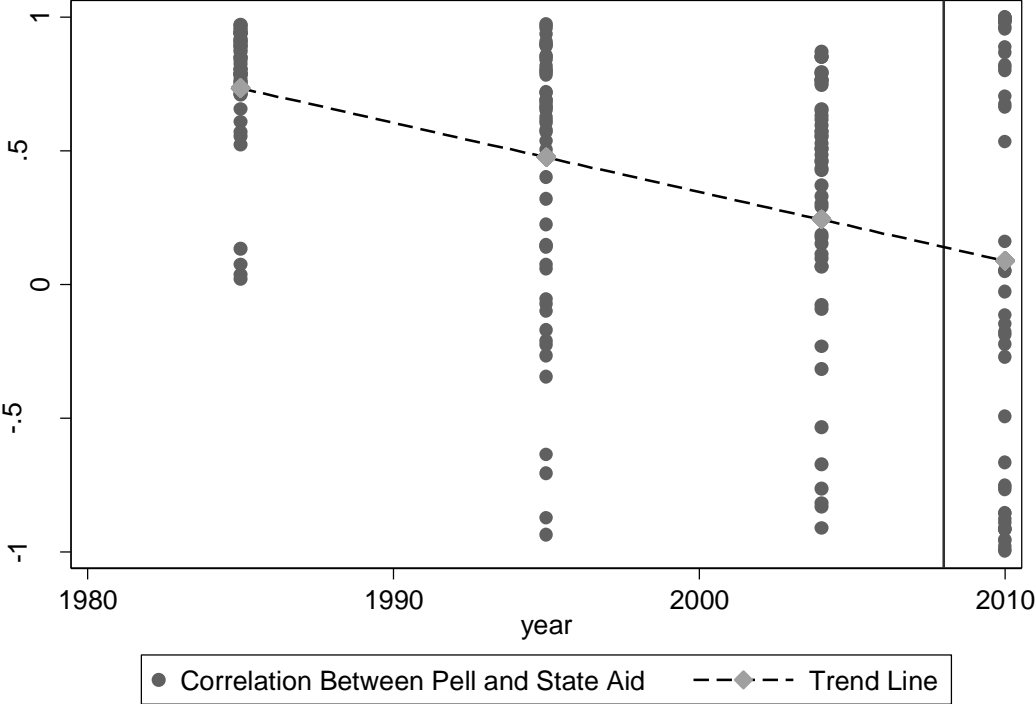
Note: Number of Pell Recipients is measured for the school year ending in the stated year; e.g. the figure for 1974 is for the school year 1973–1974. Number of Pell Recipients from DoE "2009-2010 Federal Pell Grant End-of-Year Report." March Unemployment Rate from CPS. Real Dollars inflated to March 2011 dollars using March CPI figures from BLS.

