

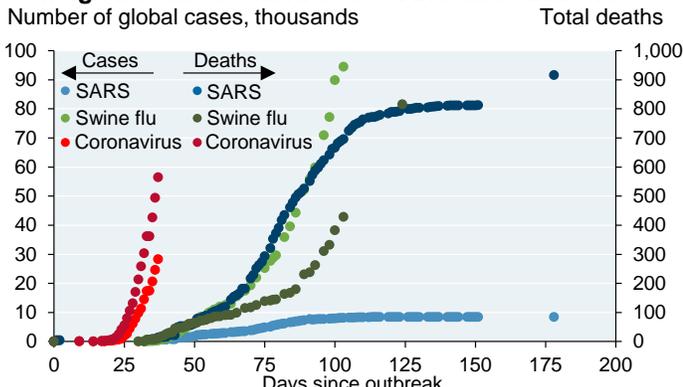


Answering questions on the coronavirus, US equity market concentration and megacap stocks, the Iowa caucus, the cost of Democratic Healthcare plans and the student loan mess

What do we know about the coronavirus based on the latest data?

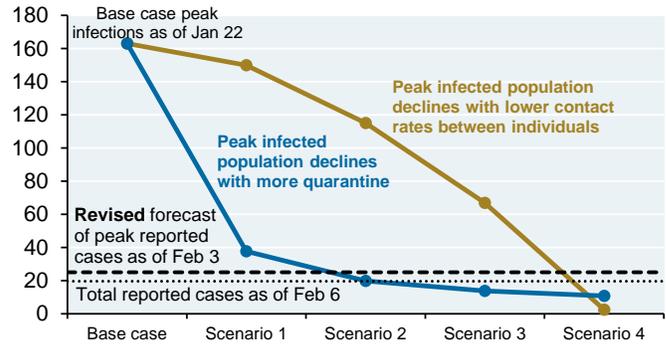
A few weeks ago, zoonotic epidemiologists (scientists who study the transmission of animal borne illnesses to humans) started ringing alarm bells on the coronavirus based on the rising rate of infections in Wuhan, train and flight bookings inside China, and estimated disease parameters on transmission and mortality. Case in point: the 2nd chart from researchers at the Life Sciences, Public Health and Mathematics Departments at York University in Toronto. Their Jan 22 base case estimate for Wuhan: a peak infected population of 163,000, and a mean reproductive number that could be as high as 6.5 (compared to 4.9 for SARS in Beijing, and MERS in Jeddah 3.5-6.7 and Riyadh 2.0-2.8). However, they also modeled aggressive policies on quarantine and contact-reducing behaviors between infected and asymptomatic individuals, which they believed could sharply reduce infection rates. That's what *may* have happened since: their latest projection of peak cumulative reported cases in Wuhan fell to ~25,000 (actual reported cases are currently 19,665), and they expect a peak daily infection rate in Wuhan within the next week. Infection rates in other large Chinese cities may be 1-2 weeks behind Wuhan, so total reported coronavirus cases throughout China could reach 100,000-300,000, with the range heavily affected by travel bans and contact rate policies given the infection's high reproductive number. This is just one set of estimates (other sources vary in severity), and it is impossible to account for any mutations.

Contagion from coronavirus vs SARS and swine flu



Source: WHO, J.P. Morgan. February 6, 2020.

Initial and revised infection rates in Wuhan: the impact of quarantine and contact rate policies, Thousands

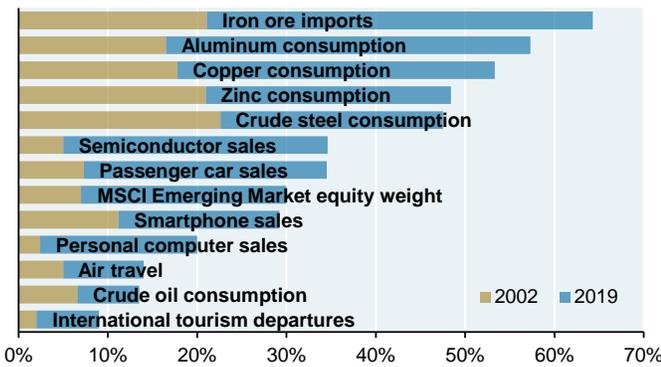


Source: Wu et al. "Estimation of the transmission risk of 2019 n-Cov", York University Laboratory of Industrial and Applied Mathematics. Jan 2020.

