



The Anatomy of College Tuition

by Robert B. Archibald and David H. Feldman

The increasing cost of attending a college or university is a concern that resonates with families at all income levels and with people whose views span the political spectrum. President Obama recently gathered a group of college presidents and leaders in higher education to discuss the problem and possible solutions. Congressional hearings focused on college tuition are a regular feature of the political landscape. Op-ed writers have taken on high tuition and fees with increasing frequency and considerable ferocity. And the Occupy movement lists high levels of student debt—a corollary of high price—as one of the myriad ills it opposes. If there is anything approaching a consensus opinion in American life today, it is the need to do something about the high price of college.

Why *does* college cost so much? Our objective in this short essay, based on our book, *Why Does College Cost So Much?*, is to give a summary of the evidence so readers will understand the forces driving tuition. This information is a crucial component of any policy discussion on the cost of higher education.

The conversation about the rising cost of a college education often begins from the premise that institutions as well as systems of higher education are dysfunctional. Holding up a magnifying glass to the industry might uncover many imperfections. But without proper context that information can be quite misleading.

There is value in placing higher education firmly within the industrial structure of the American economy and the economic history of the past century, context that is often missing from contemporary discussions about higher education. Once

you embed higher education within the broader economy, you begin to see how the forces of technological change that have reshaped the global economy have had a profound impact on the cost structure of colleges and universities as well as on how they set tuition.

This difference in approach is not an academic exercise—too much is at stake. Higher education is an engine of innovation, economic growth, and social progress. For most students with the background to succeed in college, access to high-quality postsecondary education remains the single most important investment they can make.

Crafting a constructive public policy toward a complex sector like higher education requires a clear understanding of the basic forces tugging on the industry. Our framework provides a good basis for understanding how those forces have created the system as it exists, and how we might restructure incentives to make it work better. Overheated rhetoric about the supposed ills and inefficiency of higher education often leads to counterproductive policy ideas that confuse symptoms with causes and that overestimate what government can do.

Is Higher Education Unusual?

College tuition tends to rise faster than the inflation rate. Some take this fact as prima facie evidence that something is deeply wrong with the behavior of colleges and universities. By contrast, our first reaction to this phenomenon is to ask, is it unusual?

The inflation rate is a weighted average of the price changes of products that make up the price index. In any given year many items will go up in price more rapidly than

the average while others will experience slower price growth. Some goods may even decline in price. But the data show that the price of higher education *consistently* rises more rapidly than inflation. Is this unusual? Are there other industries with similar price behavior?

Suppose we live in a world in which there is a 50/50 chance in any given year that the price of a particular good or service will go up faster than the overall inflation rate. In this world, as the years go by most items would increase in price faster than average roughly half of the time. Alternatively, we might live in a world in which the prices of some items usually increase more than average, and to balance things out some others usually increase less rapidly than average. If we live in the first world, the price behavior of college tuition would appear very odd. If we live in the

second world, higher education would not be so unusual.

Figure A details price changes over the period 1947–2010 for 69 products that are part of the price index for personal consumption expenditure.¹ These goods and services include categories like new cars, jewelry and watches, electricity, life insurance, and higher education. We can use the 64 annual price changes from 1947 to 2010 to count the number of times the price of a particular product rose more rapidly than the overall index. The chart orders the 69 industries from left to right by how many times its price increased faster than the overall inflation rate.

On the left of the diagram, we have two industries (1 and 2) whose price increase only exceeded the overall inflation rate in four of the 64 years. At the other extreme, we have one product whose annual price

Figure A. Number of Years with a Percentage Price Increase Exceeding the Inflation Rate, 1947–2010