Figure 3. Real Average State Aid and the March Unemployment Rates Over Time



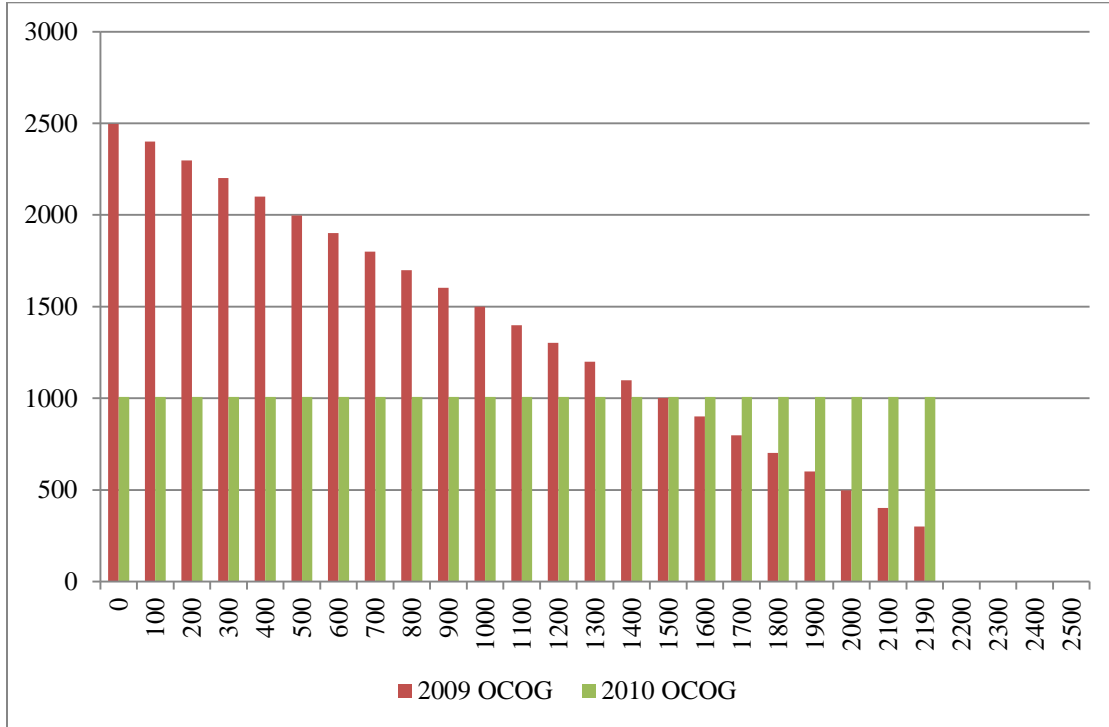
Source: College Board (2011)

Figure 4. State Correlations between Average State Need-Based Grant and the Pell Grant



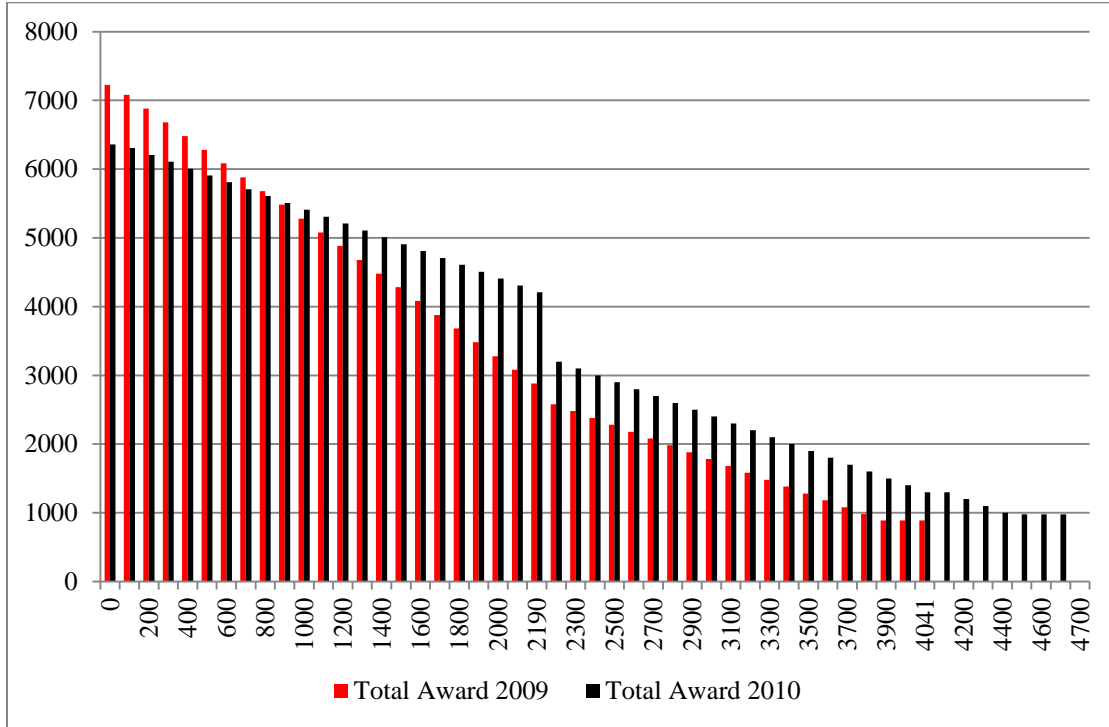
Source: Authors' Computations Using NASSGAP Data

