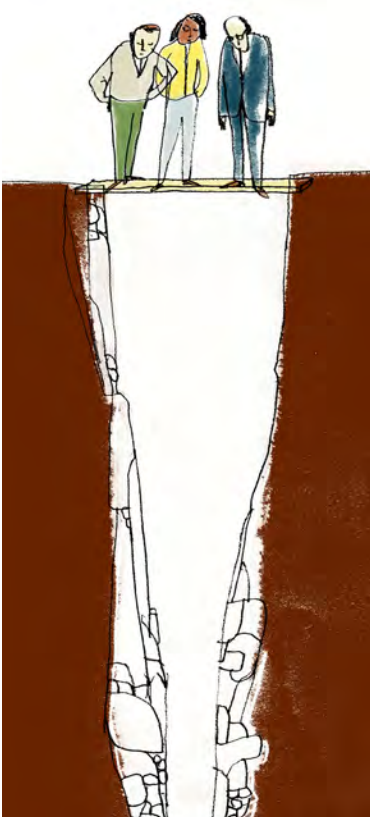
CONTENTS



page 56

FROM THE CEO

Can you guess what factor is draining resources from the U.S. economy at an annual rate that's double what we spend on defense? Research from the Institute published late last year identifies the culprit as our collective – and excessive – poundage. "Weighing Down America: the Health and Economic Impact of Obesity" estimates that the cost of treating obesity-related health conditions that range from diabetes to Alzheimer's, plus the loss in attendance and productivity at work, exceeds $1.4 trillion annually.

Yes, that's trillion with a "*t*." And remember, that huge number does not include the intangible, but no doubt immense, cost of obesity-related suffering and premature death.

Rather than simply outlining the dimensions of the problem, our study also points to solutions. And we brought further attention to the report's findings by launching it with a special briefing at the U.S. Senate by the report's authors, along with Louisiana senator (and physician) Bill Cassidy and Institute chairman Mike Milken, that focused on both the problem and the potential solutions.

The study is the latest example of the Institute's widening engagement in public health issues. Ten years ago, we published "An Unhealthy America," which calculated the total economic burden of chronic disease. Since then, Institute reports have provided the first-ever analysis of how lowering the consumption of sugary drinks would improve public health, a global look at how the transition to an information-based economy contributes to higher obesity rates, and an overview of studies on obesity prevention and intervention.

Our latest report on the health and economic impact of obesity was published by the Lynda and Stewart Resnick Center for Public Health. Thanks to the Resnicks' important and generous gift to support this and related work, the Center is now fully operational and will be the locus of the Institute's ongoing work in the field. Last year we convened the first-ever Public Health Summit, in Washington, DC. Participants from academia, government, industry and philanthropy told us that the event answered such a huge need that we decided to convene another in 2017 – and, quite possibly, every year thereafter.

Over the past two centuries, advances in public health and medical research have accounted for as much as half of all growth in the West when the economic value of good health and longevity are properly accounted for. For the rest of this century, we hope to do for public health what previous efforts have done for bioscience and medical research.

Michael Klowden, CEO

JG, our loyal correspondent from Passadumkeag, Maine, asks whether it's true that the *Review*'s new website (MilkenReview.org) contains clues to the location of the vast treasure mentioned in the Dead Sea Scrolls.

Not to my knowledge, JG – but you never know for sure. I still get my news from the mainstream media. But the website certainly does contain wealth more valuable than gold. Well … before the latest gold price escalation, anyway. You'll find all the content from the quarterly print magazine, plus a passel of articles and features posted in between. Meanwhile, have a look at the gems we've gathered for you in this earthbound edition.

Brad DeLong, an economist at the University of California (Berkeley) offers a spirited defense of helicopter money, the as-yet-unused macroeconomic tool that's widely viewed as too good to be true. Here, he explains "why it is so appealing to those of us who worry that stimulus will be insufficient to keep the economy chugging forward – and why proponents and critics seem inclined to talk past each other."

Jerry Taylor, the president of the Niskanen Center in Washington, explains why the time for a carbon tax to slow climate change has come – and why even Republicans enraptured

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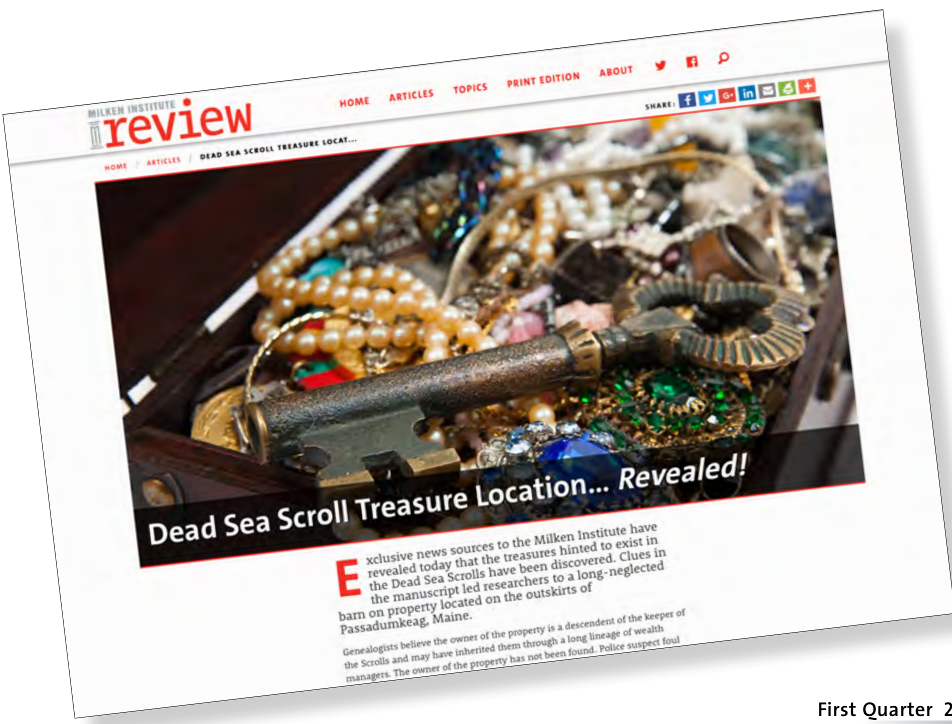

by the siren song of the fossil fuel lobbies should rethink their position. "We know that hedging against very-high-damage scenarios is economically rational even if the probability of catastrophe is modest," he writes. "And we can be pretty sure that a carbon tax would deliver more abatement for the buck than the alternatives."

Eswar Prasad, an economist at Cornell and the Brookings Institution, offers a nuts-and-bolts primer on how China is using trade and investment to project power worldwide. "China is becoming a leader of the international community – not, as the West prefers, by being co-opted into existing institutions under the current rules of the game, but rather on its own terms," Prasad writes. "This goal subsumes another objective, which is to eventually alter the rules of global finance that China sees as conveying undue privilege to the existing reserve currencies."

Maureen Japha, director of regulatory policy at FasterCures, outlines ways to smooth the speed bumps as "venture philanthropies" make deals with medical research institutions unused to sharing control. "The new emphasis on sustainability, on both sides, is forcing all parties to reconsider how success will translate into income," she writes. "What's important to keep in mind, though, is that everyone involved agrees that the first priority is getting effective and efficient treatments to patients."

Eric Toder, co-director of the Urban-Brookings Tax Policy Center, leads readers down the tortuous path of business tax reform, made even more torturous by the rapid growth of enterprises that pass through their taxable income to individuals. "The U.S. system for taxing business income has entered a zone of baroque complexity that defies efforts to sync it with both the way businesses are organized in the United States and the growing integration of the global economy," he explains. "Something big has to give if we are to tap business income as an equitable and efficient source of taxes."

