Devolving public universities

Lessons from America

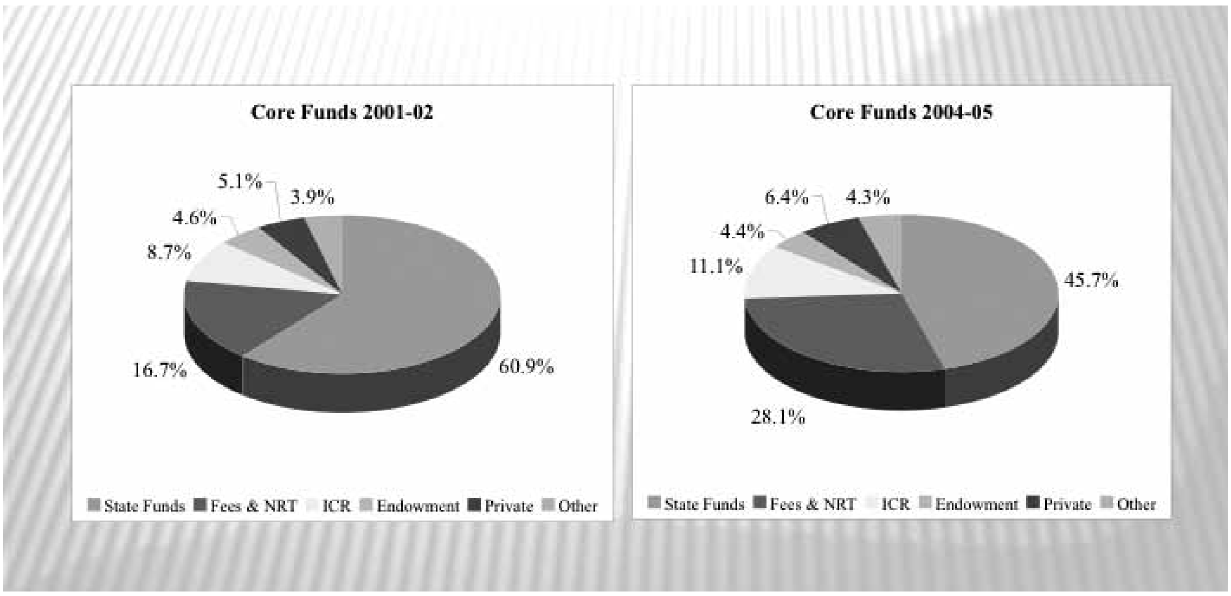
Christopher Newfield

It is easy enough to be fatalistic about the current funding situation in higher education. US public universities have locked themselves into a model that has led to the slashing of public funding off and on for thirty years and that has been forcing public universities towards an ever-growing dependence on private money. This funding model rests on (though is not limited to) the 'high tuition/high aid' paradigm, in which tuition is to be pushed up rapidly – it's now between $15,000 and $20,000 for in-state students at many leading public universities – with offsets for needy students that come through financial aid, and a vast pool of student loans whose total volume last year surpassed the country's aggregate credit card debt.[1] Oddly enough, the unsustainability of the overall financial system that became obvious in 2008 has for the moment made that system politically stronger. The same has happened to the American funding model for higher education (AFM). Its clear failure to maintain necessary revenues has only increased its power over the educational mission. In the incumbent model's weakness lies its strength. In the strength of the criticisms lies their futility. Hence our widespread fatalism.

A broken funding model

I have myself written many such criticisms of the American funding model, and will skip the main arguments and evidence except to point out three features of it.[2] The first is obvious, though with a twist, but the second two are counter-intuitive.

The first is that this model has been shifting public university revenues to a specific kind of private source, for three decades. Voters are often told that the shift means that wealthy donors and research sponsors have picked up a big part of the educational bill, but this is simply not true. The AFM means shifting educational costs from the overall population to students and their families. The model also shifts costs from old to young, and in California from a 70 per cent white voting public to a 70 per cent student-of-colour secondary-school population. It destroys the mutualization principle of social development.