Figure 5. OCOG Amounts in 2009 and 2010 by Family EFC for Attendees at 4-year Main Campuses



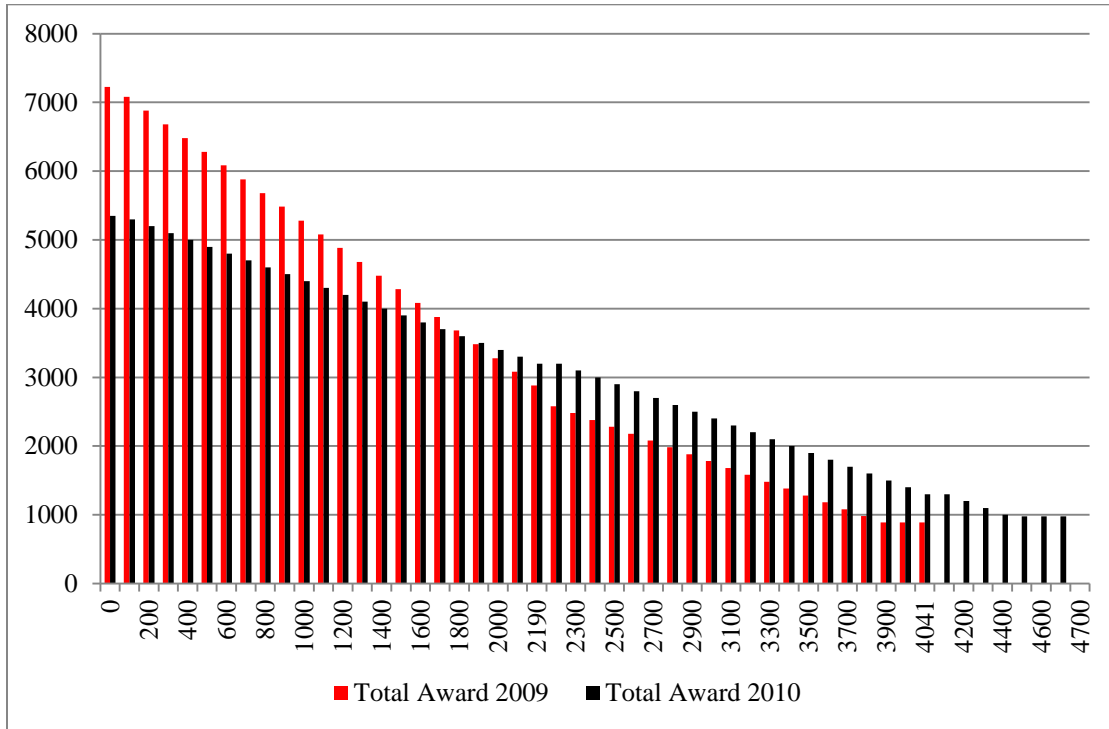
Source: Authors' Calculations Based on Schedules Published by the Ohio Board of Regents

Figure 6. Total Pell and OCOG Awards by Family EFC for Attendees at 4-year Main Campuses