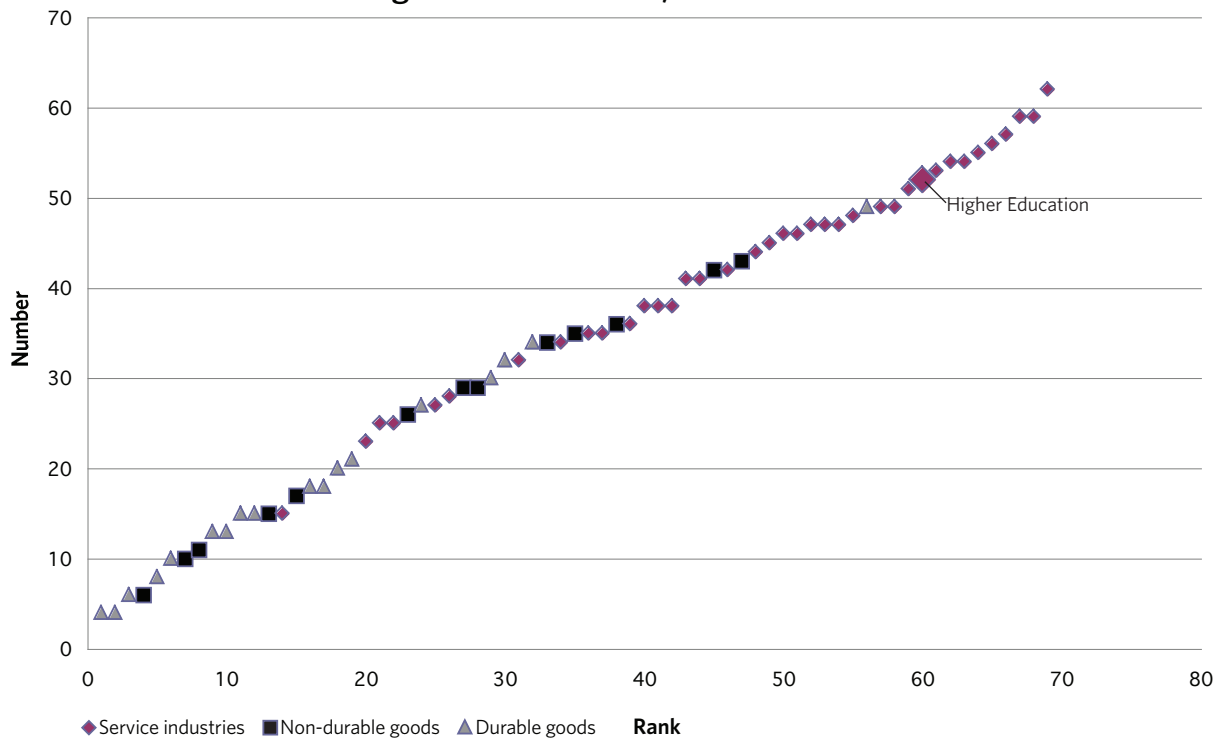
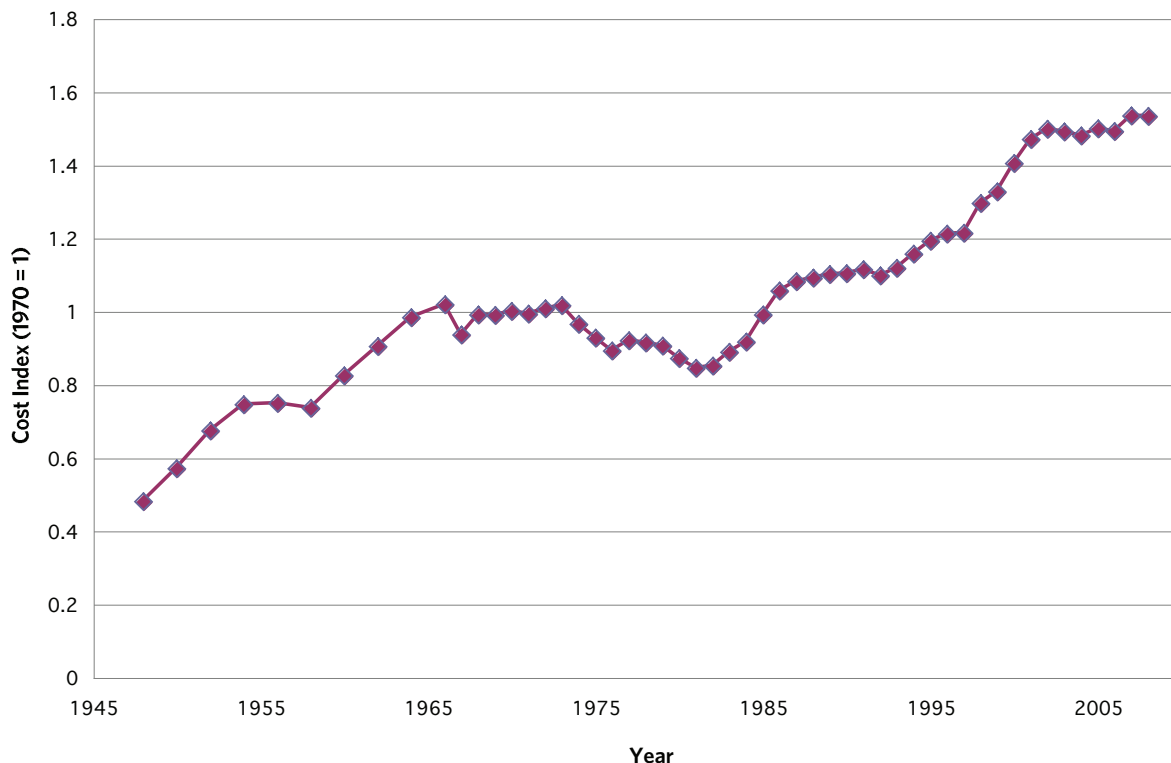


Figure B. Index of Real Higher Education Costs (1970=1), 1948–2008



increase exceeded the overall inflation rate in 62 of the 64 years.

This evidence contains two big messages. First, there are a lot of industries whose price increases have consistently exceeded the overall inflation rate. Higher education, whose price index increased more rapidly than the overall price index in 52 of the 64 years, is not unique. It's not even particularly unusual. Second, the group of industries whose prices consistently rise more rapidly than overall inflation is not a random selection from the 69. To see this, we have colored the service industries, such as dental services, with a red diamond, non-durable goods, such as food, with a black square, and durable goods, such as new automobiles, with a pink triangle. Services are much more likely than goods to have price increases that exceed the average price increase. Non-durable goods are less likely to see price increases consistently higher

than the inflation rate. And durable goods tend to experience price increases that consistently fall below the inflation rate.

This evidence seems quite clear. We cannot explain the anatomy of college tuition just by dissecting the budgets of American colleges and universities. We must look beyond higher education to evaluate changes in the economy that affect both higher education and other services.

What Does It Cost to Provide Higher Education?

Colleges and universities spend a certain amount per student to provide educational services. Changes in this cost are the most important driver of tuition—or college *price*—over long periods of time. However, there are other forces that affect tuition independent of changes in the costs schools incur. Higher education is a heavily subsidized activity. States support their public institutions

with direct appropriations that allow schools to charge a price that is less than cost. For private universities, and for some public institutions as well, endowment income and private giving serve the same function. In addition, institutions discount tuition for some students, and this puts upward pressure on published tuition prices. We will address the effects of changes in subsidies and discounts on tuition later on in our argument. First we need to understand the long-term evolution of cost in this industry.

Figure B shows the evolution of the real cost of providing a higher education from 1948–2008.² The term “real” means cost numbers are adjusted for overall inflation. If the real cost of a year in college is rising over a period of time that means educational costs are growing more rapidly than the inflation rate. If real costs are falling, then higher education costs are growing less rapidly than inflation. We should also note “educational costs” do not include auxiliary services like room and board.

Taking a broad look at the data, we can see three separate time periods: (1) From the start of the data to the mid 1960s real higher education costs rose quite rapidly; (2) From the late 1960s until 1980 real higher education costs were flat and then declined slightly; and (3) From 1980 to the present, real higher education costs again began to rise more rapidly than overall inflation.

Any serious explanation of rising higher education costs should encompass

these three distinct episodes. A complete story must also contend with the fact that the generally upward trend of real higher education costs is very similar to the evolution of real prices for other services. The story of rising college cost is part of the larger story of technological change

that has reshaped the American economy over the last century. Our technology story is a tripod with three strong legs.

Cost Disease:

The first leg of the tripod is what economists call “cost disease.” Technological progress tends to reduce the amount of labor and other inputs

required to produce a ton of steel or bushel of wheat. This growth in labor productivity is the reason we are better off than our grandparents. Manufacturing and agriculture have been the greatest beneficiaries of this kind of technological blessing. Any product or commodity that is fairly homogeneous or is made in an industrial setting is quite susceptible to this kind of cost-reducing productivity growth.