The importance of China to the global economy dwarfs what it was in 2003 when SARS occurred, so it makes sense that many analysts are marking down Q1/Q2 Chinese growth forecasts **very sharply**, and making more modest reductions to Japan, the rest of Southeast Asia, Europe and the US. But the history of these viruses shows that within a quarter or so of peak infection rates, there's usually a growth bump and an eventual return to trend growth, which as of mid-January was improving around the world (slowly).

China's growing market and economic importance

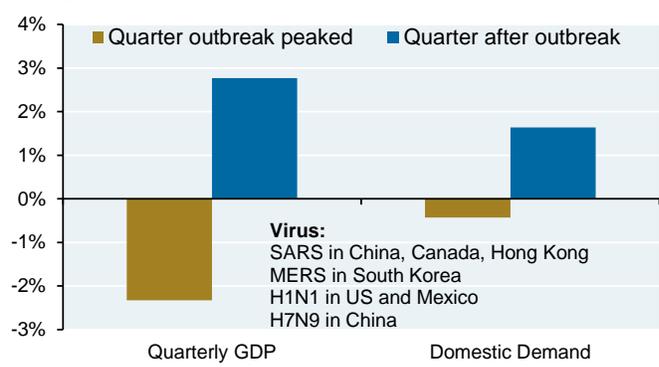
China's % of global levels



Source: BCA research, World Bank, JPMAM. 2019.

Growth usually rebounds one quarter after outbreaks

Q/Q growth rate annualized deviation from trend



Source: Goldman Sachs Research. January 2020.



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It feels like US equity markets are more concentrated in a few megacap stocks than ever. Is that true?

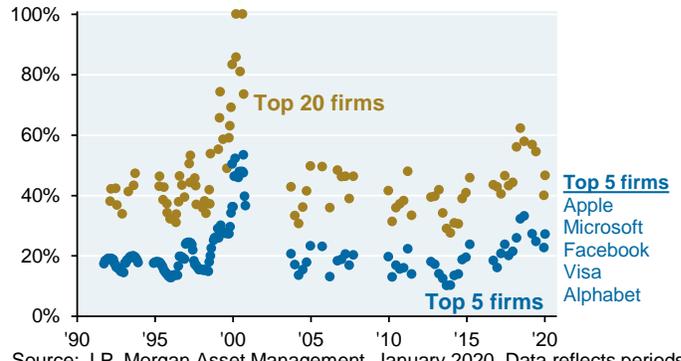
For the most part, yes. The first two charts show how a handful of firms now represent the largest share of market cap and contribution to return in many years.

Contribution of top firms to overall US market cap



Source: Bloomberg. Q4 2019.

Contribution of top firms to overall US market return
% of market return, rolling 12-months



Source: J.P. Morgan Asset Management. January 2020. Data reflects periods of >= 10% annual market return.

This level of concentration leads to questions about valuation. Investors are now paying a P/E premium of around 1.4x the market (excluding Amazon) for the higher sales growth and margins of the megacaps. This premium has risen from parity in 2010 and is now at its highest level since then. However, in the years leading up to the financial crisis this premium was also around 1.3x-1.4x, and it peaked at 1.8x-2.0x in the late 1990s (be careful with this latter point; no one should invest based solely on comparisons to the most mispriced period in market history). In other words, the opportunity to buy highly successful megacap companies at valuations similar to the market is now gone, but the premium has not yet reached absurd levels.