Andreas Bergh, an economist at Lund University in Sweden, cautions policy wonks eager to imitate Sweden's social and economic policies. "Surprising as it may seem to those who see Sweden as the triumph of the modern welfare state," he writes, "Sweden's success has largely been the result of trial and error, not to mention the beneficiary of the unintended consequences of public policy."

Tom Healey, the coordinator of New Jersey's bipartisan Pension and Health Benefit Study Commission, offers an insider's view of the battle to contain the ballooning employee benefits of states and localities. "Unfunded liabilities are a disaster in the making that lurk behind a gray wall of numbers, graphs and pie charts," he writes. "As Flint and Detroit found out, expecting the problem to recede with an uptick in the stock market or the wave of a consultant's wand is simply delusional."

Philip Martin, an economist at the University of California (Davis) explains how the scarcity of water and cheap labor are transforming California agriculture. "The state's giant farm sector offers a fascinating picture of markets and regulation at work," Martin writes. "What is emerging is a leaner, less tradition-bound industry. … And that is good news for the millions of rural residents desperate to avoid the sort of rapid dislocation that devastated Rust Belt manufacturing in the 1980s and 1990s."

And yes, there's even more! Check out the excerpt from *Taxing the Rich*, a new book by **Kenneth Scheve** (Stanford) and **David Stasavage** (NYU). And take a gander at Brookings demographer **Bill Frey**'s latest charticle.

Happy perusing. — *Peter Passell*

BY JERRY TAYLOR

While opposition to government initiatives to slow climate change has long been orthodoxy for the Republican Party – and Donald Trump – that position is becoming increasingly untenable. The case for climate action is now so strong that one would be hard-pressed to find a serious academic economist who opposes using market forces to manage the damage done by greenhouse gas emissions.

Meanwhile, the low-cost opportunities for substituting renewables for fossil fuels have undermined the argument that the transition away from coal, oil and gas would make it difficult to maintain healthy growth. And by no coincidence, the political price of climate denial has recently gone from inconsequential to significant. Indeed, I would argue that, while the initial inclination for the Trump administration will be to roll back the clock, the stage is set for Republicans to embrace carbon pricing down the road.

MARK ANDERSON

WHEN IN DOUBT...

The debate among genuine experts in climate science is now limited to the timing of the warming and the magnitude of the impact. Climate policymaking has thus morphed into a high-stakes risk-management exercise in crafting the optimal response when the consequences of warming might be modest or might be catastrophic.

In this exercise, there is nothing "conservative" about ignoring risks at the catastrophic end of the distribution of possible outcomes, just as there is nothing conservative about putting all one's money into a single stock in an era of economic volatility. Quite the contrary: when low-probability, high-impact threats arise in non-environmental policy

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contexts, conservatives are inclined to become extremely averse to bearing risk. In the days after 9/11, for instance, Vice President Dick Cheney famously said, "If there is a one percent chance that Pakistani scientists are helping Al Qaeda build or develop a nuclear weapon, we have to treat it as a certainty in terms of our response."

If conservatives believe that "the precautionary principle" is worth embracing in non-environmental contexts, why don't they believe that it is worth embracing in the environmental arena? The warming scenarios at one extreme of the distribution of possible outcomes, after all, might well render the planet uninhabitable.

THE COST AND BENEFITS OF CLIMATE ACTION

Conservatives have typically come at the problem from another perspective. They've rejected the precautionary approach to climate change primarily because they believe that the potential damage is uncertain while the cost of precautionary action is both certain and very high. That argument, however, no longer stands up to close examination. Although the costs associated with curbing greenhouse gas emissions are not trivial – more on that later – the irresolvable uncertainties about both the future costs and future benefits of climate action render dispositive cost-benefit analyses impossible.

While there are plenty of studies estimating the impact of climate change on the global economy, only a few have zeroed in on forecasts for the United States economy. The most thorough of these comes from the Rhodium Group (a private consulting firm), which concluded that U.S. losses would most likely total between 1 and 3 percent of GDP annually by the end of the century. This is a conservative estimate, because it does not consider the impact of climate change on a host of significant factors – everything from agricultural productivity to the control of disease vectors as rising temperature and altered rainfall patterns open pathways for a greater variety of insects. Nor does it take account of a raft of low-probability, high-impact scenarios in which temperature-related tipping points could be crossed.

On the cost side of the equation, the most comprehensive contemporary analysis of jettisoning most uses of fossil fuels (known in the lingo as "deep decarbonization") comes from a joint undertaking by Energy & Environmental Economics (E3), Lawrence Berkeley National Laboratory and the Pacific Northwest National Laboratory. Their modeling found that an 80 percent reduction from 1990 levels of U.S. greenhouse gas emissions by 2050 (the target consistent with a global commitment to hold warming to 2 degrees Celsius above preindustrial levels) would probably cost about 0.8 percent of GDP annually, with a 50 percent probability range of costs from a *gain* of 0.2 percent of GDP to a loss of 1.8 percent of GDP.

While 0.8 percent of GDP is not small change (around $135 billion), it's probably less than the cost of inaction. But remember, these comparisons of high-probability costs and benefits largely miss the point. Provided similar efforts to slow climate change are made worldwide, deep decarbonization would serve as a hedge against the truly catastrophic risks – the ones associated with, say, the sudden collapse of the Antarctic ice sheet, which might raise sea levels by three feet, or the rapid release of massive quantities of greenhouse gases from melting permafrost.

Conservatives are often aghast at the prospect of spending billions or even trillions to prevent possible horrors that might turn out

MARK ANDERSON

to be merely manageable dislocations. But they have embraced tremendously costly risk-hedging initiatives in the past. The Bush-Cheney administration spent $4 to 6 trillion on wars in Iraq and Afghanistan to address the risks of Islamic terrorism – surely a lesser threat than the serious drought, more violent weather and widespread coastal flooding that may follow global warming.

According to the study by E3 and the two national labs, annual decarbonization costs would run about $100 billion per year, rising to about $400 billion per year by 2050. That estimate, by the way, is also in the central range of an independent analysis from Geoffrey Heal, an economist at the Columbia Business School.

The impact on consumer energy costs would likely be modest. Average electricity rates in the E3/national labs analysis would increase from 17 cents per kilowatt-hour (the reference case, which represents business-as-usual) to about 18 cents per kilowatt-hour. Average household spending on energy would rise only about $35 per month. Though spending on energy would be higher in absolute terms, energy costs would constitute 6.4 percent of U.S. GDP, compared to 7.1 percent in 2015.

These are still big numbers, which could be seen as ammunition for climate skeptics who would rather wait and see. But as we've noted above, even a low probability of a catastrophic outcome makes the case for action stronger, not weaker. In a recent survey of economists who publish in leading peer-reviewed journals that cover the economics of climate change, 93 percent agreed that, despite these uncertainties, an aggressive policy response to global warming is warranted.

SKEPTICISM ABOUT LOW-CARBON ENERGY

Many conservatives find the E3/national labs study and others of the same ilk to be implausible on their face because low-carbon energy will be far too expensive relative to coal, oil, and natural gas. Moreover, renewable energy, they often note, is too unreliable for a modern economy that must keep the gears moving when the wind isn't blowing and the sun isn't shining. Finally, the scale and scope of the transition, they say, is unrealistic in the relatively short period contemplated in the E3/national labs scenario.

While those criticisms were probably on the mark before the turn of the millennium, advances in low-carbon energy technology have radically transformed the energy sector. Just since 2008, the total cost of land-based wind energy in the United States (absent federal production-tax credits) has fallen by 41 percent, distributed solar power generation (such as rooftop panels) by 54 percent and utility-scale solar generation by 64 percent. Meanwhile, production costs for electric-car batteries have dropped by 73 percent.