On the other hand, for many service industries productivity growth is much harder to achieve. To produce a haircut or a restaurant meal takes roughly the same amount of labor today that it did a half century ago. This is the “disease.” Cost-reducing technological change does not benefit all industries equally. And personal services, such as haircuts and college classes, are the least blessed by labor-saving productivity growth. In these labor-intensive

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industries the time of the service provider is the service, and economizing on that time reduces the quality of the service. Yet these service industries hire from the same labor market and buy electricity from the same utilities as other industries. Any industry that experiences lower productivity growth than the national average will see its costs go up more rapidly than the overall inflation rate, and this has been the fate of most services over the past century.

This fact does not mean services have become less affordable. To the extent productivity growth in other sectors is raising per capita national income, this growth supports rising spending on all goods and services. Cost disease is not the cause of affordability problems in higher education. As we will show later, affordability problems are driven more by changes in state subsidies and in the American distribution of income than by rising cost.

Our standard measures of productivity are often misleading in most personal services. If you measure labor productivity by counting students taught per professor-hour, we could easily raise labor productivity by doubling class size. But a discussion-based freshman seminar with 15 students is not made better by adding 15 more students, though it may be less costly. Meaningful productivity growth must at least preserve quality, which is why productivity measurement is so difficult in personal services.

At present, students interacting directly with professors and other students in small

groups remain a benchmark of quality in education. Ask any family if they want their son or daughter to learn in small group seminars taught by tenured professors, or if they prefer giant impersonal lectures or online chat rooms monitored by adjuncts who answer lots of email questions.

We think most contemporary critics of higher education fail to credit the power of the cost disease argument in explaining the long evolution of higher education costs. The artisan nature of higher education explains much of this past experience. Distance education is the current hope for breaking the grip of cost disease and generating meaningful productivity growth in higher education. But as long as most people are convinced that quality programs rely on providing strong personal interaction between professors and students, college costs will tend to rise faster than the overall inflation rate.

The Cost of Employing Highly Educated Service Providers:

The second leg of our tripod is how technological forces have reshaped the U.S. labor market. Higher education, like many other personal services, relies on a highly educated work force. Roughly 70 percent of the employees at a university hold at least a college degree. The figure for most manufacturing industries is much lower. If the gap in earnings widens between those who have a college degree and those who do not, that is another force acting to push up cost in

Cost disease is not the cause of affordability problems in higher education.

those personal services compared to other industries with less educated work forces.

Claudia Goldin and Lawrence Katz of Harvard make a convincing case that the kind of technological innovations that have revolutionized the economy over the last century have raised the demand for people with ever more years of formal schooling. At the same time, the growth in the supply of that kind

of labor began to slow in the late 1970s. In the race between the demand for educated labor and the supply, demand has won the latest round. The result is a rising earnings gap in favor of the college educated.

Industries that rely on highly educated service providers have all faced comparatively higher labor costs starting in the 1980s. The cost pressure on higher education (and on other education-intensive services) is comparative. If the gap in total compensation (salaries and benefits) between the highly educated and the less well-educated grows, then the cost of producing a service that uses highly educated labor must also grow. Colleges and universities also employ a lot of highly educated people outside of the classroom, and these people have many alternatives in the private sector.

The Standard of Care: Technological change does affect higher education directly, but the effect of innovation in many service industries tends not to be primarily of the labor saving and cost reducing kind that we have seen in manufacturing and agriculture. Instead of reducing the number of labor

hours it takes to produce a class, new technologies alter what we teach and how we teach it. For example, students in science and technology fields must be familiar with

current tools that define modern laboratories. These tools are much more expensive than the chalk and blackboard world of the past. Universities do not really have the option to use older but cheaper educational methods.

Just like modern medicine, colleges and universities must meet a standard of care. For higher education the standard of care is set by the labor market that will employ our graduates. As a consequence colleges and universities cannot choose to use technology the way other businesses do. Other industries only adopt new technology if it will improve the quality of the firm's product or reduce the costs of producing the product. Colleges and universities have to adopt new practices and new technology even if doing so results in higher costs.

These curricular reforms actually lower labor productivity measured as students taught per professor-year. This raises cost. But if innovations like these also raise quality by better preparing students for the kinds of cognitive tasks that will define the labor market of the next 30 years, then these reforms may pay a handsome dividend.

Summary: Our three-part explanation of the technological forces that have transformed the entire economic landscape helps illuminate the 65 year evolution of higher education costs. Our story explains the long upward trend in cost, and it can also explain

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the pause and slight reversal during the 1970s.

Technological progress is the driving engine behind cost disease. When it slows, cost disease loses steam. The period from 1973 to roughly 1981 is sometimes called “the great productivity slowdown,” and not coincidentally, that is the decade in which higher education costs stopped rising. Technological progress again accelerated starting in the early 1980s, so the engine of cost disease revved again. In addition, the returns to a college degree that drives the costs of employing highly educated workers declined in the 1970s, but accelerated starting in the 1980s. The combination of these factors brought the increase in the real costs of providing higher education to a halt in the 1970s while causing them to accelerate again starting in 1980.

Alternative Views:

The Dysfunction Narrative

In our story, the forces responsible for rising higher education costs are external and they are not specific to colleges and universities. There is an alternative view that paints a picture of a thoroughly dysfunctional higher education system.

The dysfunction narrative has many strands.

Prestige. Prestige games are about positions in a pecking order, and no matter how good a school may be, there are still only 10 slots in the top 10. Prestige games are a form of positional arms race, and like all arms races they are potentially expensive and difficult to terminate. Prestige games can take many

forms. Consider the competition for faculty stars. There are a limited number of faculty members who can really make a difference in a graduate program, and the competition for these stars could drive up their salaries. Equity considerations then cause schools to pass these higher salaries on to non-star faculty members as well, driving up costs.

Students. There is also a competition for talented students, which begins with recruiting as schools spend money on glossy brochures, a savvy web presence, and a staff whose job is to sift through thousands of applications. The competition continues with amenities designed to lure students to campus to enjoy country club facilities.

Faculty and Administration. Other accounts of dysfunctional colleges and universities focus on interest groups within the institution. The faculty and administration both take a beating in these accounts. High salaries for college presidents are sometimes noted. But

most often a lax workplace culture is blamed for rising cost, and the system of tenure is the heart of that problem.