	Sales, margins and earnings growth					Valuations					
	5 year avg y/y sales growth	Operating margin	Free cash flow margin	Forward 12m EPS growth	Est LT earnings growth	Price/Earnings	Forward 12m P/E	LTM Enterprise value/Sales	PEG (Earnings)	PEG (Sales)	LTM Free cash flow yield
Alphabet	20%	21%	19%	12%	16%	30.5	22.4	6.8	1.4	0.3	3.1%
Apple	6%	25%	24%	16%	12%	25.2	23.1	4.9	1.9	0.5	4.5%
Facebook	42%	34%	30%	6%	22%	24.5	20.9	7.8	0.9	0.3	3.5%
Microsoft	8%	34%	30%	21%	12%	33.4	31.9	9.9	2.7	0.7	2.9%
Visa	13%	65%	53%	13%	16%	36.9	33.1	17.3	2.1	1.5	3.1%
Amazon	26%	5%	8%	22%	34%	89.1	51.2	3.7	1.5	0.2	2.1%
S&P 500	4%	13%	9%	10%		21.9	18.9	2.7			3.8%

Source: Bloomberg. Feb 6, 2019. PEG Earnings ratio: Forward 12M P/E divided by LT earnings growth. PEG Sales ratio: Forward 12M EV/Sales divided by Forward 12M Sales growth. LTM=last twelve months. All companies referenced are shown for illustrative purposes only, and are not intended as a recommendation or endorsement by J.P. Morgan in this context.

These megacap companies are reinvesting in themselves (capex + R&D) at twice the pace of the overall market, and three have attractive shareholder yields of 4%-8% based on dividends plus buybacks (Apple, Microsoft and Visa). After the recent megacap rally (up 25% since Labor Day), we are now monitoring four headwinds: antitrust and DOJ investigations; digital service taxes in France and other European countries; the high level of overlapping hedge fund ownership¹; and the exposure of the megacaps to changes in spending by young, unprofitable, fast-growing public and private companies (the "YUC"s), which we discussed in our 2020 Eye on the Market Outlook. It has been a great run (particularly since 2016) but we are probably at the edge of reasonableness for megacap valuations.

¹ The megacap stocks shown above usually appear on Top Ten lists of stocks most commonly held by hedge funds, and Top Ten lists of largest hedge fund positions.



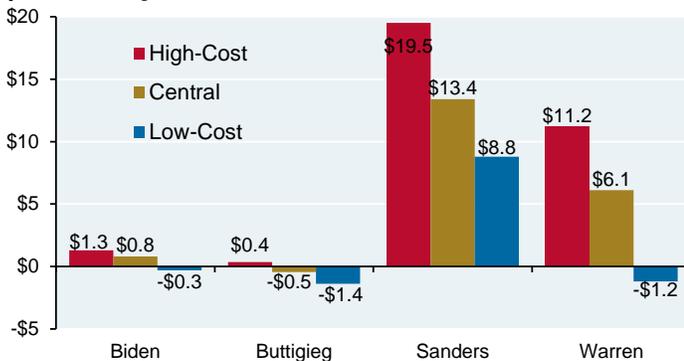
Any comments on the Iowa caucus?

Just on the process. Iowa Democrats replaced Microsoft’s app which worked just fine in 2016; the new app was rushed, and there was no time for Apple Store vetting; it had to be downloaded by bypassing smartphone security settings; only 25% of precinct chairs were able to download and install it successfully; the developer’s identity was kept secret, so there was no independent testing; and the developer was a political consultancy, not a tech company (source: NYT). This was a **deeply flawed effort** at developing an election app by a party that at times makes flawed assumptions about the tech sector as well.

Has anyone figured out how much the different Democratic Healthcare plans might cost?

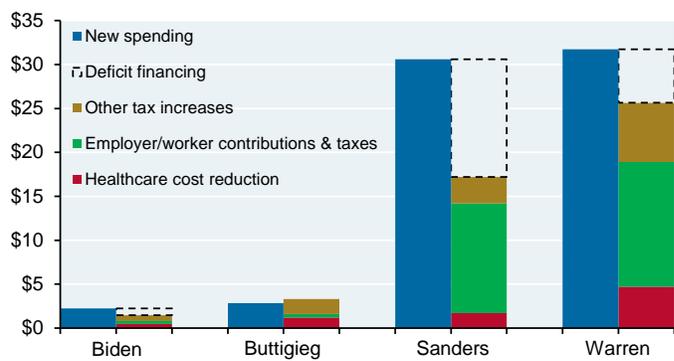
Yes. The Committee for a Responsible Federal Budget released cost estimates for Democratic Healthcare plans². Under all plans, **tens of millions** of uninsured Americans would obtain healthcare coverage. In the case of Sanders and Warren plans, this would be financed via both **trillions** in new budget deficits even after **trillions** in taxes and worker/employer contributions. Biden and Buttigieg plans achieve roughly half the decline in the uninsured population compared to Warren/Sanders at a fraction of the cost.