Markets understand this, even if conservatives don't. Solar and wind energy constituted 66 percent of all new electricity generation capacity installed last year in the United States. Today, as many jobs are tied to wind energy as coal mining, while solar construction and maintenance employs three times the number in the coal business.

MARK ANDERSON

In 2022 (with no federal production-tax credits), the U.S. Energy Information Administration estimates that advanced combined cycle gas-fired turbines (the cheapest source of new fossil fuel electricity) will produce power at $55.80 per megawatt-hour, onshore wind-power facilities at $58.50 per megawatt-hour and utility-scale solar at $74.20 per megawatt-hour. By 2040, the Energy Information Administration projects that wind will be cheaper than gas turbine power and that utility-scale solar won't be far behind.

Fossil fuels may also be displaced in transportation. Bloomberg New Energy Finance estimates that by 2022, declines in the production cost of lithium-ion batteries will make the total cost of owning an electric vehicle lower than the cost of owning an equivalent vehicle powered by gasoline or diesel. Of course, the electricity must come from somewhere. But there is no reason that "somewhere" can't be renewables.

So much for low-carbon energy being too expensive. But is it reliable, and can it be delivered over long distances? Recent academic analyses suggest that the answer is yes – but with some caveats. Unless utility-scale storage technology becomes cost-effective, we would need to shift from regionally divided electricity networks to an integrated national system built upon high-voltage, direct-current transmission – an expensive, though doable, option. But many energy forecasters remain optimistic that cost-effective storage technology is on the horizon.

An obvious means of addressing the intermittency issues surrounding wind and solar – though, to be sure one that faces considerable political opposition – is investment in nuclear power. Although the Energy Information Administration forecasts that nuclear energy will be far more expensive than wind and solar power in the future (with a levelized costs of $93 per megawatt in 2040), the E3/national labs study finds that including nuclear energy in the portfolio of low-carbon sources would actually reduce net costs. That's because the higher generating costs of nuclear would be more than offset by savings on infrastructure otherwise needed to reduce the uncertainty about hour-to-hour availability of solar and wind.

IF NOT A CARBON TAX, WHAT?

Once one accepts that hedging against climate risk makes overwhelming sense, putting a price on carbon (and related greenhouse gases) through market mechanisms seems a no-brainer. Among other virtues, carbon pricing is attractive to the corporate community, because it leaves the decision about when, where and how to reduce emissions to market actors rather than to regulators. And it should be attractive to consumers because market-based pollution abatement has a long track record of cost-efficacy.

The four alternatives to carbon pricing (beyond direct regulation) are subsidizing the production or consumption of low-carbon energy, or both; mandating low-carbon energy production; subsidizing or mandating energy efficiency investments, or doing both; and subsidizing energy R&D. While they may have a place in a climate-management portfolio, none of those approaches should tempt us to turn away from carbon pricing.

Subsidizing low-carbon energy production is not cost-effective compared to carbon pricing. A 2012 study by the Pew Charitable Trusts calculates that federal spending and tax programs designed to reduce greenhouse gas emissions only reduced total U.S. emissions by 1.4 percent in 2009. A 2013 study from the National Research Council found that, extended forward, existing federal production- and investment-tax credits for renewable energy would reduce greenhouse gas emissions from the power sector by only 0.3 percent over the next two decades – and at a cost of $250 per ton.

That seems counterintuitive because production and investment tax credits do significantly increase renewable energy generation at the expense of coal and natural gas. However, they also lower the competitive market price of power and thereby serve to boost electricity use. This reduces investments in energy efficiency and sacrifices emissions reduction that might otherwise have been achieved at competitive cost.

Subsidizing low-carbon energy consumption (for instance, by subsidizing hybrid and all-electric vehicles) runs into most of the problems associated with subsidizing low-carbon energy production. On top of that, the benefits heavily favor the affluent. Economists Severin Borenstein and Lucas Davis at the University of California (Berkeley) found that fully 90 percent of the credits claimed for electric vehicles went to the top income quintile.

Running through the list, state regulations dictating the percentage of electricity that must be generated from renewable energy – a.k.a. mandates – are inefficient; so are mandated energy-efficiency requirements.

Some observers, echoing Microsoft's founder, Bill Gates, take an entirely different tack. They argue that existing low-carbon energy technologies are simply too expensive to displace fossil fuels, whether encouraged by mandates, subsidies or taxes. Accordingly, they embrace large new R&D programs designed to produce the necessary energy miracles required for deep decarbonization without tears.

But the historical evidence doesn't square with this implied pessimism about market-based incentives as the mother of invention. Past increases in energy prices have induced significant innovation, and there's every reason to believe that a carbon tax would do the same now. There is a consensus in the economics literature, moreover, that public R&D produces less innovation on its own than would an efficient carbon pricing program. That's because carbon pricing would immediately change price signals. An R&D-only policy would produce no changes in market behavior until breakthroughs were achieved – if they were achieved.

Past increases in energy prices have induced significant innovation, and there's every reason to believe that a carbon tax would do the same now.

Even then, technology breakthroughs are not self-executing. Price signals – in this case, delivered by carbon taxes – are needed to spur rapid deployment. As the economist Richard Newell of Duke University notes, "R&D without market demand for the results is like pushing on a rope, and would ultimately have little impact."

REMEMBER CAP-AND-TRADE?

Carbon pricing does not necessarily need to be based on taxes. Prices reflecting the private and public costs of fossil fuel generation could also be produced with cap-and-trade programs. This would entail putting a cap on the total permissible volume of greenhouse gas emissions. The government would then sell or give away (or both) a corresponding volume of tonnage permits that emitters would need to legally add carbon to the atmosphere. Initial government auctions for the permits or secondary markets for them would establish the economy-wide carbon price that would act like a carbon tax.

Cap-and-trade and carbon taxes both aim to use prices to internalize the external costs of emissions. There is, however, one big difference. A carbon tax establishes certainty with regards to price, but leaves emissions volume up to the market; cap-and-trade creates certainty with regards to emission volumes, but leaves price to the market.

Many environmentalists prefer the volume certainty afforded by cap-and-trade. For their part, energy producers and fuel consumers prefer the price certainty afforded by carbon taxes. Either, though, can be modified to create the certainties offered by the other. Carbon taxes can have escalation or de-escalation clauses that kick in if specific emission targets are not met or, alternatively, exceeded. Cap-and-trade programs can generate volume certainty by having the government add or subtract permits if the market price for the permits exceeds or falls below a predetermined range.

One advantage of cap-and-trade is familiarity. Approximately 25 percent of Americans already live in jurisdictions in which carbon emissions are priced via cap-and-trade programs. The case for a carbon tax rather than cap-and-trade, however, is fairly strong.

First, the administrative burdens associated with monitoring and taxing greenhouse gas emissions are quite modest – contact with the government would be limited to a few hundred large "upstream" fuel sellers and industrial emitters. By contrast, the administrative burdens associated with creating and policing the market for emissions permits, which would constitute the largest commodity market in the world, would be no walk in the park.

A carbon tax, moreover, would almost certainly spur more innovation than cap-and-trade. That's because the future schedule of carbon taxes would be fixed by law. Successful technological innovations in a cap-and-trade world, however, would reduce demand for emissions credits and would consequently lower carbon prices. This in turn would reduce incentives to invest in more innovation.

The political case for a carbon tax over cap-and-trade is likewise strong. First, cap-and-trade programs in the real world tend to be weak tea, while ambitious policy goals seem to go hand-in-hand with carbon taxation.

I think I know why. Some 70 percent of the global revenues generated from government auctions of cap-and-trade permits have been dedicated to subsidies for low-carbon energy, while roughly the same percentage of revenues from carbon taxes have been rebated to the public or effectively substituted for other taxes in paying for regular government expenses.