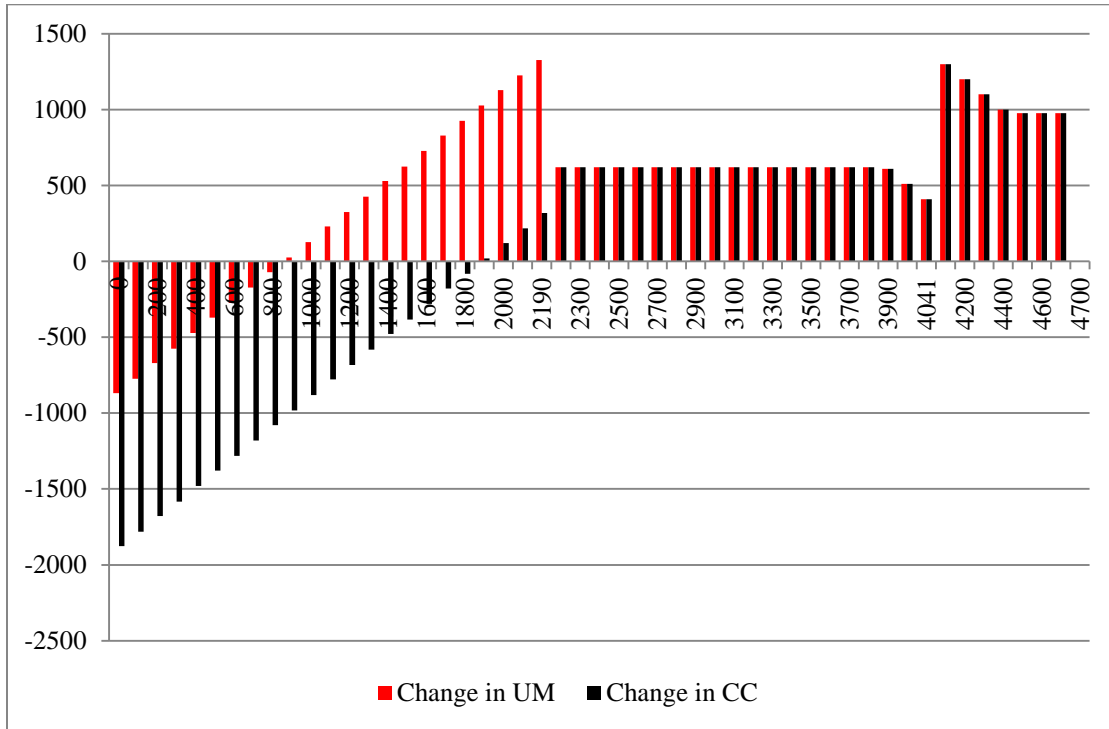
Source: Authors' Calculations Based on Schedules Published by the Ohio Board of Regents

Figure 7. Total Pell and OCOG Awards by Family EFC for Attendees At Community Colleges (and Central State and Regional Campuses)



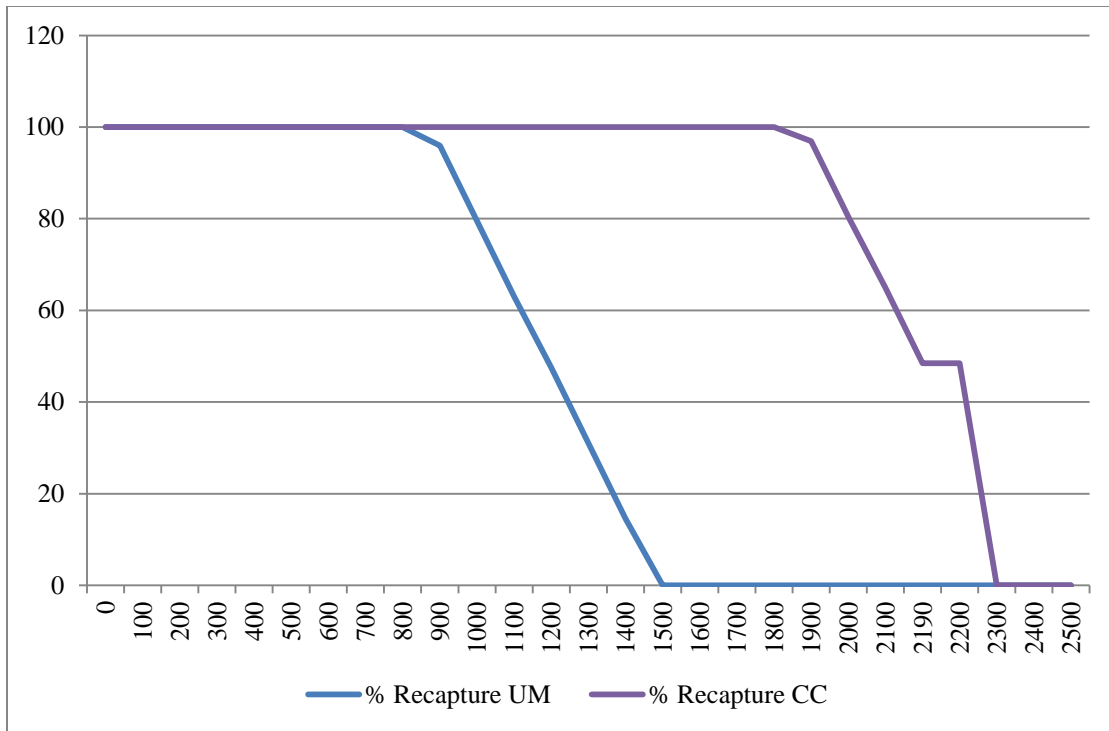
Source: Authors' Calculations Based on Schedules Published by the Ohio Board of Regents