The second effect of the American funding model is that it has damaged American educational attainment. The USA has had a comparative educational advantage over the rest of the wealthy world for about 150 years – first at the high-school level and then in college degrees. Now, for the first time in US history, younger people are less educated than their baby-boomer parents.[3] If you are wondering whether privatization caused this destruction, the answer is yes it did.[4] The private investment process gives the least money to the colleges with the lowest graduation rates, which receive a disproportionately high percentage of low-income and first-generation students. The decades-old failure of the bottom three-quarters of the country's students (measured by socio-economic status) to improve their educational outcomes has undermined overall advances in attainment. In about twenty years, the funding model has destroyed the USA's educational advantage (it is now twelfth in BA attainment rates and falling).

The third effect of privatization is that it is wrecking the financial solvency of high-quality public universities. The funding model doesn't produce stability because the net private revenues never make up for cuts to the public funding lost to cuts. This structural shortfall will result from the British government's replacement of most of the teaching grant with a scheme of high fees and loans. It has been happening for a long time in California, and based on that state's experience even a tripling of fees won't make up for the teaching grant.[5]

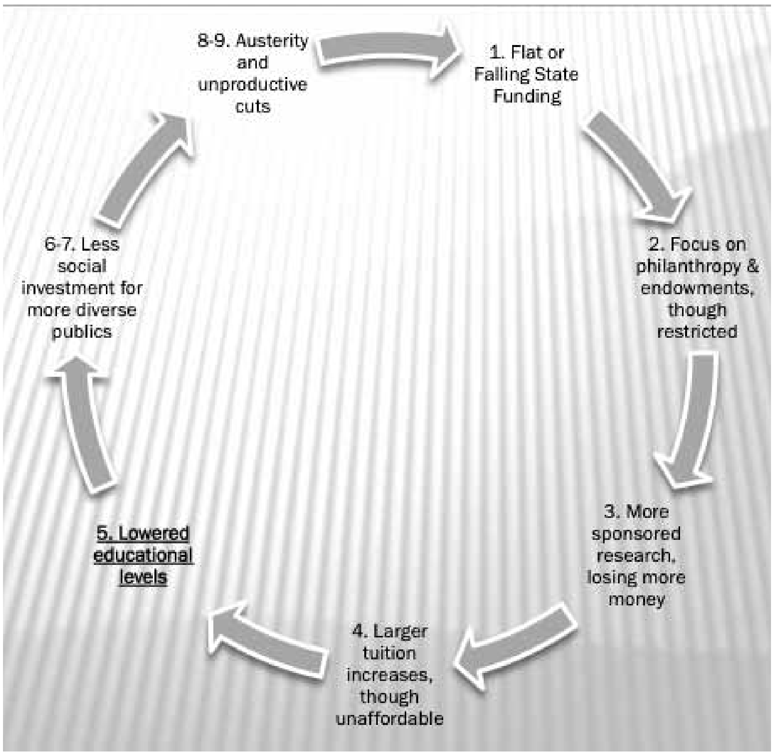
A devolutionary cycle

How can this irresponsible budgetary behaviour, this surprisingly common 'absurd strategy', which is repeatedly reapplied in the wake of its evident failure to achieve its stated goals, continue year after year?[6] In my Senate-based experience with senior managers, they regard the current paradigm as dictated by the politico-financial system in which they operate, so 'realism' reduces all counterfactuals and failures to the status of 'anomalies' in Thomas Kuhn's sense. This equates to something like Slavoj Žižek's analysis of the 'fetishistic logic of disavowal', which in the case of the AFM translates as 'I know raising student fees is meaningless, but I do it nonetheless.'[7] But we can also offer a simple answer in terms of economic interests that senior managers feel they are obliged to serve: public funding of public universities aims not mainly at the public good of stable funding for today's young minds or tomorrow's workforce, but structurally at protecting a subsidy pipeline for economically strategic research and medical services of direct interest to policymakers.[8] That sounds harshly reductive, but the private use of public funds as invisible free money is not unprecedented.