Any form of carbon pricing, after all, represents pain to energy consumers. If that pain is not offset with some visible payoff to the public, tolerance for carbon pricing will likely remain low. While it is unclear why revenues tend to be distributed differently under these two policy plans, I suspect that cap-and-trade initiatives are more prone to corporate rent-seeking and favoritism. That drives revenues toward well-organized interest groups and away from the general public.

Second, no form of carbon pricing could be imposed without significant support from Congressional Republicans. And (in spite of an initial endorsement by the then-Speaker of the House, Newt Gingrich), cap-and-trade is seen as a "liberal" policy vehicle because it has been embraced by the European Union along with a host of blue states, from California to Massachusetts. Carbon taxes, on the other hand, are championed (or at least preferred) by most multinational oil and gas companies and have been loudly promoted by free-market economists in other contexts as the policy approach of choice to internalize the costs of pollution.

WHAT A CARBON TAX MIGHT LOOK LIKE

A tax rate capable of producing the deep decarbonization needed to limit warming to 2 degrees Celsius would be steep. According to simulations by the Stanford Energy Modeling Forum, we would likely need a $65 per ton tax in 2020, rising to $296 per ton in 2045.

Consider, for starters, the impact of a $45 per ton carbon tax that increased at a rate of 2 percent a year above inflation. The simulations suggest that this tax would yield a 40 percent reduction below 2005 levels in U.S. greenhouse gas emissions by 2030. That's a far greater reduction than would likely be secured by the Clean Power Plan. Even so, the tax would reduce disposable household income by less than one percent if the revenues were rebated in some form unrelated to the beneficiaries' energy use.

The total cost to the economy – that is, the reduction in goods and services otherwise available – would be less than 0.2 percent of GDP, and that's before we even consider the benefits from reducing the side effect of paring public exposure to the conventional pollution produced by fossil fuels. Netting out those health benefits would likely mean that the tax would be costless in economic terms – and that's before considering the bulk of the benefits, which would come from hedging against major climate risk. Net employment impacts (though not necessarily regional and sectoral impacts) would be negligible.

The most contentious issue (after the threshold issue of getting Republicans to agree to a new tax) would be the allocation of the revenue. If the revenues were used primarily to cut capital gains and dividend tax rates, income earners in the bottom four-fifths would probably experience modest losses in household purchasing power while the top fifth would experience a slight increase in net income. However, if revenues were rebated evenly across the income spectrum, the net impact would be progressive. That is, lower-income households would receive more in rebates than they paid in higher energy prices because they buy less energy.

The most likely scenario, however, is that carbon tax revenues would be distributed by political rather than economic criteria, with an eye toward recruiting legislative support for the tax. And given the revenues at issue – more than $2 trillion over 10 years from our hypothetical $45 per ton carbon tax – there would be plenty to go around. Politically expedient uses would include compensating the coal sector and coal regions for the dislocation associated with rapid switching to other fuels; help for coastal areas in adapting to rising sea levels; and subsidies for energy R&D, renewable fuels and conservation.

THE POLITICAL CASE FOR A REPUBLICAN PIVOT

Given that the Republican wall against government action on climate change has been rock solid, on first glace the carbon tax looks like a nonstarter. But political tectonic plates are shifting beneath that wall, rendering it unstable.

The shift is primarily a consequence of three recent developments.

First, the federal regulatory train has, after nearly three decades, finally left the political station. That train was put into motion by the 2007 Supreme Court decision in *Massachusetts vs. EPA*, which compelled the EPA to regulate greenhouse gas emissions under the aegis of the Clean Air Act as long as those gases are found to endanger human health or

MARK ANDERSON

the environment. Reversing that agency determination would be nearly impossible unless a Supreme Court that's been beefed up with conservative appointees chose to reverse itself. Rewriting the clean air act to render *Massachusetts v. EPA* moot would be extremely difficult politically, as would passing legislation that required Congressional approval for future regulations. Consequently, even climate skeptics are becoming interested in policy interventions that offer a market-oriented alternative to direct regulation.

Second, while denial continues to play well with the GOP base, and climate change hardly came up during the campaign, surveys tell a different story about the country as a whole. Only one in 10 Americans say that climate change is not happening and only 18 percent of Republicans agree that climate change should be ignored by government. Although the issue was long a low priority for most voters, most recent surveys suggest it was more important than race relations, gay marriage, taxes or abortion. Moreover, millennials consider climate change a core issue and support more-aggressive policy action than any other age group does. Thus, while climate denialism has had little impact on the GOP thus far, that is unlikely to continue indefinitely.

Third, the declining cost and growing market penetration of low-carbon energy, coupled with increasing belief in Silicon Valley and on Wall Street that green energy is the wave of the future, is rapidly reversing the public's concern that a renewable-energy economy is an expensive, unrealizable pipe dream. This opens political space for a potentially powerful morally charged campaign against fossil fuels that could prove devastating to the GOP.

Current activism against fossil fuels, ranging from opposition to the Keystone Pipeline to state investigations of whether oil companies have been covering up their knowledge about climate risk, has come from the left. But as middle-income Americans who voted for Trump realize they won't be inconvenienced much by driving Chevy Volts instead of Chevy Cruzes, the door will open to moral arguments against carbon emissions, much the way the sharp decline in tobacco addiction in the late 1980s opened the door to morally driven arguments against smoking.

A Republican pivot away from climate change denial, however, would not necessarily mean a Republican pivot toward carbon taxation. Arguably, it would be politically easier for the party to embrace suboptimal climate strategies (such as subsidies for favored low-carbon energy sources and R&D) that impose fewer visible costs on consumers.

It's worth remembering, of course, that this conversion might well be opposed by many Republican donors from the fossil fuel industry because the potential costs of deep decarbonization would be huge for them. If we wish to keep warming from exceeding 2 degrees Celsius, then one-third of total global oil reserves, half of global natural gas reserves, and over four-fifths of global coal reserves must remain in the ground. The value of the assets that policymakers would be taking away from the fossil fuels industry could run in the trillions.

Nonetheless, the political case for Republicans to embrace carbon taxation is fairly robust. It would give them a way to climb down from denial without acceding to the Democrats' vision of more government regulation.

A selective embrace of more familiar low-carbon energy sources (like natural gas, nuclear power and hydropower) might be a more comfortable shift for the Republican base. But to go this way, Republicans would be swimming upstream: most Americans want to embrace the new technologies, not delay them. Only 9 percent of Americans oppose more solar energy, and only 15 percent oppose more wind energy.

Moreover, a carbon tax initiative need not be a declaration of war against the fossil fuels industry. Carbon taxation is actually supported in principle by most major oil and gas companies – at least as an alternative to more intrusive direct regulation that targets Big Oil. This alliance would help insulate Republican leaders from charges from the conservative base that it is selling out free enterprise.

IT COULD HAPPEN HERE

No one knows what the optimal policy toward greenhouse gas abatement should be because there's still a great deal of uncertainty about the timing and impact of global warming. And what goes for the world as a whole goes double for a single country that faces the added imponderable of how other countries will act.

But we do know for certain that the plausible risks associated with climate change are real and alarming. Moreover, we know that hedging against very-high-damage scenarios is economically rational even if the probability of catastrophe is modest. And we can be pretty sure that a carbon tax would deliver more abatement for the buck than the alternatives.

Harnessing price signals to solve economic and environmental problems is a signature tenet of modern conservativism. It's time – well, way past time – for the GOP to get on board.

BY WILLIAM H. FREY

The fascination with millennials appears to be never-ending, as evidenced by the media's focus on their politics, lifestyles and taste in pop culture. But it is fair to say that the most important societal attribute of this giant generation is its far greater racial and ethnic diversity. Indeed, the millennials constitute a demographic bridge between the white-dominated America of yore and its multiracial future.