As the story goes, faculty members armed with tenure redefine their role in the institution to encompass

more research and less teaching while transferring other student-centered duties to professional administrators. In turn, administrators make the case for all kinds of new or expanded activities at colleges and universities. These activities include academic advising and career services,

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which used to be faculty responsibilities, as well as expanded regulatory compliance, new auxiliary services, and ever expanding information technology services. In part, some of this expansion of administration is related to the increase in student amenities caused by the prestige game. It is easy to find accounts that pin rising college costs on “administrative bloat.”

The dysfunction stories have a superficial plausibility, but they do not do a good job of explaining the actual data.

First, for the dysfunction arguments to explain rising cost they have to do more than illustrate ways in which colleges and universities might be inefficient. Like most large organizations, it’s easy to finger certain practices or incentives as sub-optimal. It’s much harder to show why inefficiency is rising dramatically and in ways that match the evidence on cost. We do not think

universities are more inefficient than they were in the past. For example, the institution of tenure has been in decline for decades, especially at public institutions subject to bouts of budget cutting. Dysfunction stories also have a particular problem with the 1970s, when real higher education costs actually declined. Was there a burst of functionality in that decade?

Second, almost all examples of dysfunction rely on practices at four-year institutions. The pathologies of prestige games and of faculty interested in polishing their research at the expense of teaching might be significant drivers of cost per student at four-year institutions, but two-year community colleges would not seem to be affected by these same ills. They tend to be non-residential, open-enrollment institutions focused on teaching where faculty members do little research.

**Figure C. Indexes of Current Fund Expenditure
4-year and 2-year Institutions, 1971-2001**

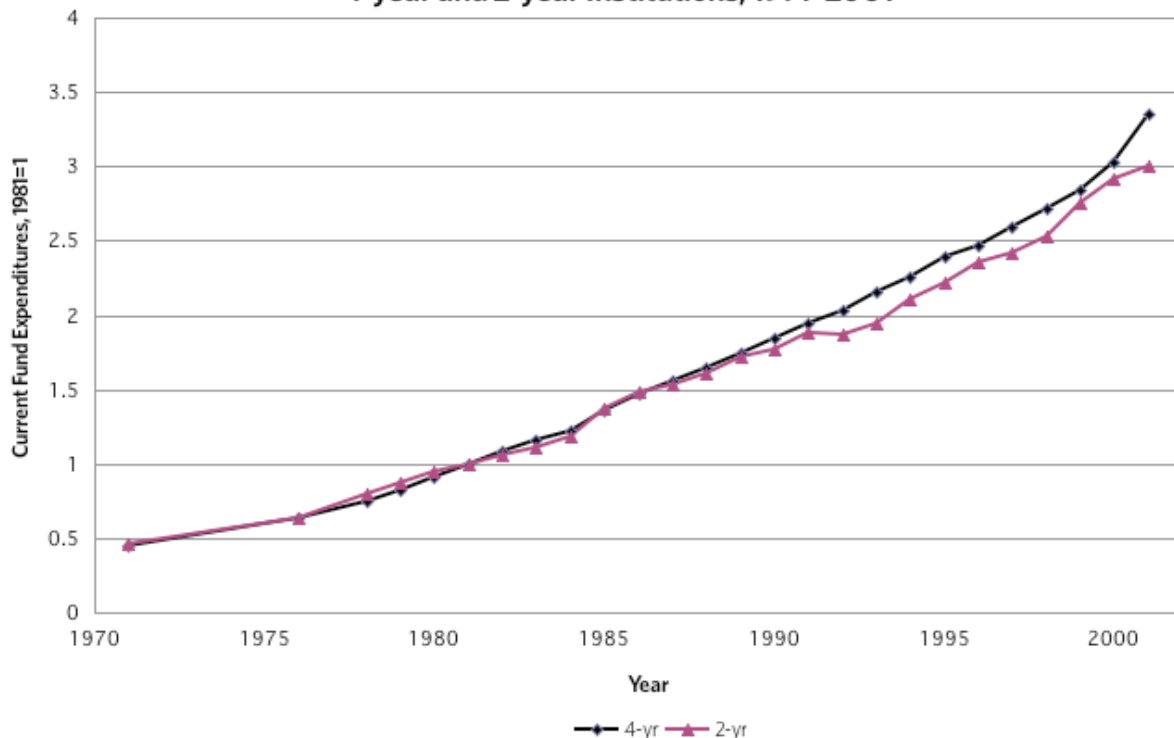


Figure C compares current fund expenditures at two- and four-year public institutions. The trajectory of cost is not identical in both, but they are very close.³

Whatever one believes about the social value of faculty research, or the gold-plating of the college experience, these factors don't explain the cost growth in two-year colleges. On the other hand, like their four-year brethren, two-year colleges have experienced very little productivity growth, they employ highly educated people, and they have had to rely more heavily on expensive technology to provide an up-to-date education.

Third, the idea that administrative bloat is a major cost driver warrants a close look and a bit of context. The percentage of the university work force classified as administrators and support staff, as opposed to clerical workers or instructional staff, has indeed grown. According to the Center for College Affordability and Productivity, the past 20 years have seen a doubling of support staff while student enrollment has grown by only 40 percent.⁴ If this shift in the proportions of the college work force did not provide value, or if it was unusual among other major industries, we might have cause to look for waste. But this shift away from production and clerical workers toward professional staff is a nationwide phenomenon. In part, it reflects a longstanding global trend toward more intensive use of educated professional and technical workers, who accounted for less

than 14 percent of the nation's total labor force in 1970, but almost 25 percent in 2008.⁵

Lastly, our story of rising college cost fits a series of related industries, all of which

have been buffeted by the same economic stresses. The dysfunction narrative focuses exclusively on what is going on inside the higher education system. If dysfunction in higher education is the primary driver of cost over long stretches of time, then the similarity between

the experience of higher education and other industries must be an interesting coincidence.