What we have in the United States are millions of non-affluent students paying more to get less while taking on more debt, declining educational outcomes, and financial unsustainability for the public colleges and universities that educate over three-quarters of the USA's 18–19 million students. Over the page is what the overall results look like – a full blown *devolutionary cycle*.

California is an exemplary case in which budget debates have swallowed up discussions of the constructive role of the public sector, and this has devoured general awareness of the constructive activities of universities. There are *no* public discussions of what professors and students actually do together, what they should do, or what the substantive cognitive goals of universities are. To put it another way, education itself does not appear in the devolutionary cycle. Everything is about money – raising it, but mostly cutting it. We now rarely define educational needs and then work out budgets, but start with budgets to which we repeatedly adapt education. Educational goals are driven by financial conditions, the classic condition of neoliberal social systems. In my experience, this is also true inside universities themselves, where most administrations have lost the will or desire to protect the non-profit mission from political and financial forces, and often now transmit these forces inward to shape education.

The final steps of the cycle are particularly important, because they help us see the specific conditions of the post-2008 world. These cuts make no sense from the perspective of late capitalist rationality, which was said to maintain US economic leadership by investing in its knowledge workers. That model was summarized twenty years ago in Robert Reich's influential book *The Work of Nations* (1991), in which a class of 'symbolic analysts' or knowledge workers would use their advanced learning and cognitive prowess to create the new ideas and industries that would sustain the nation's wealth as well as their own.[9] Reich thought that this would avoid a 'race to the bottom' to have the lowest costs, the lowest wages, the weakest bargaining rights and worst environmental protections, because he assumed US leaders wanted to have a large, prosperous middle class and would make the national social investments in innovative capacities that a large middle class requires, including investments in public universities. It is now clear that Reich was wrong.



Honey, I shrunk the kids

We seem instead to have entered the advanced stages of a situation in which key economic players in wealthy nations feel no further obligation to invest in domestic production, much less in local society. Given the ongoing exposure of banks to potentially very large losses in places like Ireland and Greece, their collective position has been zero per cent restructuring – which would force banks to accept losses – and 100 per cent austerity for society. Although tax revenue as a share of gross domestic product is at its lowest point in the USA in decades, most businesses and high-net-worth individuals claim still to be overtaxed, and pursue tax avoidance with a sense that they are saving not only their own money but the principle of total capital mobility as such.[10] For example, Silicon Valley has not in general come out in favour of restored public investment in California. The logic here is that every dollar not spent on society can be put into trading or foreign investments where it will multiply faster than were it put into productive uses at home. There is thus neither private nor public action to rebuild employment. Former GE CEO Jack Welch recently spoke for many in the business world: 'Technology has changed the game in jobs.… You couple the habits [of efficiency] from a deep recession [with] an exponential increase in technology, and you're not going to see jobs for a long, long time.'[11]

If Anglo-American capitalism isn't going to have all those middle-class jobs that demand at least some college education – tech sales, project management, human resources, accounting and every other back-office function – then Anglo-American leaders naturally wonder, why have the big knowledge factories that create those workers? Large public universities took on the vital obligation of *mass quality* – high quality for mass enrolments – at a time when corporate America would hire intelligent but generically trained college grads by the hundreds of thousands. These grads staffed gigantic multidivisional organizations, which in their 1960s' heyday John Kenneth Galbraith termed the 'technostructure'. Such jobs required varying ratios of conformity and creativity, and graduates from the Universities of California, Washington, Michigan, and so on were its prototypical members: bright, cooperative, motivated, ready for further training, and yet *not* individually tutored into the capacity for self-directing independent and complex intellectual projects.