ISTOCK

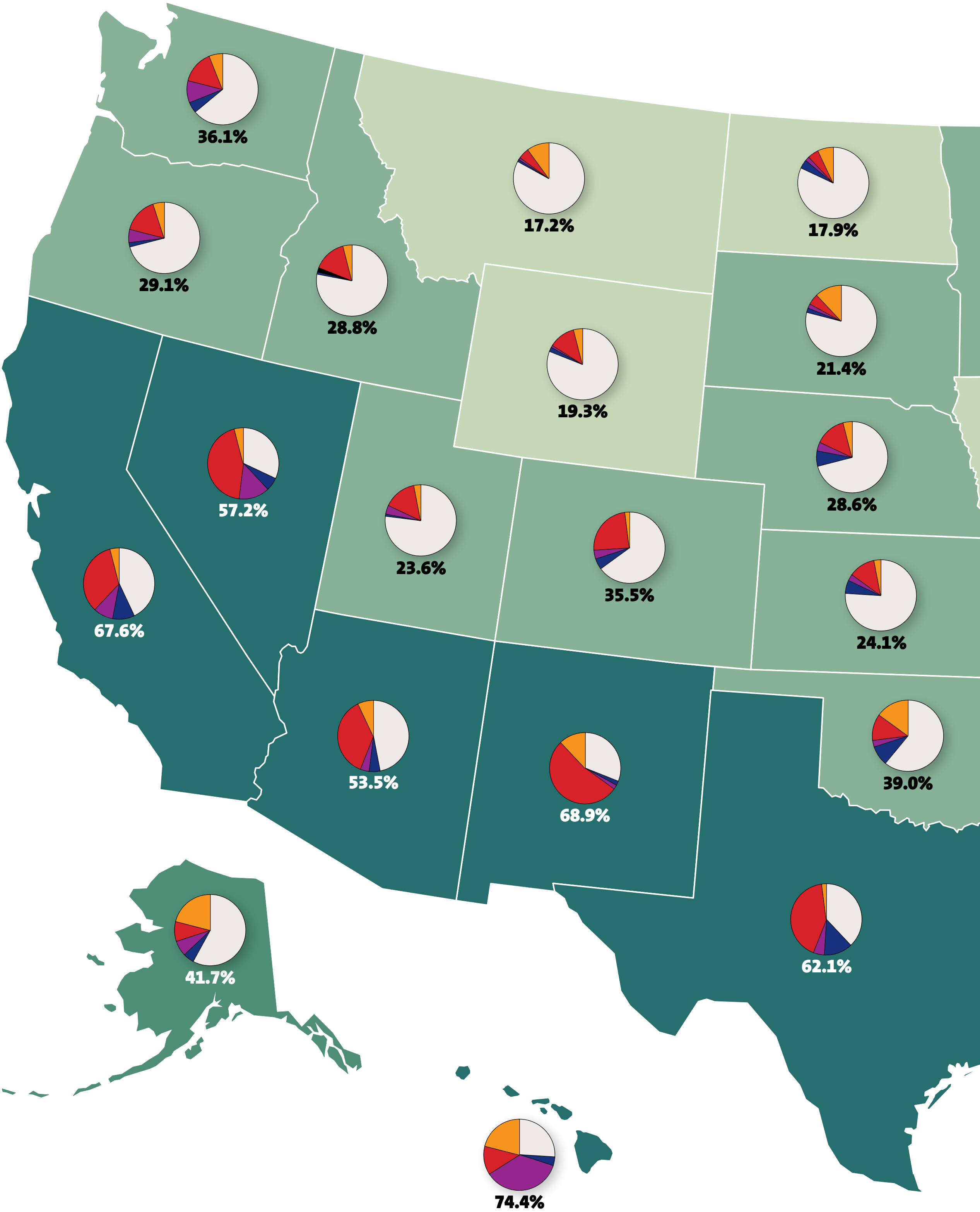
New Census information spells this out in just a handful of stats. In 1990, nearly three-quarters of young adults defined themselves as white. Today, just 56 percent are white, and in contrast to the pre-millennials, "new minorities," including Hispanics, Asians and persons of two or more races, make up the lion's share of non-whites.

In fact, whites already constitute less than half of millennials in 10 states and Washington, DC. In California, more than two-thirds of millennials are non-white. Texas, Florida, Georgia and New Jersey aren't far behind.

The aforementioned bridging function of millennials is apparent when looking at the post-millennial population (now below age 18): they are 48 percent non-white. Since 2000, the aging of the white population combined with the relatively low fertility rate of white women of child-bearing age has led to an absolute decline in the number of white youth. Thus minorities (Hispanics, Asians, blacks and others) constitute all of the growth in America's child population.

So as millennials move into positions of leadership, both public and private, they will pave the way for a nation that will look nothing like the world of Ozzie and Harriet. Tomorrow's "middle America" will be a truly multiracial and multicultural, and it will be up to millennials to define what that means.