Estimated net fiscal impact of candidates' health care plans, Change in Federal Deficit, 2021-2030, US\$ trillions



Source: Committee for a Responsible Federal Budget. January 24, 2020.

How health care plans get financed, Central Scenario 2021-2030, US\$ trillions



Source: Committee for a Responsible Federal Budget. January 24, 2020.

- Over the next decade, 30-35 mm Americans will lack healthcare coverage. Sanders and Warren plans effectively reduce that figure to zero; Buttigieg reduces it to 5-10 mm, and Biden to ~15 mm
- The first chart shows net cost estimates measured as the expansion of the US Federal Budget Deficit from 2021-2030, and includes a central scenario as well as possible high cost and low cost outcomes
- These estimates are net of direct and indirect cost offsets (estimated prescription drug savings, caps on healthcare cost growth, increased taxes on personal/corporate income, employer/worker contributions, non-healthcare spending cuts and “revenue feedback” effects resulting from companies/individuals no longer being subject to employer-provided healthcare costs which results in increased taxable income)
- The second chart shows the decomposition of these plans into gross cost and offsets (taxes, healthcare cost reductions, worker/employer contributions and new budget deficits). For example, **Warren and Sanders plans are estimated to add \$6-\$13 trillion to the 10-year budget deficit even after the imposition of trillions in income, capital gains, payroll, wealth and estate taxes, and after trillions in worker/employer contributions and taxes** which replace existing employer-sponsored healthcare costs. The gross costs of Sanders and Warren plans are ~\$30 trillion over 10 years
- While some Medicare for All advocates believe that National Healthcare Spending would fall under such a plan, CRFB estimates that it would actually **rise** by 3% under Warren and by 6% under Sanders
- The Sanders campaign may claim that its plan will cost workers less than what they pay now; this is mostly a reflection of the fact that the Sanders plan relies on massive increases in expected budget deficits, which no one directly pays for (yet). The Sanders plan’s expected \$13 trillion addition to the

² For more information on CRFB’s analysis, click [here](#). Their analysis excludes potential negative economic feedback from Medicare for All plans such as reduced employment, lower per capita income and reduced capital formation.



deficit would *double* the current CBO 10-year deficit projection. Warren's plan entails higher taxes since it pays for more of its true cost (and yet still adds \$6 trillion to the 10-year deficit)

- Sanders and Warren would nearly eliminate any premiums and out of pocket healthcare spending. While both candidates have referenced Nordic healthcare systems in speeches, as we analyzed last June, most Nordic systems employ both deductibles and out of pocket costs in their healthcare systems

How quickly could a new Democratic administration and Senate majority reverse the corporate tax cuts?

Democrats could rely on reconciliation rules which only require a simple majority if they pass a bill that does not increase the deficit beyond the ten year budget window, and if they pass a budget first. Trump's administration was able to avoid changes to the ten year budget window by having some tax cut provisions sunset before the end of the 10-year budget window, and by having some revenue raisers such as taxation of offshore non-repatriated corporate profits that offset the cost of corporate tax cuts. Democrats would presumably do something similar: raise corporate and/or personal taxes, and increase spending by an equal amount so as to not change the expected budget deficit after the ten year window

How easy would it be for Democrats to raise payroll taxes and subject all earned and/or investment income to taxation above a certain annual threshold, such as \$250,000?