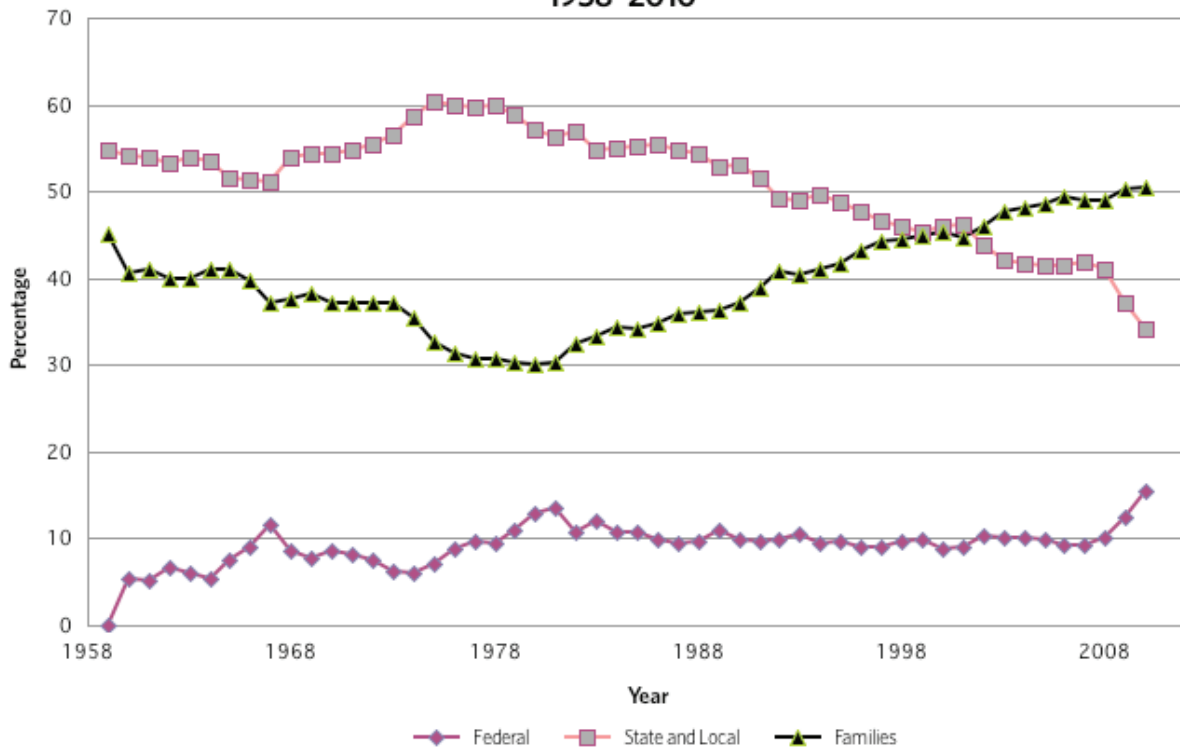
As a result almost all students pay much less than the full costs of their education—even those who may be paying full tuition.

The Role of Subsidies

Increasing costs are clearly a very important part of the explanation of rising tuition. To use an anatomy metaphor, cost forms the skeleton. In most industries, this skeleton is almost the whole story—price equals cost plus a profit margin. Over time, competition limits this profit margin so price usually tracks cost quite closely. Higher education, however, is different.

Since the founding of the first college, not-for-profit higher education has been a highly subsidized activity. The subsidies come from many sources: endowment earnings, gifts, private and government grants, and government appropriations. As a result almost all students pay much less than the full costs of their education—even those who may be paying full tuition. Many students receive scholarships and grants that reduce the price they have to pay.

Figure D. Percentage of Spending on Higher Education, 1958-2010



The amount of the subsidy and its sources are changing, and this has had a profound effect on what colleges charge. Figure D divides spending on higher education among the federal government, state and local governments, and families.⁶ Between the late 1950s and late 1970s, governments assumed a larger share of the financing burden. But since 1980, when the family share was 30 percent, the states have gradually ratcheted down their support of higher education. As a consequence, families have borne an increasing fraction of a rising tuition bill. This is a problem that has fallen largely on those who attend public colleges and universities.

Most of the subsidy received by public universities comes as a direct appropriation from the state. Schools have a target amount of spending needed to produce the quality of programming they intend to offer. In simple terms, a school then sets average tuition

by subtracting the per-student institutional subsidy from the planned level of per-student spending. If the state appropriation is cut, schools face a hard choice. They can raise tuition to preserve quality, trim spending despite the negative effects this may have on student learning as well as on retention and graduation rates, or limit admission slots. As a result, rising tuition may result from sustained cuts in subsidy, independent of any pressure from costs.

The decided downward slope of the line designating state and local government's share of spending on higher education is the result of state and local appropriations to colleges and universities not keeping up with inflation or with the growth in the number of students seeking postsecondary education. Real state and local appropriations per full-time equivalent student in the 2008-09 academic year were only 78.5 percent of what they had been in

the 1990–91 academic year.⁷ Although this reallocation of state spending away from higher education is a long-term trend, the data are punctuated by recessions in which state finances, which are subject to balanced budget constraints, undergo substantial retrenchment. Without federal help in the recent recession, the effect of state cuts for higher education would have been far worse.

This ratcheting down of state support for higher education has consequences. Although we are not fans of college rankings, a 25-year evolution within one ranking system shows the effects of starving public higher education. In the inaugural edition of the *US News & World Report* college rankings that came out in 1987, eight public universities were in the top 25 national universities. Two were in the top 10. In the most recent evaluation there are none in the top 20 and only two, at 21st and 25th, in the elite 25.

While some private universities receive state and local appropriations, endowment earnings and private gifts dominate institutional subsidies in the private sector. This too makes institutional subsidies susceptible to the whims of the national economy. When the economy and the stock market are booming, endowment earnings grow and donors become more generous, but when the economy and the stock market experience difficulties, private institutions will also suffer.

Lastly, institutional subsidies vary dramatically among institutions. There are some well-endowed private institutions

whose students' tuition covers only a small share of the costs of their education. There are also some private institutions that have to charge their students almost the entire cost. Similarly, there are some states that provide very generous appropriations to their institutions and others that provide very meager subsidies.

Tuition Discounting

The list price tuition published in the university catalogue does not tell you what the average student actually pays. This is because schools routinely discount the list price for many students. If a school offered no discounts, its list price tuition could be set lower. But if it offered no discounts, the characteristics of the student body would differ.

Tuition discounting is not new, but for a variety of reasons the size of the average discount has grown at both public and private universities over the past 25 years. This growing use of discounting is part

of the reason for rapidly rising list price tuition in recent years.