BILL FREY is a senior fellow at both the Milken Institute and the Brookings Institution, and author of *Diversity Explosion: How New Racial Demographics Are Remaking America*.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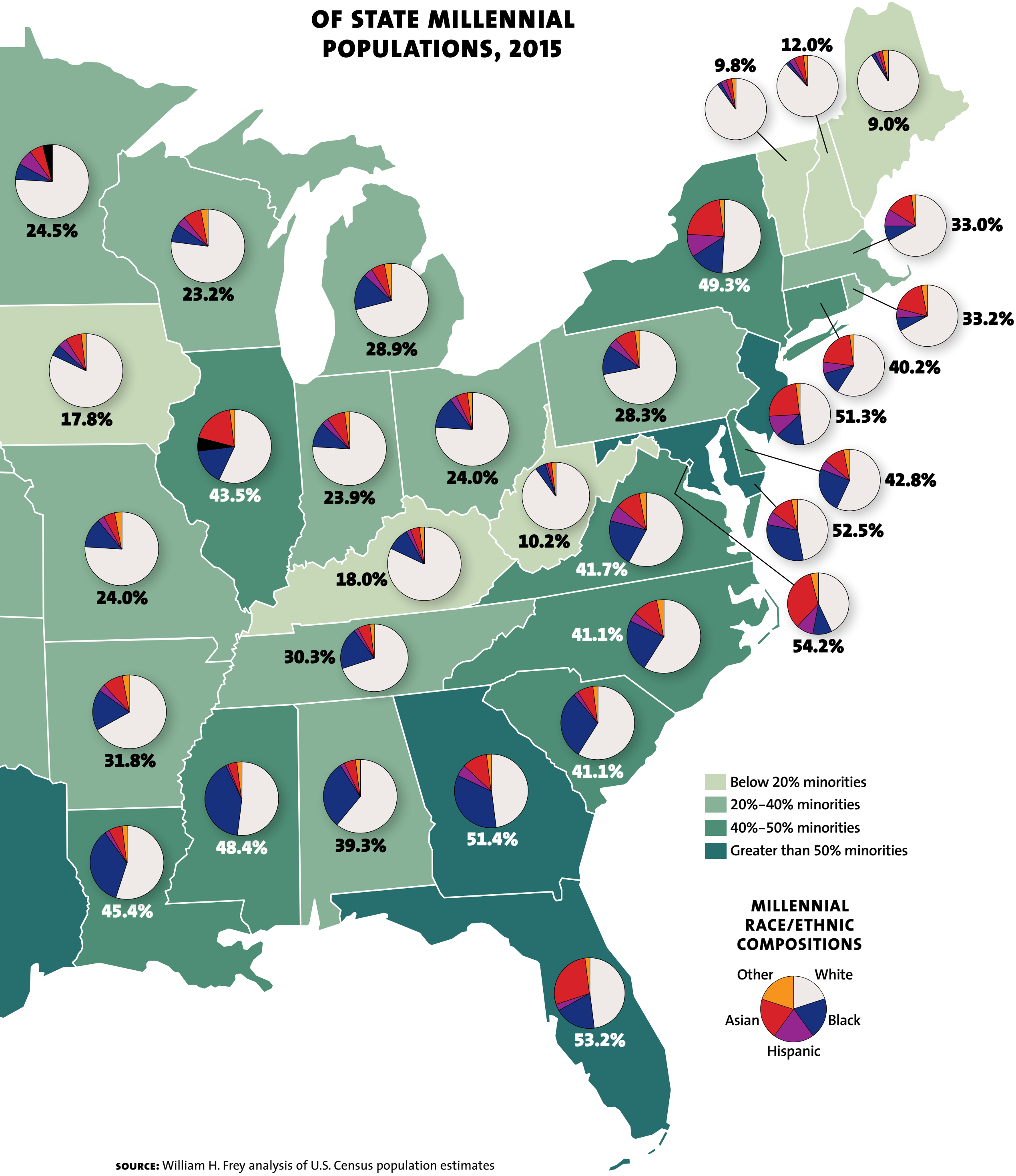
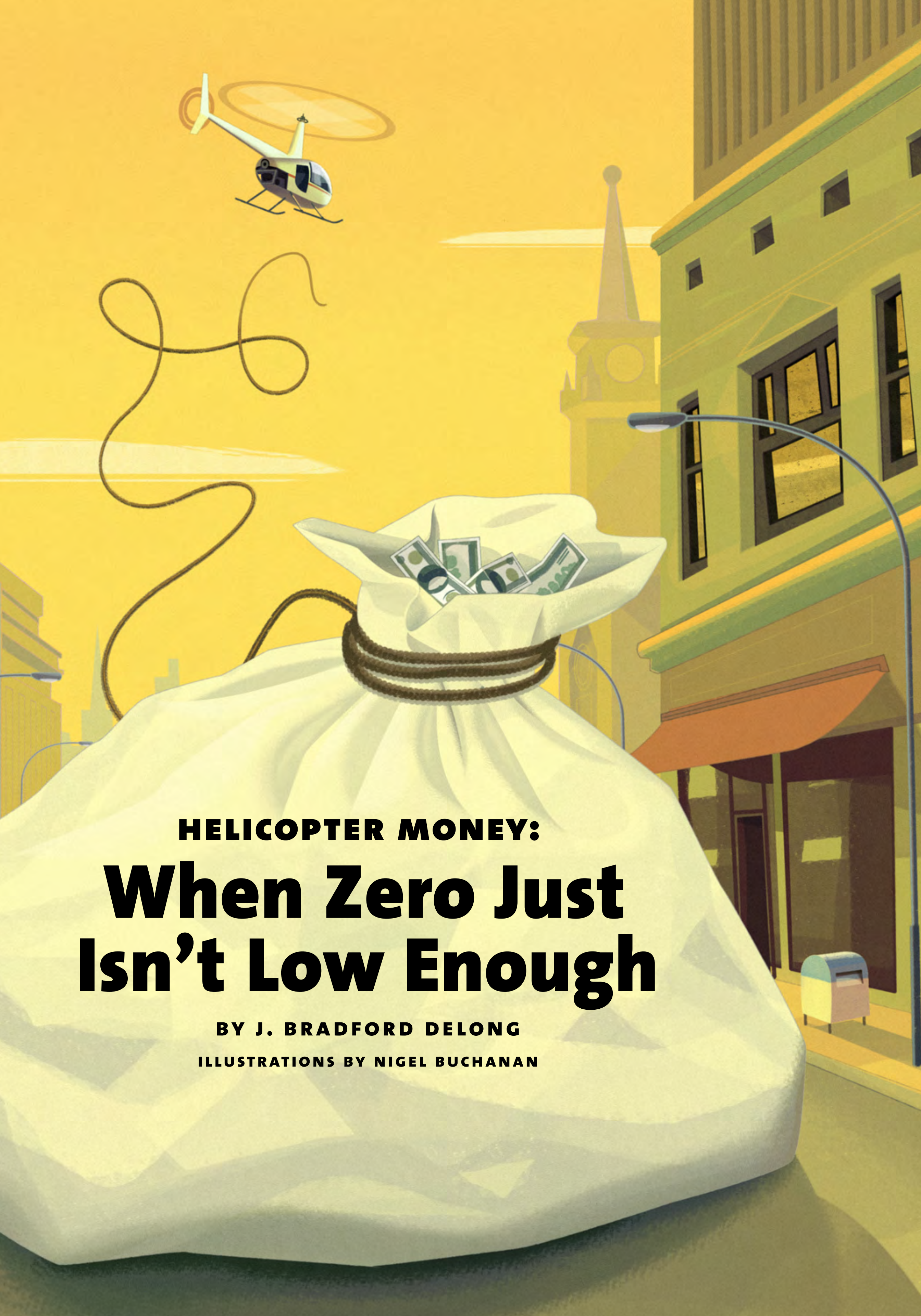
MINORITY SHARES OF STATE MILLENNIAL POPULATIONS, 2015



SOURCE: William H. Frey analysis of U.S. Census population estimates



HELICOPTER MONEY:

When Zero Just Isn't Low Enough

BY J. BRADFORD DELONG

ILLUSTRATIONS BY NIGEL BUCHANAN

If you pay much attention to the chattering classes – those who chatter about economics, anyway – you've probably run across the colorful term "helicopter money."

At root, the concept is disarmingly simple. It's money created at the discretion of the Federal Reserve (or any central bank) that could be used to increase purchasing power in times of recession. But the controversy over helicopter money (formally, money-financed fiscal policy) is hardly straightforward.

Here's my take on why helicopter money has entered the zeitgeist now, why it is so appealing to those of us who worry that macroeconomic stimulus will be insufficient to keep the economy chugging forward – and why proponents and critics seem inclined to talk past each other.

WHY NOW

With unemployment back below 5 percent and no portents of a downturn visible, it's fair to say that the American economy has recovered from the collapse of the mortgage finance bubble and the Great Recession that followed. But the recovery has been marred by the reality that a fair portion of the decline in unemployment from its 2010 peak of 10 percent has come about because millions of the unemployed have given up looking and dropped out of the labor force.

Actually, the picture is even darker. While American workers are finally enjoying the bigger paychecks expected during a recovery, in the long run increases in living standards are limited by the rate of economic growth. And growth remains anemic because the positive impact of putting Americans back to work has been partly offset by a downturn in labor productivity (output per hour worked). Indeed, the only bright spot here is a relative one: Japan and most of Europe are in worse shape.

Thus, one factor that has driven the notion of helicopter money into policy nerds' consciousness is fear of what Lawrence Summers, the former secretary of the Treasury, called secular stagnation. Another is the drift toward dependence on monetary policy for macro stabilization dating from the late 1970s, when stagflation stalked the land.

That period of little growth and much inflation convinced a lot of politicians that they did not want responsibility for managing the business cycle – that to assume responsibility was to accept blame because it would often go badly. And even when stabilization policy went as planned, it often required policymakers to exact a lot of pain from the voters.

When Congress and the White House decided to duck and cover in the face of stagflation, Fed Chairman Paul Volcker stepped up to fill the leadership vacuum. Which he did with a vengeance, engineering a nasty recession in 1980 in order to jolt Americans out of the self-fulfilling expectation of high and accelerating inflation. And so began the golden age of the central banker.

After 1980, the Fed and its counterparts elsewhere in the industrialized world were celebrated for their "independence," as they effectively freed policymaking from business-as-usual meddling by rent-seeking lobbyists and vote-seeking politicians. They were tasked to be good technocrats, finding the path between the Scylla of inflation and the Charybdis of unemployment without interference.