Now the large, stable corporations and their many satellites for which State U was preparing its brainy masses have internationalized, downsized or disappeared. Since the 1990s, their 'delayered' descendents have been applying versions of 'knowledge management' to standardize and outsource the highest possible percentage of knowledge workers, while keeping a much smaller number of 'niche geniuses' to invent new products with potential for those 30 per cent or 50 per cent margins.[12] The Apple economy does not provide mass middle-class employment as, say, the Lockheed economy once did. Millions of smart graduates face un- or underemployment if they cannot become 'unique' – in a bottom-line way.[13]

Given these calculations, it is logical for the financial and political worlds to conclude that economic recovery doesn't mean recovery either for middle-class workers or for the high-quality public multiversities that produced them. This explains why, although the middle class is a sacred cow in US and UK politics, there are few signs that the powers that be are working to keep it. On the contrary, a previous generation of business leaders undid the country's long-term dominance in manufacturing, and the current generation of business leaders liquefies labour in high-tech sectors according to every shift in comparative cost advantage and market demand. Few of these executives see why universities shouldn't start decimating their employment base as well. This project is proceeding apace in California, supervised by Democratic governor Jerry Brown, who started his term by aiming for Arnold Schwarzenegger's $800 million cut for 2009–10 (over 20 per cent) with $500 million this year, to which in June 2011 he added another $150 million cut, with a revenue 'trigger' that will cut a further $100 million (all in the 2011–12 academic year) if unrealistic revenue increases aren't realized.

The devolutionary cycle is in the process of transforming the USA and the UK, whether they stay knowledge societies or not, into *post-middle-class* societies. Public universities are a primary object of this larger social transition.

Sadly, no

After years of documenting the devolutionary cycle and its sources, my core question is: how do we make it stop? My answer to academics is, *we* won't. I say this even though I can imagine the campaign for the university as a public good that would actually work. We would do a great deal of internal housekeeping that is overdue. I could see us taking our cue from the critics that rightly point out that we can't simply go back to the public for more money without much better explanations of what the money is for, and redefining the university's status as a public good. Faculty could in theory fire up public opposition by bringing the results of meaningful budgetary transparency into public circulation, so that the public understands the true costs of mass quality and the need to sustain public revenues for it. Budget priorities might be established, and much administrative 'delayering' would be likely since that has been a primary source of cost growth. Faculty could explain what we actually do to create individual capabilities, new technologies, and so on – what the day in, day out work is like that must be funded. Faculty could also publicize the tuition levels that will in a few years produce $40,000 annual fees at places like the University of California.[14] Faculty could drag administrators back into contact with their own academic communities, rather than primarily with the donors, business leaders and politicians whom they now see as their primary constituency. We would build on the actual popularity of public universities, as identified in polls that show that three-quarters of respondents think that public universities were underfunded and that two-thirds of them want to raise taxes rather than raise fees.[15]

We could also articulate a single university public good with two sides. The first side is that the university creates a *sustainable economy*. The second is that it produces the *individual development* that allows each graduate to make a personally pleasurable and yet systemically creative contribution to a sustainable economy. We would define each of these terms at length, explain that sustainability depends on creativity, how this follows not from utopian possibilities but from our existing academic practices, and how this will reverse our decline into post-middle-class stagnation. All of us making common cause in the academic world could block the devolutionary cycle – around the issue of educational quality.

But none of this is actually going to happen. There are too few of us, producing too little, and we're too late. The private sector move on a huge captive market is happening too fast. University leadership does not notably oppose its own further absorption into an unstable financial system. The money trails are too obscured to inspire Greek-style rage. Resistance will not happen on the social movement scale required – in our current institutions. What we're going to see instead is a splitting apart of the non-profit public portion of the university world – I'm positing, with lamentation, that the great Anglo-American general-purpose public universities will not recover. Ultimately, the positive work, as I see it, will be to identify the dominant paradigms to come, and to develop the good ones. Here, however, I focus on where the logic of the American Funding Model, if unrestrained, will lead us; what I will call the *Gold U*. In doing so, I enter the future tense of a future I imagine, but that I think will likely come about.