Figure 8. Change in Total Award for Community College and University Main Students by Family EFC



Source: Authors' computations based on schedules published by the Ohio Board of Regents

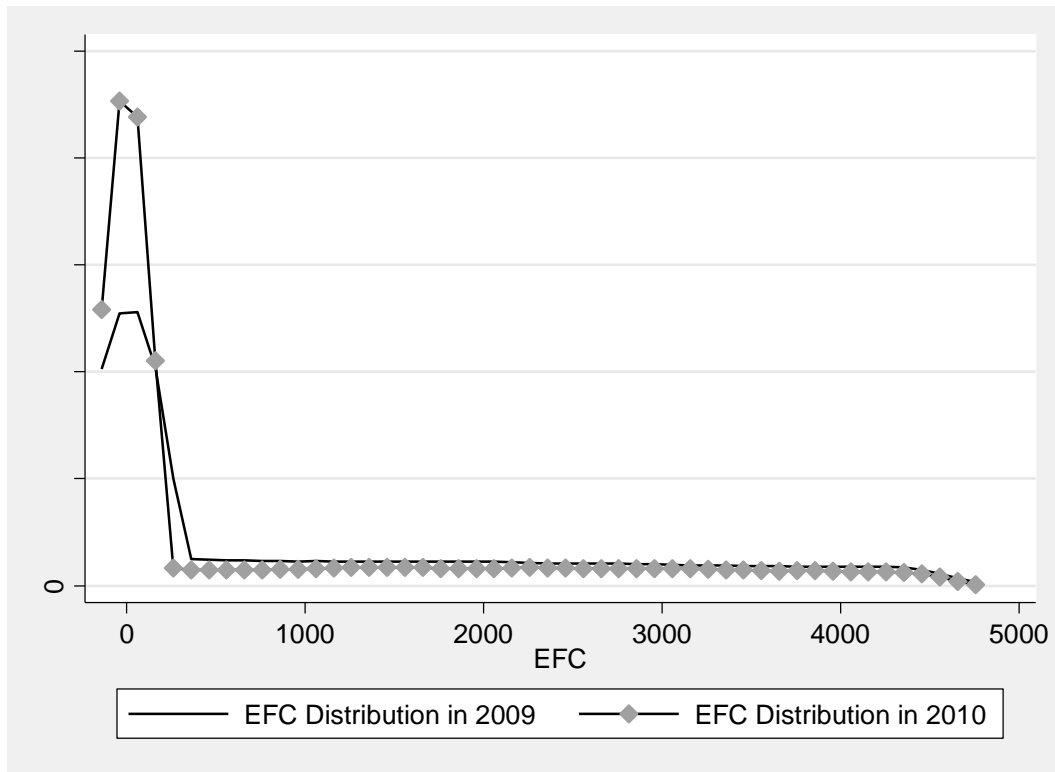
Figure 9. Percent of Pell Increase Recaptured by Decrease in State Aid by EFC and Sector



Notes: Recapture represents the amount of the increase in the Pell which was offset by state reductions. Recapture rate is constrained to be between 100% and 0%.