- If Congress removes the cap on income subject to Payroll taxes, payments INTO the Social Security system would be uncapped, and therefore payments OUT OF the system would be uncapped as well. In other words, wealthy people would pay in more, and also receive more in retirement. As a result, eliminating the cap on its own would do little to extend the life of the Social Security system.
- Congress therefore would probably only eliminate the Payroll tax cap as part of a broader fix to the Social Security system's solvency, perhaps by raising the retirement age and adding "bend points" (a mechanism under which wealthy people receive an even lower benefit per dollar contributed above a certain level). This would redirect benefits to other recipients and extend the life of the system
- As long as the Byrd Rule and Senate filibuster are maintained, changes to Social Security would have to go through normal Senate 60-vote procedures and could NOT be done via simple majority voting
- However, if Democrats get rid of the filibuster, practically anything could be passed by simple majority³, including Medicare for All. **Reid and other progressives now argue for scrapping the filibuster entirely** ("the nuclear option") to ensure passage of a progressive agenda
- Some believe that moderate Senate and House Democrats might be reluctant to support widespread and large tax increases. I'm not so sure. Unified government sometimes compels politicians to pass legislation if they believe it's their only window in a generation to get it done. During the 20th century, major legislation was usually passed with *some* level of support and consent from both parties in both chambers. But then the Affordable Care Act (2010) and the Tax Cut and Jobs Act (2017) were passed over 100% objection from the opposing party, and now stand [as the most partisan pieces of major legislation in 100 years](#). I would not be surprised to see this occur again

³ Exceptions include issues where the Constitution requires a higher threshold, such as treaty ratification. As a reminder, former Democratic Senate Majority Leader Reid scrapped the **filibuster** in 2013 to push through Executive Branch nominations and Federal Judicial appointments (excluding the Supreme Court). Republican Senate Majority Leader McConnell extended this approach in 2017 to include the Supreme Court to advance Gorsuch's nomination



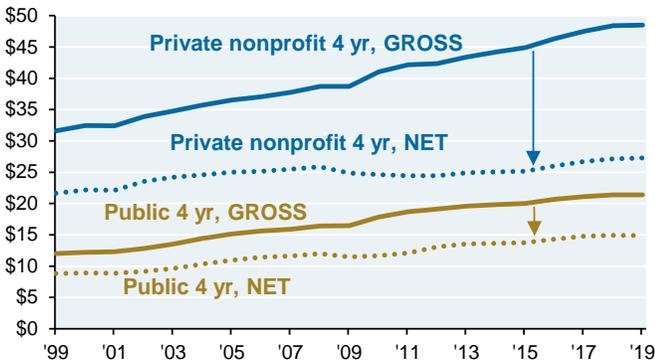
Have you ever written anything on Student Loans?

Yes. Last fall, Jamie asked me to pull together a deep dive report on student loans, including an assessment of what went wrong and what could be done next. The conclusions might surprise you. I have listed some of the major findings below; you can read the entire 20-page piece [here](#).

Main conclusions:

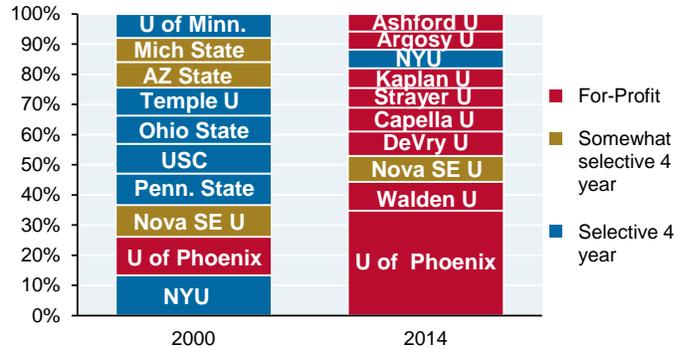
- According to a comprehensive and groundbreaking Brookings Institute review of the topic⁴, the *primary* problem is not one of high and rising costs. Fees + room & board have been growing in real terms at 2%-3% per year at public and private non-profit colleges since 1999. However, once institutional aid and Federal grants are taken into account, net college costs are 30%-45% lower than gross costs
- The larger problem is more a function of *where* students are studying, the policy changes which have allowed this shift to take place, and the labor market outcomes. The second chart shows the ten institutions at which students hold the most amount of debt. In the year 2000, the top ten list was mostly made up of selective 4-year colleges, plus a few “somewhat” selective colleges. **By 2014, almost the entire top ten list was made up of for-profit institutions instead.**
- The third chart shows how the average graduating student from a for-profit college incurred a lot more debt to obtain their degree than graduates of public or private non-profit colleges. In a similar vein, the fourth chart shows the much higher reliance by for-profit schools on Federal student loans