Gold U

Gold U thought and practice will continue to emerge from the great public flagships and their ancillary systems that will be dragged in their wake – UC Berkeley, Michigan–Ann Arbor, and so on. These big publics invented the AFM semi-public university as I have been describing it, which one way or another has been replacing public with private funding over many years.

Gold U does enormous volumes of high-end research at colossal medical centres and national laboratories, and loses enormous amounts of money doing so (there's UC's gross revenues of $3.5 billion, which lead to net revenues of *minus* $720 million).[16] But they lose this money on behalf of politically and financially powerful external sponsors, such as Intel, BP, and the Departments of Energy and Defense, as well as of thousands of overloaded faculty scientists, struggling with reduced grant acceptance rates and shrinking support staff.[17] Gold U will be obliged to continue to lose this money in order to save money for influential sponsors. Similarly, philanthropy, given its highly targeted nature, doesn't have a prayer of keeping up with cuts to public revenues for general operations. The philanthropic network is also compromised by being embedded in the top fraction of American business and finance that has decoupled from the fate of the domestic economy. Fundraisers will continue to seek the 'game-changing eight-figure gift', but they will be looking to people who have little or no stake in mass quality for the batches of 220,000 or 450,000 college students who are piling out of a K-12 system that in California is 70 per cent students of colour. If the top 0.1 per cent or 1 per cent of the income ladder gives big, it will be as a targeted investment in a technology or disease area of special interest to their social world or to their portfolios. These same major players will continue to put a bipartisan kibosh on serious university resistance to cuts, since that would eventually lead to restoring business and various kinds of wealth taxes the cutting of which has allowed for incomes of the top 1 per cent to grow from between 90 per cent and 385 per cent (for the top 0.01 per cent, in real dollars) in the period after 1975 that saw real incomes grow for the bottom 90 per cent by –1 per cent.[18]

Gold U will turn for money to its natural constituency, the middle and upper middle class (the top 20 per cent and the top 10 per cent exclusive of the top 1 per cent, respectively), which did see moderate income growth and who will be asked to cover fee hikes not quite of the 300 per cent grandeur about to appear in the United Kingdom, but of many small increases (of 7–10 per cent per year, three times the rate of overall inflation), punctuated with giant leaps of 20–33 per cent every few years (for 2009–10 and 2011–12 in California). Since Gold U's private-sector partners have been redistributing wealth upward for years, leaving half of the student population with no private reserves for college, Gold U will take 33 per cent and in some years 50 per cent of fee increase money to pay financial aid.[19] For this and other reasons, such universities will continue to cut educational opportunities, particularly the expensive, small-scale, face-to-face student-centred learning that is essential to the higher-order cognitive skills clearly needed to create equitable, sustainable economies and to solve the world's most urgent problems. These repeated cuts to educational capacity mean that the coming decade will intensify the last decade's student rule of thumb of *pay more to get less*. Student customers, especially those with the strongest academic records, will realize that $37,000 for State U lectures with 700 students and half-graded problem sets is not a good consumer deal, and will go elsewhere. Gold U will offer factory-style white-collar education at a high price for a post-white-collar economy. Although universities have traditionally enjoyed a captive audience, the business model of charging more for less will produce deteriorating returns, threatening not only the educational core but also the capacity of the university to transfer tuition money to cover the deficits created by sponsored research.