Tuition discounting serves several purposes. Some of the scholarships and grants are designed to overcome low ability to pay. Other scholarships and grants are designed

to attract students with particular attributes and talents. In both cases, discounting is a tool that helps schools craft the “right” freshman class while also generating the revenues needed to run the kind of program the school wishes to offer.

What explains the increasing use of tuition discounts? One argument is that

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rising discount rates reflect the prestige games infecting higher education. While we are skeptical that prestige games play a significant role in explaining increases in college costs, an arms race story about merit aid is more compelling. Clearly there are a large number of institutions that use tuition discounts to try to lure students with high SATs, or a good jump shot, or leadership potential, or some other desirable characteristic. Also, there are some institutions further down the pecking order that use tuition discounts in an attempt simply to “make their freshman class.”

These tuition discounts are based on student merit, broadly defined. Merit discounts are not free, and they may actually reduce access if they push up list price and discourage some students from considering college as an option. On the other hand, merit grants are also a tool to enrich a class in ways that benefit all students in the class.

However, a significant portion of tuition discounting is based on student need. In a 2006 report for the College Board, Sandy Baum and Lucie Lapovsky designated a tuition discount as need-based if it met traditionally defined need regardless of the motivation for the grant. Using this broad definition of need-based aid, they found that between 2000–01 and 2004–05 roughly 70 percent of tuition discounts at private four-year colleges and universities were need-based and slightly less than 50 percent of tuition discounts at public flagship institutions were need-based.

This aid does not necessarily have any direct effect on the tuition charged, but federal subsidies of this sort are quite controversial.

Increases in tuition discounts come either from the competition for students among schools heating up or from greater disparities between the ability of the families to pay and the tuition charged by institutions. Both of these factors are at work. Again the overall state of the economy is going to have a large effect. As family incomes have stagnated over the past decade, schools have had to increase tuition discounting to retain a socioeconomically diverse student body. The attempt to maintain economic diversity pushes up list price tuition, and this is not a bad thing.

Federal and State Aid

Some students receive direct subsidies from federal government grants, privately funded grants, state funded grants, or endowment-funded scholarships. Also, some tuition charges are tax deductible or can be used as credits against tax liability. A part of the tuition charged to these students will be paid from their grants or scholarships or by the federal government in reduced tax liability. This does not necessarily affect pricing. The institution does not care who pays the bill. These grants, scholarships, and tax advantages are very important to the students and families involved. In 2008–09 the total discount rate, including scholarships and grants from all sources, was 40.8 percent at private four-year schools and 43.8 percent at public four-year schools.⁸

The federal government’s Pell Grant Program is a major source of outside financial aid. As we said, this aid does not necessarily

have any direct effect on the tuition charged, but federal subsidies of this sort are quite controversial. To some detractors, federal student aid drives demand and pushes up tuition prices. They argue that expanded availability of federal financial aid gave colleges room to raise prices.

This argument suffers from two flaws. First, the notion that increased demand raises price is based on a simple supply and demand framework in which rising demand moves along an upward sloping supply curve, yielding a higher price. Most of the empirical work on the market supply response to changing demand suggests that the national supply of seats in college is very flexible over time. Rising demand translates into more seats made available, not more tuition. Colleges and universities can add students without increasing average costs.

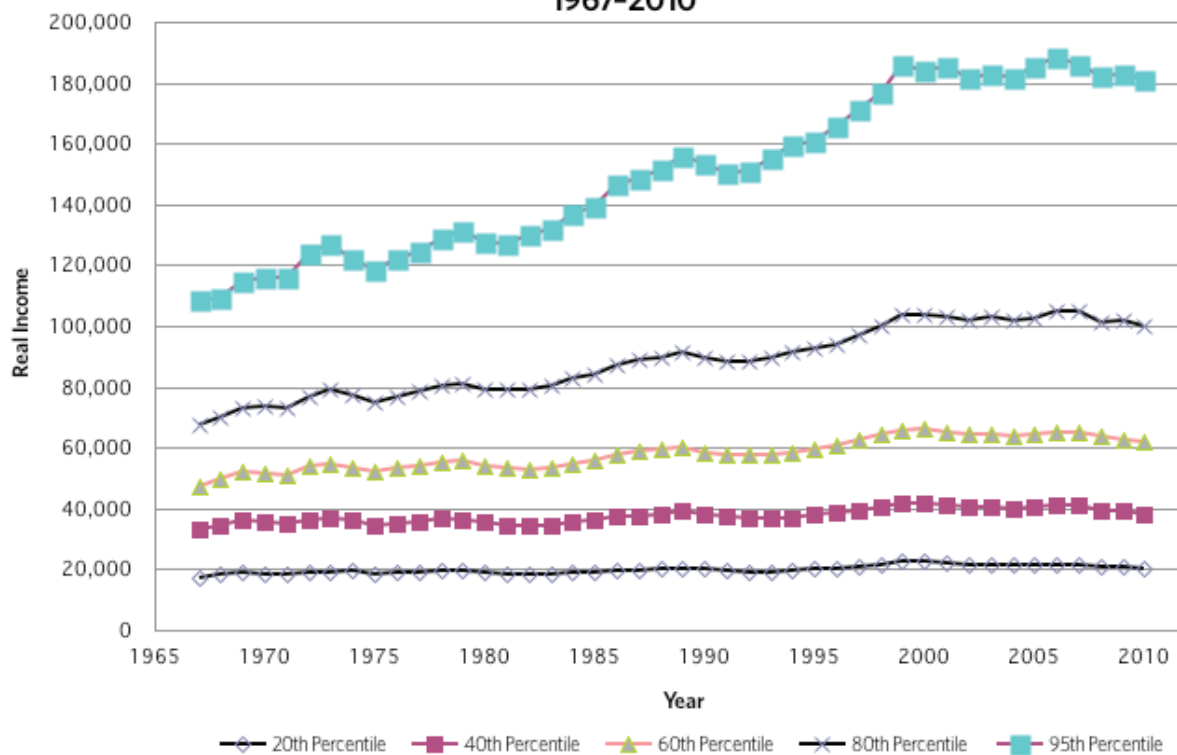
Our own research uses statistical causality tests to evaluate the claim that

federal aid drives tuition prices.⁹ We find that increased federal support is indeed causally related to tuition, but not in the direction predicted. We found that increases in the maximum Pell Grant caused private four-year institutions to decrease tuition. Our result suggests that increased Pell Grant support leaves less unmet financial need in the student body, and this reduces pressure on schools to offer tuition discounts based on need. This decreased pressure to offer discounts slows the rate of growth of list price tuition.