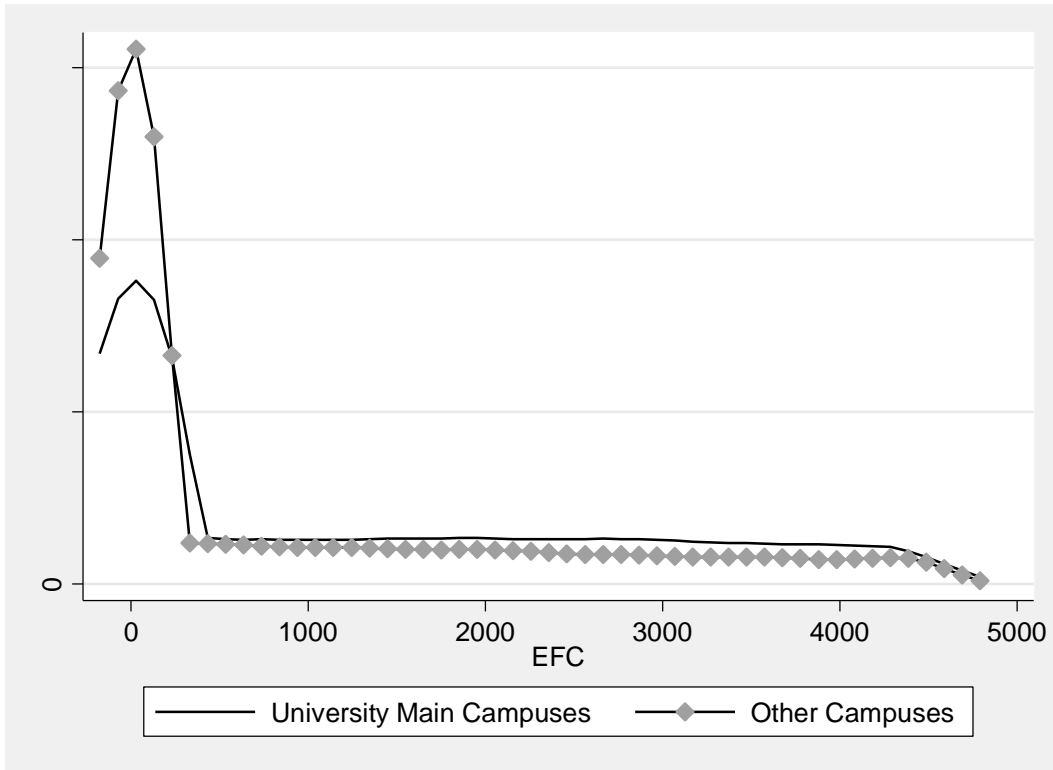
Source: Authors' computations based on schedules published by the Ohio Board of Regents