Gold U will look to *technology* for rescue, and its senior managers will be offered attractive service packages by e-learning companies, who will promise plug-and-play, massively ramped up, online university services. E-entrepreneurs will say that, like most services, universities suffer from Baumol's Cost Disease, meaning that they must keep raising their prices because they are labour-intensive, so haven't used technology to increase productivity as have other industries.[20] In a phrase already in use by many a university president, the e-learning companies will say 'academic staff is your greatest expense'. They will state that there is no reason why education should be the only sector that cannot be made more affordable and effective with technology. Technology has transformed both the composition and the consumption of music, which is more widely distributed because the excess costs have been wrung out by the Internet. Universities, they will say, are a strange mixture of 1970s' government and 1980s' record companies. Why not connect the student directly to the learning process and really cut your labour costs for the first time?

These arguments will be more impressive because they will come not from the infamous diploma mills that are regularly embarrassed by US federal investigations, but from former executives of companies like Yahoo, Apple, Pixar and Paramount Pictures. Their new e-ventures will have names like Encore, a spin-off announced recently by UCLA Extension.[21] The sales image won't be a classroom with an overhead projector in a rented two-storey office building next to the Cal Worthington Dodge dealership, but TED Talks, where PowerPoint meets film production to display a given field's most famous lecturer.[22] Gold U will hear that it can solve its employee-driven cost disease by becoming TED University.

Now classroom technology is a wonderful thing, and is good for teaching, especially when used by actual teachers. But classroom technology will arrive at Gold U embedded in media companies, and this is a different matter altogether. These companies – from computing, entertainment, telecommunications and their various hybrids – have locked a number of elements into American business culture that will become part of Gold U's management and financial systems. One name for this group of features is 'open innovation' (Henry Chesbrough), and I offer this list of the sector's common features:[23]

1. Other people's research (free content).
2. Other people's money (payroll, infrastructure).
3. Controlled standard (Microsoft-style 'ecosystems').[24]
4. Added value to the intermediary.
5. Top-down/charismatic authority.

The way these features of the TED sector will work in Gold U is this. The e-learning consultants and executives will define the platform, the application programming interfaces, and content-presentational needs. This process is far more time-consuming than most people realize, and management will focus continuously on minimizing its costs. The content providers – professors, support staff, graduate students, undergraduates – will remain on public payroll or will be given modest honoraria, perhaps with offers of future participation for special cases, and thus expert staff will be cost-free to the company. The platform will be 'owned' by the e-learning company, which will have a commercial interest in maximizing its customer base, and will thus have decision rights over course materials, modes of delivery, and so on: company representatives will act as producers and directors, and will have final cut over the 'screenplay' offered by the academic experts. The e-learning company will assemble the product, using designers, programmers, illustrators, and so on, located in India, China, Malaysia, Vietnam, and so on, following standard Silicon Valley practice. The company will control the customer's relationship to the platform product, in the style of iTunes. The initial goal will be market growth rather than profits, but the e-learning company will own the standard behind the delivery system, and will be able to control additions in terms of both content and price. Marketing costs will rise to perhaps 25 per cent of revenues, which is typical of for-profit education companies. Other costs include the enormous executive salaries that media companies typically provide. The media–university fusion already at work in companies like Kaplan and Apollo is not auspicious, as for-profit education companies regularly pay their CEOs between several million and several tens of millions of dollars a year. E-learning companies will be required to generate high margins to satisfy typical investors in computer and telecom companies, which will oblige management to make their position as intermediary as monopolistic as possible. Gold U's existing reliance on adjunct and graduate student labour will make the extraction of revenues that much easier.

Gold U will find that its core functions of creating and disseminating research get to most of its students and to the public through its e-learning platform. High-production Web 2.0 will increasingly drive what should be taught and how, and indeed the kind of research that will actually reach the public. In struggling to operate in the black, e-learning will maintain a laser-like focus on expanding its market share within Gold U, marketing online courses to students attending more advanced conventional courses. Their additional capacity will also make them very attractive to students who can no longer find regular classes. Gold U will come increasingly to resemble an Apple Store, with a happy throng trying out knowledge tools at the entry level and more advanced students queuing up at the course equivalent of the Genius Bar, where Q&A tutorials support online materials. Like all universities, Gold U's distinctive 'market niche' had consisted of odd, counter-intuitive, heterodoxic, non-normalized, unpopular, incomprehensible, wrong-seeming ideas that produced breakthroughs the normal world would never pursue. The public university had been a country of outliers. TED-ified Gold U must follow the wisdom of crowds.