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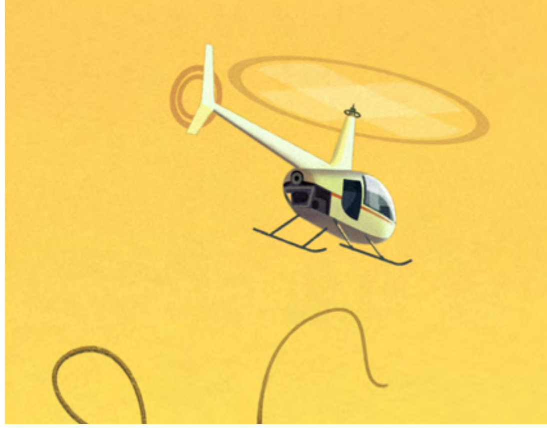

That was certainly the idea. But a question remained: Did the Fed have the tools to do the job alone? Volcker's view, and the consensus view of mainstream economists, was that it did. Milton Friedman and other monetarists had demonstrated that central banks' powers to create money and to both supervise and rescue the banking system were more than enough to keep the economy on cruise.

Yes, there were dissenters who nurtured the flame lit by John Maynard Keynes. Back in 1936, Keynes argued:

> It seems unlikely that the influence of banking policy on the rate of interest will be sufficient by itself. … I conceive, therefore, that a somewhat comprehensive socialization of investment will prove the only means of securing an approximation to full employment, though this need not exclude all manner of compromises and of devices by which public authority will cooperate with private initiative.

By the 1980s, however, the Keynesians had scattered. The Great Moderation of the business cycle in 1984-2007, in which recessions were infrequent and mild, and inflation never reappeared, was a rich enough pudding to be widely seen as proof that Friedman, with his faith in the curative powers of monetary stability, had been right.

But in the aftermath of the crash in 2008 it became very clear that all those complacent Fed-worshipping economists – a group that included me – were dismally wrong. Thankfully, the crisis opened a window of opportunity in which politicians and economists alike could assert the need for government to offset cratering aggregate demand with a huge package of tax cuts and temporary government outlays. That window has since closed, of course, as the "Very Serious People" (Paul Krugman's mocking phrase) have reasserted their faith that budget deficits are inevitably bad for children and other living things.

The Fed – and, more reluctantly, the central banks of Britain and the eurozone – have attempted to fill the breach left by the fiscal retreat by driving interest rates to near zero (or even below) with massive conventional "open market" purchases of Treasury securities and unconventional purchases of trillions of dollars' worth of other financial assets.

This has helped prop up private demand, but not sufficiently to cure all that ails in timely fashion. Moreover, the reliance on low interest rates to drive demand is beginning to concern mainstream economists – and not just those Very Serious People who have been forecasting runaway inflation since 2008. Among other worries, very low returns on bonds have the potential to create bubbles in other assets as investors scramble for profit. Low returns on fixed-return assets are deepening the crisis for underfunded pension plans that have been counting on a bounce-back to cover their obligations.

Now, in broad terms, we face a choice:

1. Acknowledge performance that a generation of economists would have characterized as grossly subpar by historical standards, demanding that central bankers improve on it without giving them additional tools.

2. Return the task of managing the business cycle to the political branches of government, which so happily ceded it to the Fed in the 1980s.

3. Supplement the Fed's tool kit, so the technocrats have a shot at meeting the mandated goals.

I believe that helicopter money (which I really will explain in more detail below) is the tool that would make Option 3 possible. Ideological conservatives intent on minimizing the reach of government generally go for Option 1, reiterating that the "cold douche" of unemployment, as Joseph Schumpeter put it in the midst of the Great Depression, would in the long run turn out to be good medicine for some reason or other. They generally go on to argue that Option 3 is really an illusion – that adopting it would eventually put central banks at great risk of losing their independence and end up as a prelude to Option 2, which must inevitably end badly.

We know that, were he alive today, Friedman would go for Option 3 because this was his recommendation for Japan two decades ago, when that country was bogged down in a situation much like the one facing the United States and Europe today. The interest rates controlled by the Bank of Japan had more or less bottomed out at zero, yet the economy was operating well below capacity.

We have yet to specify, though, just how helicopter money would stretch the Fed's powers sufficiently to make Option 3 viable.

WHAT'S THE APPEAL?

The argument made by Friedman in comments about Japan in the late 1990s was set out at greater length and depth by Ben Bernanke, who was then on the faculty at Princeton. Central banks, he insisted, still had the technical capacity to stimulate their economies even when interest rates could not be pushed lower. All they needed was the authority to put money in the hands of households, businesses or government agencies, giving them purchasing power without creating an equivalent liability.

The simplest way to think about this is to imagine that the Fed printed $100 million in $100 bills and dropped the cash by helicopter over downtown Chicago on a windy day. This "helicopter money" would make the finders $100 million richer without adding to the federal debt. Presumably, most of the $100 million would be spent fairly quickly, increasing the demand for everything from haircuts to ham sandwiches.

More practically, if less intuitively, helicopter money could also take the form of bank deposits – say, electronic transfers to everyone who filed a federal income tax form, or a nine-figure dollar transfer to, say, the Federal Aviation Agency, to pay for new computers for the air traffic controllers.

So, whatever happened to the no-such-thing-as-a-free-lunch adage? A large enough lunch (helicopter drop) would indeed create inflation if the newly created purchasing power exceeded the capacity of the economy to create the extra goods and services demanded. But it is surely not beyond the ability of the policy wonks at the Fed, who are less burdened by political considerations than policymakers elsewhere in the government, to prevent such overshooting.

There's also the issue of asset bubbles. It's possible that recipients of the windfall income would spend it on existing assets – stocks, real estate and the like – bidding up their value instead of buying new goods and services. But that in itself would not necessarily damage the economy. The "wealth effect" of bidding up asset prices would presumably loosen consumers' purse strings, accomplishing the desired effect, albeit indirectly.

The catch cited by Bernanke was that the public would consider the gift too good to be true – that recipients would hoard their new wealth in expectation of future tax increases. But, on reflection, this echo of the "Ricardian equivalence" argument against the lack of efficacy of deficit spending doesn't make much sense. Helicopter money doesn't create a debt

that needs to be repaid any more than running the mint's printing presses to satisfy the public's demand for currency creates a government liability.

For the record, neither Friedman nor Bernanke seems to have been the first widely respected economist to conjure the virtues of helicopter money. Jacob Viner, the great economist who led the University of Chicago's rise as the intellectual counterweight to Keynesianism, opposed government deficit spending during the Great Depression, but argued that "the simplest and least objectionable procedure would be for the federal government to increase its expenditures or to decrease its taxes, and to finance the resultant excess of expenditures over tax revenues either by the issue of legal tender greenbacks or by borrowing from the banks."

Thus, the concept has a long and impeccable right-wing pedigree. Helicopter money – or as I'll refer to it interchangeably, money-financed fiscal policy – would allow us to preserve our current institutional order and keep macroeconomic stabilization policy on a technocratic, central bank-focused basis. Yet it would avoid burdening future generations with the task of amortizing interest-bearing debt that comes with standard expansionary fiscal policy. Arguably most relevant for the deflationary world we now live in, helicopter money could stimulate aggregate demand at times when conventional monetary policy is running on fumes.

WHY IT ISN'T CATCHING ON

Why, then, have the latest proponents of helicopter money – notably, Adair Turner, the former chief regulator of Britain's banks – been greeted with skepticism verging on blunt dismissal? Those of us intrigued by the idea have been trying to figure that out for quite a while now. I suspect it has a lot to do with many commentators' deep ambivalence toward central bankers' independence, along with nostalgia for the decades in which conventional monetary policy worked wonders.

On the one hand, leaving monetary policy solely to members of the Fed's Open Market Committee – some of them appointed by the White House for long terms and some appointed by private bankers – seems undemocratic. On the other, the Fed's freedom from second-guessers is widely believed to make it more effective in balancing competing goals and even pioneering new policy strategies (think quantitative easing) when the times called for more.