Figure 10. Distribution of EFCs Among Ohio Students in 2009 and 2010



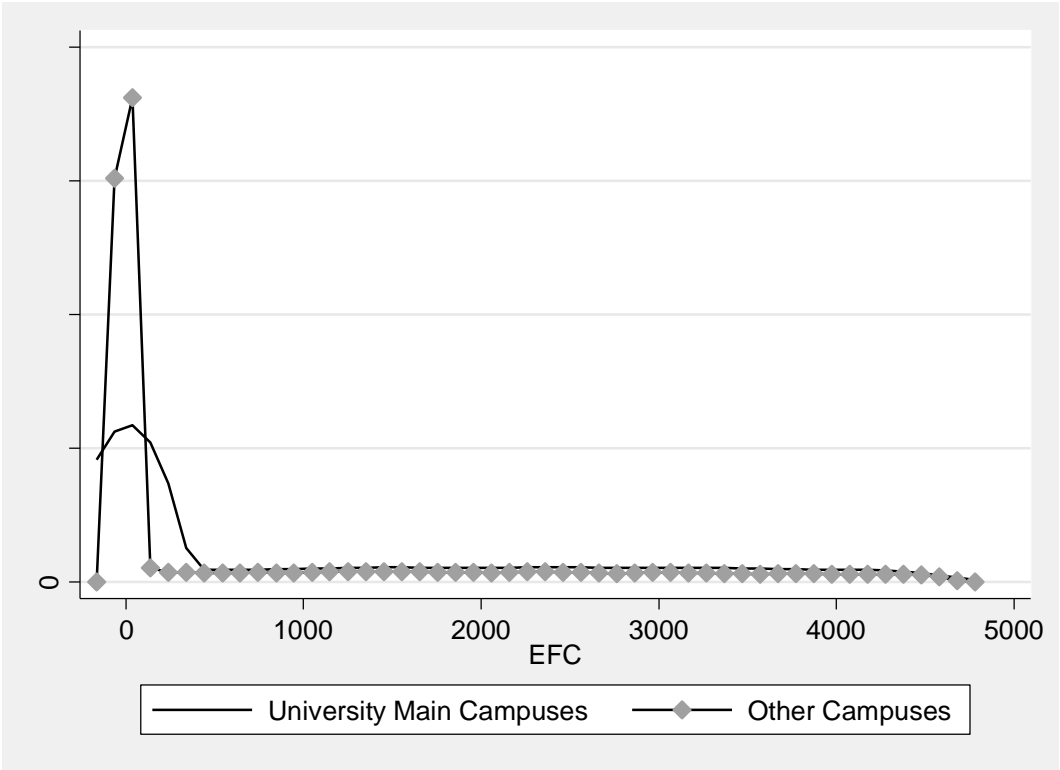
Source: Authors' calculations based on data from the Ohio Board of Regents

Figure 11. Distribution of EFCs in 2009 by Campus



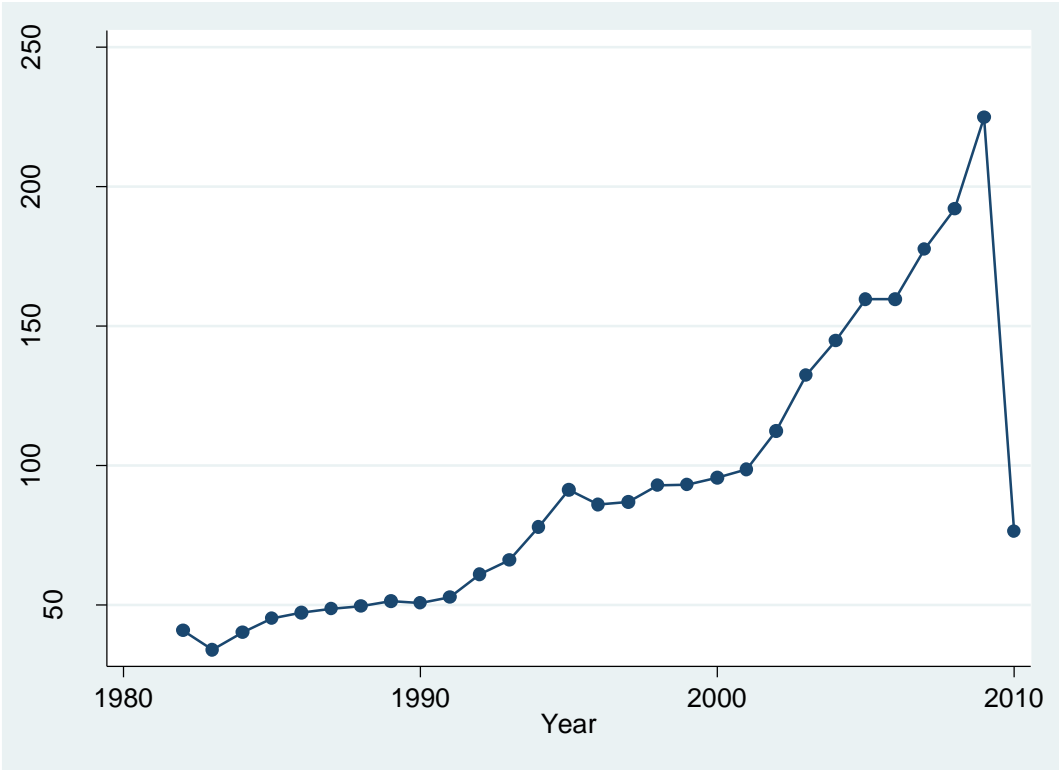
Source: Authors' calculations based on data from the Ohio Board of Regents