Sadly, after all this, Gold U's finances will be no better than before. Major new costs are built into its e-learning operations. Competition is expensive, as other providers force Gold U to invest continuously in upgrades that allow the platform ever more adequately to simulate the individualized feedback of an actual teacher. It turns out too that the student-consumers want it both ways – the Hollywood production values of TED University and that individualized feedback of 'Classic College'. Gold U is still there to provide private partners some funds to leverage, but it fails to get its core educational services much beyond where they already were. The biggest losers are students themselves: a glossy but not necessarily more intelligent project, shorn of the interactive features that enable creative capacities but that cost money, will arrive now at a *higher* price point. In 2007–08, students at American for-profit college companies paid over $30,000 per year for their schooling.[25] Gold U never does get to attack its real cost disease, which was not front-line content providers whether we call them designers or professors or graduate students, but its overblown infrastructure and its management.

Obviously this dystopian progression must not be allowed to happen. The practices of mass quality in public education are implemented every day in thousands of universities. The professional activities and imagination need now to recapture the university's managerial structures, which have been allowed to cut themselves off from the educational settings they were intended to serve.

Notes

1. Kiplinger's Personal Finance Letter, '50 Best Values in Public Colleges', MSN-Money, n.d., http://articles.moneycentral.msn.com/CollegeAndFamily/CutCollegeCosts/50BestValuesInPublicColleges.aspx; Mary Pilon, 'Student-Loan Debt Surpasses Credit Cards', *Wall Street Journal*, 9 August 2010, http://blogs.wsj.com/economics/2010/08/09/student-loan-debt-surpasses-credit-cards/.
2. See, for example, Christopher Newfield, 'The End of the American Funding Model: What Comes Next?', *American Literature*, September 2010; and, for a sustained version, *Unmaking the Public University: The Forty Year Assault on the Middle Class*, Harvard University Press, Cambridge MA, 2008.
3. Patrick M. Callan, 'Introduction: International Comparisons Highlight Educational Gaps between Young and Older Americans', *Measuring Up 2006*, National Center for Public Policy and Higher Education, measuringuphighereducation.org/commentary/introduction.cfm. The most comprehensive analysis of the rise and fall of US educational advantage is Claudia Goldin and Lawrence F. Katz, *The Race between Education and Technology*, Belknap Press of Harvard University Press, Cambridge MA, 2008.
4. See Newfield, 'The End of the American Funding Model'.
5. The first public analysis of this information was a UC Academic Senate report: Christopher Newfield et al., *Current Budget Trends and the Future of the University of California*, December 2006, which led to the first faculty presentation of a budgetary perspective to the UC Board of Regents in May 2007, www.universityofcalifornia.edu/senate/reports/AC.Futures.Report.0107.pdf.
6. Maya Beauvallet, *Les Stratégies absurdes: comment faire pire en croyant faire mieux*, Seuil, Paris, 2009.
7. Slavoj Žižek, 'Fetishism and its Vicissitudes', in *The Plague of Fantasies*, Verso, London, 1997.
8. For an establishmentarian example, see the discussions of medical schools in Derek C. Bok, *Universities in the Marketplace: The Commercialization of Higher Education*., Princeton University Press, Princeton NJ, 2003.
9. Robert B. Reich, *The Work of Nations: Preparing Ourselves for 21st-Century Capitalism*, Knopf, New York, 1991.