Tuition plus room and board 30-45% below gross costs after institutional aid and grants; Real 2018 \$, thousands



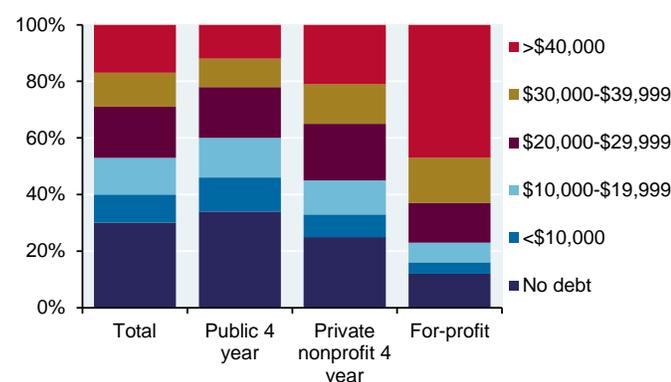
Source: College Board, Annual Survey of Colleges, NCES, IPEDS. 2019.

Top 10 institutions at which students hold the most debt
Debt contribution to total top 10 institutions' debt



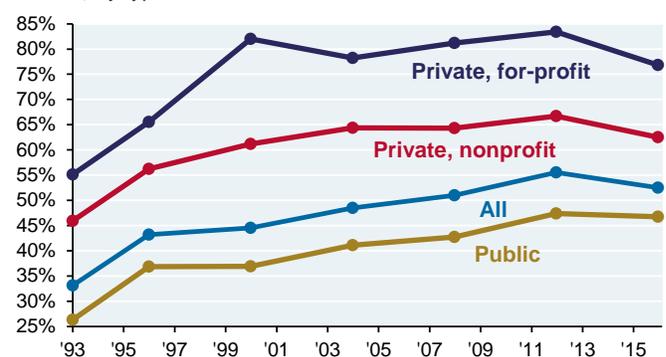
Source: A. Looney, "A crisis in student loans", Brookings Institution, U.S. News. 2014. Acceptance rate somewhat selective 75-85%, selective < 75%

Cumulative debt of bachelor's degree recipients, 2011-12



Source: A. Looney, Brookings Institution. 2012.

Percentage of undergraduates receiving Federal student loans, by type of institution



Source: National Center for Education Statistics. 2018.

⁴ "A crisis in student loans", Adam Looney (US Dep't of the Treasury) and Constantine Yannelis (NYU Stern School of Business), Brookings Papers on Economic Activity, Fall 2015.

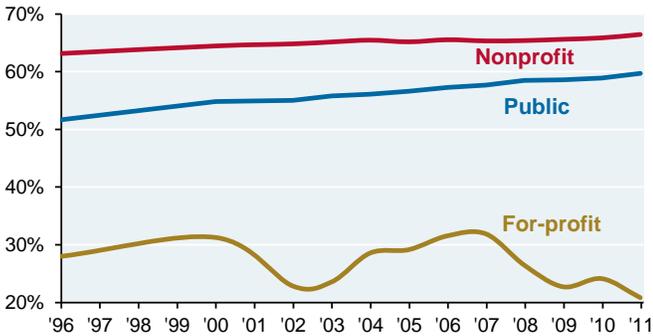


What's the problem with for-profit colleges? Let me count the ways...

For-profit colleges have much lower graduation rates, their students face much higher rates of unemployment and lower median earnings, and consequently, they default on student loans at **much** higher rates. None of this is a secret to people who know the system; as shown in the second chart, there was also a spike in for-profit loans and the end of the 1980's and the default outcomes were similar.