Figure 12. Distribution of EFCs in 2009 by Campus



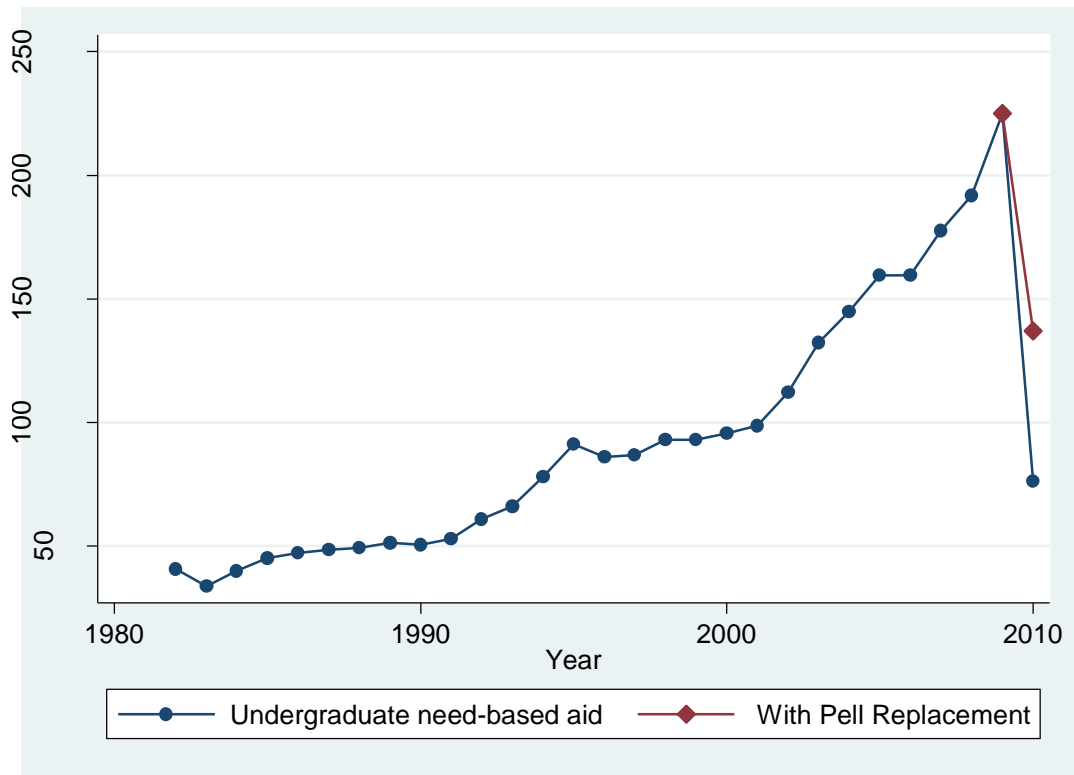
Source: Authors' calculations based on data from the Ohio Board of Regents

Figure 13. Aggregate State Need-Based Spending in Ohio, 1982 to 2010



Source: NASSGAP surveys.

Figure 14. Aggregate State Need-Based Spending in Ohio with Estimated Capture From Pell



Source: NASSGAP surveys and authors' calculations based on data from the Ohio Board of Regents.

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