10. Office of Management and Budget, Historical Tables, Table 1.2, www.whitehouse.gov/omb/budget/Historicals. For a brief discussion, see Bruce Bartlett, 'Are Taxes in the U.S. High or Low?', *New York Times*, 31 May 2011, http://economix.blogs.nytimes.com/2011/05/31/are-taxes-in-the-u-s-high-or-low.
11. Cited in Fareed Zakaria, *The Post-American World: Release 2.0*, W.W. Norton, New York, 2011, p. 209.
12. See, for example, Turley Muller, 'Apple iPhone's Substantial Impact on Gross Margin', *Seeking Alpha*, 29 July 2009, http://seekingalpha.com/article/152059–apple-iphone-s-substantial-impact-on-gross-margin.
13. I discuss the 1960s' technostructure and 1990s' knowledge management in chs 3 and 8 of *Unmaking the Public University*.
14. Christopher Newfield, 'Regent Blum Wants to Raise In-State Fees to $40,000', *Remaking the University*, http://utotherescue.blogspot.com/2011/03/slide-11–4400–layoffs-3700–unfilled.html.
15. Mark Baldassare et al, 'PPIC Statewide Survey: Californians and Higher Education', Public Policy Institute of California, November 2010, www.ppic.org/main/publication.asp?i=963.
16. Nanette Asimov, 'UC: Millions Lost in Research Grants', *San Francisco Chronicle*, 16 June 2010, www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/06/16/baoc1dti1v.dtl.
17. On declining acceptance rates from US federal agencies, see, for example, Michael S. Teitelbaum, 'Structural Disequilibria in Biomedical Research', *Science*, vol. 321, no. 5889, 2008, pp. 644–5; Brian C. Martinson, 'Universities and the Money Fix', *Nature*, vol. 449, no. 7159, 2007, pp. 141–2. On shrinking staff support (in spite of increases in administrative costs), see evidence from commentator 'TB' in Newfield, 'Feeding the Cuts, Pt 1', *Remaking the University,* 13 July 2011, http://utotherescue.blogspot.com/2011/07/feeding-cuts-part-i.html.
18. For an example of wealthy university fiduciaries talking down public funding recovery, see Christopher Newfield, 'An Odd Regental Duet This Morning', *Rethinking the University*, 16 March 2011, http://utotherescue.blogspot.com/2011/03/odd-regental-duet-this-morning.html. The figure for income growth differentials is taken from '(Not) Spreading the Wealth', *Washington Post*, 18 June 2011, www.washingtonpost.com/wp-srv/special/business/income-inequality/, a study based in part on the research of Thomas Piketty and Emmanuel Saez.
19. The lack of personal financial resources for college refers to the share of school lunch recipients in California's primary and secondary schools. See Tom Mortenson, *California at the Edge of a Cliff*, January 2009, p. 8, www.postsecondary.org/archives/Reports/CAattheEdge1.pdf.
20. William J. Baumol and William G. Bowen, 'On the Performing Arts: The Anatomy of their Economic Problems', *American Economic Review*, vol. 55, no. 1/2. March 1965, pp. 495–502.
21. Anon., 'Aiding Baby Boomers, New Online Education Company Addresses Employment Needs', UCLA Newsroom, 22 June 2011, http://newsroom.ucla.edu/portal/ucla/encore-208374.aspx. Encore's Hollywood-Silicon Valley profiles can be reviewed at http://encoreci.com/about.
22. TED's website is www.ted.com/talks.
23. Henry William Chesbrough, *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business Press, Watertown MA, 2003.
24. Marshall Phelps and David Kline, *Burning the Ships: Transforming Your Company's Culture through Intellectual Property Strategy*, Wiley, Hoboken NJ, 2009.
25. John Lauerman, 'For-Profit College Costs Surpass Nonprofit Peers in U.S. Study', *Bloomberg*, 26 May 2010, www.bloomberg.com/news/2011–05–26/for-profit-college-costs-surpass-nonprofit-peers-in-u-s-study.html.