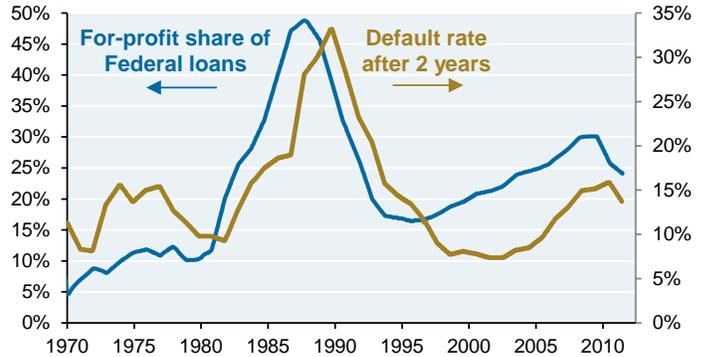
Graduation rates for initial 4 year institution attended

% of bachelor's degree seeking students graduating within 6 years



Source: National Center for Education Statistics. 2019. Years reflect the year students began at the 4 year institution.

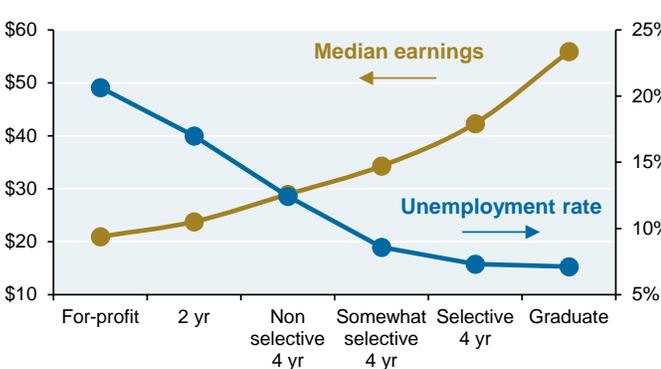
For-profit share of Federal loans drives student default rates



Source: BEA, A. Looney, Brookings Institution. 2012.

Median earnings vs unemployment rate of graduates

Real 2014 \$, thousands

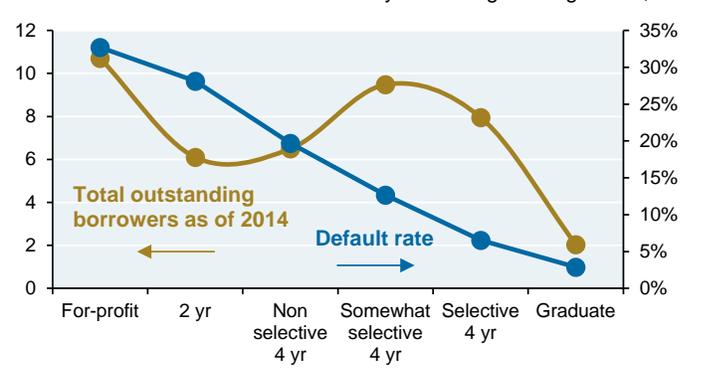


Source: A. Looney, "A crisis in student loans", Brookings Institution. 2014. Earnings and unemployment rate are of Federal borrowers in their second year of repayment.

Total number of borrowers vs default rates of graduates

Millions

5 year average through 2011, %



Source: A. Looney, "A crisis in student loans", Brookings Institution. 2014. Default rate = 3 year cohort default rate.

What could be done to improve the student loan system?

- preserve the large part of the current student loan system that works for borrowers
- design a system in which student loan repayments are linked by default to post-graduation income (rather than 10 year fully amortizing loans), and are automatically withheld from each paycheck
- reintroduce risk-based underwriting based on the risk of the institution (not the borrower) or possibly based on fields of study (this would require new safe harbor provisions for lenders)
- use grants and taxpayer subsidies to finance education for underserved populations who need help

These approaches would entail much lower costs than proposals to write off all student loans, which could cost \$955 billion, and that *excludes* the cost of eliminating tuition entirely at public universities. Given competing priorities in infrastructure, healthcare and renewable energy investment, it makes sense to preserve government resources wherever possible, particularly given projections that by the year 2027, 100% of Federal tax revenues will be consumed by entitlements, mandatory payments and interest.

Next up, in March: the 2020 Eye on the Market Energy Paper



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