College Affordability

The term “affordability” is one of the most misunderstood and misused words in the higher education debate. To many observers, rising tuition alone is synonymous with reduced affordability. This ignores the fact that productivity growth over the past 40 years has caused a doubling of per capita real

Figure E. Real Household Income by Income Groups, 1967-2010



income in the United States. College tuition has indeed taken a rising share of the average family's budget, but so have most services. This is what happens when measured productivity growth is concentrated in some sectors, like manufacturing and other goods industries, but not others (such as most personal services).

The right way to think about affordability is to ask the following question: Over any given span of years, once you account for all price changes and all changes in family income, can a family purchase the exact same set of goods and services as before, and have more money left over to buy other things? If so, then no one is "forced" to drop out of college or to trade down to lower-priced educational alternatives. They may choose to attend different types of schools as the relative price of public versus private education changes, or as college tuition rises relative to automobiles or televisions. But if you *can* purchase the exact same basket of goods and services and then some, you are better off.

Despite the rising real cost of attendance, when you factor in all the grant aid and tuition discounts that families with different incomes could obtain, a year in college did not become less affordable for the median family between the 1970s and the early 2000s. The only group that experienced affordability problems was the poorest 20 percent of the population trying to attend private four-year institutions. Family incomes were rising rapidly enough to permit most families to pay the rising price of college, and the rising cost of other things, with more left over.

Real family income for families in the bottom half of the income distribution has been roughly stagnant for a long time.

This has changed over the past decade. With the exception of the super-rich, college affordability has diminished over the last 10 years. To understand why this has happened we have to look at the evolution of the

income distribution in the United States over the past half-century. Figure E tells the story of how real family income has changed, broken down by income quintiles. We also add the 95th percentile to see how people in the top 5 percent have fared.¹⁰ The

diagram tells a story that is increasingly well-known. Real family income for families in the bottom half of the income distribution has been roughly stagnant for a long time. There is some real income growth for families at the 60th percentile and considerable real income growth for higher income families. Perhaps the most striking thing about this graph is the fact that real income growth seems to have stopped for all of these income groups starting in roughly 2000.

The fact that real family income has been flat, including at the rarified 95th percentile of the income distribution, means that college has become increasingly less affordable for almost everyone starting in 2000. Over longer time horizons, the story is different, but what most families know is their most recent history and this is what has motivated much of the "affordability crisis" talk.

Stagnant real income growth across income groups poses a significant challenge to governments and to higher education institutions. In the past, the federal government and institutions could focus much of their effort on access for needy students. The Pell Grant Program and

need-based tuition discounting moderated the effect of stagnant real income growth for these families. The costs of this approach were passed on to taxpayers and students from higher income families who could still easily afford increases in the cost of attending college out of their growing incomes. This model no longer works as there are few families capable of financing the system without feeling real pain.

The causes of stagnant income growth that drive recent decreases in college affordability are not well understood. Clearly part of the story is that the economic growth we have experienced in the 2000s has not been shared as it was in the past. From 1947–73, productivity grew by 2.8 percent a year and real hourly compensation grew by 2.6 percent a year. The bulk of the national productivity growth that drove average living standards higher was passed on to workers in the form of increased wages. From 2000–09, productivity grew at an annual rate of 2.5 percent, which is quite close to the 1947–73 figure, but real hourly compensation only grew by 1.1 percent. Between 2000–09 only 44 percent of the productivity growth was passed on to workers.¹¹ This is a dramatic shift, and it has had profound effects on the country’s income distribution.

This change in the way national income is allocated is a driving force behind the current clamor about college affordability.

If the benefits of productivity growth had been shared the way they had been in the past, the redistribution inherent in a high-tuition, high-aid model could have continued with little concern.

Thus the system is under strain, and it comes from several sources. First, we have the profound changes in the way the benefits of growth are shared in our economy.

Second, political decisions to reduce government subsidies to public institutions have shifted more responsibility for paying for higher education onto families. Third, forces we have discussed above push up higher education costs. Absent sustained productivity growth, higher education cannot suspend price increases without diminishing quality. The college affordability problem is not simple, and there are no simple solutions.

Recap and Recommendations

The United States is no longer the leading producer of college graduates. According to the Organisation for Economic Co-operation and Development, in 2009 the United States was 16th in a ranking of countries by the fraction of the female population holding a college degree, and 15th in a ranking by the fraction of the male population holding a college degree.¹² This is a worrisome trend given the large gaps in average earnings and in unemployment rates between people

who hold a college degree and people whose training stopped with high school. The link between education and innovation should induce us to seek ways to raise the fraction of our population that receives a higher education simply

because it’s a good investment in the future. The White House has pledged to restore US primacy in higher education attainment, but the challenge is daunting.

The college affordability problem is not simple, and there are no simple solutions.

Most of us who study higher education can agree on a number of things. First, maintaining and improving access to high-quality programming is a desirable social goal. Access to higher education remains the ticket to the 21st century job market. To increase the fraction of the population that completes a college degree program we must have reasonably open access to the system regardless of income. If economic constraints chop off the socioeconomically disadvantaged segment of the population, we cannot hope to increase the fraction of the nation's labor force that holds a college degree. Students from the middle and upper income segment of the population already graduate at very high rates. The room for significant improvement is in the lower half of the income distribution.

Second, affordability is a problem for many families who are not poor, and over the last 10 years this problem has crept up the income ladder, increasing the political traction of the affordability issue.

Next, state funding for public higher education is unlikely to return to the more generous levels of the 1970s, and this compounds the affordability problem. Given the pressures of everything from health care mandates and K-12 spending to the costs of prisons and roads, this reprioritization of state finances seems permanent. Public institutions must adjust to the new reality. In the future, public higher education will be more tuition-driven than in the past.

Lastly, cost containment in higher education requires meaningful productivity improvements that maintain or improve educational outcomes. Mere cost cutting without regard to quality is not a productivity gain.

The policy choices we make to help us achieve these goals are crucial, and here is where fundamental differences arise. People who think about higher education within the dysfunction narrative come to very different

conclusions from those who take a broader approach to explaining and contextualizing the trajectory of college cost.

If colleges and universities are increasingly inefficient enterprises, the remedy is to change the incentives that produce the inefficiency or to directly regulate pricing and

other university choices. But the federal government has few levers to pull that directly affect how schools behave, so policy proposals based on the dysfunction narrative tend to be rules-based and punitive. In general, we think this approach to policy-making overestimates what government can accomplish and oversimplifies the real problems we face in achieving generally agreed upon goals.

Simplistic rules such as price controls suffer from many defects. They frequently address symptoms instead of causes, and they often cannot distinguish between good behavior and bad behavior. A school that increased its discount rate in order to attract lower income students would have to push

To increase the fraction of the population that completes a college degree program we must have reasonably open access to the system regardless of income.

up its list price to preserve revenue. A school like this might run afoul of price controls and face sanctions for actually trying to improve access for lower income students. A public university that lost substantial state support might be faced with a choice of raising list price to minimize lost revenue or letting the quality of its program decline. Any simple rule or price control is likely to generate perverse unintended consequences.

Rules-based regulatory approaches are unlikely to improve access, make college more affordable, or transform productivity in the higher education industry. But there are more modest and targeted policy options that can help.

Our need-based financial aid system is needlessly complex. The main federal program for making a college education more affordable for millions of American students is the Pell Grant. But if you ask people to explain how the Pell Grant Program works, most will be unable to answer very clearly. To qualify for aid, families must fill out complex financial disclosure forms, and they often have no clear idea what a year at any particular college will cost until they are almost at the end of the long six-month college application process. This uncertainty is an economic barrier that induces many families to think that postsecondary education is simply unattainable for them.

There are a number of good proposals to simplify our aid programs, however we will not delve into any detail here. But aid simplification is one meaningful step we can take to begin changing the incentives of families early enough for them to make the

set of decisions that lead their children onto the path of college preparatory training.

The Holy Grail of higher education reform is productivity growth of the sort that has revolutionized manufacturing over the last century. Some argue this future is upon us in the form of distance education. Distance education is indeed an increasing component of coursework at many institutions, and its impact is controversial and not fully understood. There is an ongoing debate about whether or not this is a truly disruptive technology that will fundamentally change teaching and learning.

Some courses lend themselves to the distance education model. These courses involve relatively static knowledge that needs to be imparted to large groups of students each year, and situations in which the assessment of student learning can be easily automated. For undergraduate courses of this sort, we are already well down the path of exploring the cost-benefit tradeoff. In other situations, course material may evolve too fast or good learning and assessment may require small-group interaction, discussions, and intensive writing. In these cases the artisan model may offer much better outcomes.

We view distance learning, and other creative uses of digital media, as another *incremental* tool to change, improve, and perhaps modestly lower the cost of higher education. Its utility

and best uses will be discerned over time by years of experimentation and testing in different settings.

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Final Thoughts

The American higher education system has evolved over more than a century to meet a wide variety of social needs, including undergraduate teaching, graduate and professional training, basic research, and public service. It is a system under stress. But the economic and political forces that are tugging at it also affect many other parts of the economy. This is the context that is often missing from the debate, and our work is an attempt to fill in that blank.

Our story about rising college cost lacks villains, and we see no simple policy remedies to reduce cost that would not also reduce quality or ration access. We see the forces for positive change as incremental, and arising from within as colleges grapple with their own needs. The other factors driving college tuition also reflect large political and economic changes

as states grapple with budget difficulties and the country deals with the effects of a more unequal distribution of income and wealth. Making college more affordable is largely contingent on softening the impact

of these larger issues. There are indeed problems in American higher education that can be remedied by specific policy changes. Our complex financial aid system is a real barrier to increasing the numbers of college-qualified students who benefit from advanced training. And the financing compact between

public universities and the states is badly in need of a rewriting. Public universities need to escape the budget roller coaster that disadvantages them compared to their private counterparts. But the first step on the path of wisdom is to ratchet down the overheated rhetoric of crisis and fix what can be fixed.

Our story about rising college cost lacks villains, and we see no simple policy remedies to reduce cost that would not also reduce quality or ration access.

ENDNOTES

- 1 The data for this figure come from the Department of Commerce, Bureau of Economic Analysis, Table 2.4.4 Price Indexes for Personal Consumption Expenditures by Type of Product.
- 2 The data are for Education and General Expenditures minus Scholarship and Fellowships. They come from two sources, Table 345 from the 2006 *Digest of Education Statistics* for the data through 1996 and from the Delta Cost Project for the later years. Details of the construction of this index are available from the authors.
- 3 The source for this figure is Table 346 in the 2007 *Digest of Education Statistics*.
- 4 See Jeffrey Brainard, Paul Fain, and Kathryn Masterson, "Support Staff Jobs Double in 20 Years, Outpacing Enrollment," *Chronicle of Higher Education*, April 24, 2009, page A1.
- 5 These data come from two sources: *The National Industry-Occupation Employment Matrix, 1970, 1978, and Projected 1990*, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2086, April 1981, and the Occupational Employment Statistics website (<http://www.bls.gov/oes/>) from which we extracted the data for 2008.
- 6 The data for this figure come from the Bureau of Economic Analysis, Table 2.4.5 Personal Consumption Expenditures by Product and Table 3.1.6 Government Expenditures by Function. We also adjusted these basic data to account for tax expenditures by using data from the College Board's *Trends in Student Aid 2011*.
- 7 This estimate used data for student enrollment from Table 197 and state and local appropriations from Table 365, both from the *Digest of Education Statistics 2010*.
- 8 Authors' calculation using Delta Cost Project data for the variables `tuition03`, `net_student_tuition`, and `fte_count` for the matched 1987 to 2009 samples.
- 9 Robert B. Archibald and David H. Feldman, *Why Does College Cost So Much?* (Oxford University Press, 2011) pages 267-269.
- 10 The data for the income distribution come from the Census Bureau, see Table H-1. Income Limits for Each Fifth and Top 5 percent of all Households: 1967-2010.
- 11 These data come from the Bureau of Labor Statistics, see Susan Fleck, John Glaser, and Shawn Sprague, "The compensation-productivity gap: a visual essay," *Monthly Labor Review*, January 2011, pages 57-69.
- 12 <http://www.oecd.org/dataoecd/56/9/37863998.pdf> (accessed February 15, 2012)

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