This offers clues to why opponents of money-financed fiscal policy almost always begin their critiques by asserting the obvious: the use of helicopter money for stimulus would largely mimic the impact of conventional fiscal policy, minus the residue of government debt that the latter leaves in its wake. Claiming the authority to use helicopter money would thus extend the powers of the Fed into the space reserved for the executive and legislative branches, increasing concerns that an agency with vast power would be free to act without the consent of elected officials.

Actually, these concerns cut both ways. The choices made in targeting a helicopter-money drop – say, offsetting payroll taxes rather than income taxes, or adding money to the FAA's infrastructure funds rather than supporting railway repair – would invite public second-guessing and intervention by Congress and the President. Indeed, it is hard to imagine the Fed singling out beneficiaries without soliciting advice from the other branches of government. Thus, for better or worse, the status quo would be upset; in acknowledging its fiscal powers, the Fed would almost inevitably lose some measure of independence to determine the magnitude, means and timing of its efforts to stimulate the economy.

A close look suggests, however, that there is a bit less to these concerns than initially meets the eye. One perceived vice of money-financed fiscal policy is that it is not constrained by fears of raising the government debt. Hence, the worry that the Fed would come under pressure from elected representatives to stimulate the economy by more than is prudent. The irony, of course, is that one of the great virtues of helicopter money for Japan is that it could deliver much-needed stimulus without adding to an already humongous public debt.

The catch here is that every empirical study of when structural reform works and when it doesn't concludes that success is more likely in an economy operating near full capacity. This stands to reason: getting a government agency to shed employees or persuading a dominant business to lower barriers to its industry is a lot easier when jobs are easy to find and profits are high. In other words, helicopter money could serve as a complement to structural reform – not a substitute.

There's another dimension to the power-independence calculus, however. The Fed's power, now primarily exercised through pur-

Arguably most relevant for the deflationary world we now live in, helicopter money could stimulate aggregate demand at times when conventional monetary policy is running on fumes.

In any event, this is an issue the Fed has faced for a century in its exercise of conventional monetary policy, where the short-term benefits in terms of growth, employment and profit must be weighed against the risk of future inflation. Indeed, it looks like the rerun of the even older argument about the gold standard, which guaranteed that the government would keep its hands out of the proverbial cookie jar at the cost of leaving that same government powerless to manage short-term fluctuations in aggregate demand. I see no reason to conclude that giving the Fed authority to mix and match fiscal and monetary measures would tempt the agency to change its priorities in macroeconomic management.

Michael Heise, the chief economist of Allianz SE, a German financial services conglomerate, offers a variation on this theme. Access to helicopter money, he suggests, would give ill-disciplined governments one more way to delay the structural reforms that are keeping unemployment high and growth low.

chases and sales of securities, must inevitably favor some interests over others, changing the distribution of income and wealth between savers and borrowers, between banks and industrial entities, between labor and the owners of capital, between capital-intensive industries and others – you name it. Extending its reach into fiscal policy might make the awesome power of the Fed more visible and thus invite more pushback from other branches of government, but it would not fundamentally change the tension between the competing attractions of making economic policy by representative democracy and leaving it to the technocrats.

Bernanke, who, unlike a majority of policy economists who have spoken out on the subject, favors the use of helicopter money in some circumstances, would directly address the power-independence tension. He would formally assign the Fed the authority to propose the timing and magnitude of money-financed fiscal policy, while giving Congress and the White House the power to determine how the stimulus would be spent – or to veto the initiative.

That's certainly a plausible way to divide the baby. One must wonder, though, whether giving Congress and the White House so much discretion would really lead to evidence-based public policy in an era in which so many elected officials are proud of their ignorance of macroeconomics and so determined to reduce the reach of government. An alternative would be to curtail the independence of the Fed only in terms of how the helicopter money could be spent. One might, for example, ask Congress to choose one large, broad target that is relatively uncontroversial – say, limiting it to rebates on the federal payroll tax.

WHY IT ISN'T TOO LATE, OR TOO SOON

The argument over helicopter money may strike some as an argument whose time has passed, at least in the context of the U.S. economy. For one thing, the economy seems to be inching toward full capacity, at least by the diminished expectations of the 21st century. Accordingly, the Fed is now debating when to retreat, not how to squeeze a bit more juice out of monetary policy. For another, while Keynes may be dead, he can always be resurrected. Governments retain the power to stimulate the economy using old-fashioned expansionary fiscal policy – as in, borrow and spend.

But, all too recently, we have heard various and sundry conservative thought leaders ranging from House Speaker Paul Ryan to German Chancellor Angela Merkel insist that expansionary fiscal policy would be fine – but only if government debt were lower. So if you really want to retain expansionary fiscal policy as an option, but acknowledge that the political lift is Sisyphean in today's environment, helicopter money no longer looks like an academic curiosity. Money-financed fiscal policy delivers the high without the hangover – a big advantage in these (and other) times.

Then there's the matter of the efficacy of conventional monetary policy the next time recession looms. Right now, the projection by participants in the Fed Open Market Committee meetings is that the Treasury bill rate will most likely top out at 3 percent in this business cycle, and it would be a brave meeting participant who would claim we're likely to get there (if we get there at all) before 2020. That would not provide enough room for the Fed to loosen monetary policy by even the average amount of slack seen in previous post-World War II recessions. Odds are, then, that standard open market operations will not be up to the task when the next adverse shock hits the economy.

Of course, necessity is the mother of invention and all that. As Fed chairman, Ben Bernanke took a lot of criticism in pushing quantitative easing as a means of supplementing stimulus when conventional monetary policy reached its limits and the Tea Party made further fiscal stimulus unthinkable. But do we really want to postpone a serious discussion of helicopter money until Janet Yellen or her successor hits the wall the next time around?

The Swedish Economy

Triumph of Social Democracy — or Serendipity?

BY ANDREAS BERGH

In 2016, Sweden came out on top of the Reputation Institute's yearly ranking of 55 countries according to how people viewed them as places to live and work. The same year, Sweden outranked 162 other countries to reach the number-one spot in the Good Country Index, based on its ranking on 35 UN and World Bank criteria ranging from living standards to environmental sustainability.

Now, Sweden doesn't always come in first, but it always does well by just about any important yardstick of social and economic success. In the latest available reports, Sweden placed fifth in the Legatum Institute's Prosperity Index, eighth in the World Bank's Doing Business report, and third in Transparency International's Corruption Perception Index. What makes Sweden perform better by so many criteria? Could other countries find lessons in Sweden's experience that apply across borders?

The good news is that combining research on the causes of prosperity with detailed studies of Sweden's economic and political history offers a fairly convincing answer to the first question. But knowing more about how Sweden became prosperous does not necessarily tell us whether the magic could be bottled for export. In fact, surprising as it may seem to those who see Sweden as the triumph of the modern welfare state, Sweden's success has largely been the result of trial and error, not to mention the beneficiary of the unintended consequences of public policy.

Yes, there are a few lessons to be learned by studying Sweden, just as there are things to be learned from the experiences of any other country. But the lessons from Sweden are not always what one might expect, and in some cases are truly elusive.

In the aftermath of the 2008 global financial crisis, Sweden was described as a rock star of recovery by *The Washington Post* and a supermodel for other crisis countries by *The Economist.* But before we scrutinize the Swedish model for insights into economic-crisis management, two things are worth noting.

First, just 25 years ago, things looked very different. Sweden was not a success story but rather the poster child for how not to run an open economy. Indeed, in October 1993, *The Economist* published an article with the headline "Worse and Worse," lamenting Sweden's humungous budget deficit (13 percent of GDP) and an increasingly unsupportable public debt, along with a rapidly depreciating currency.

Second, it bears emphasizing that, over the years, the example of Sweden has been used to support widely varying ideological positions. Around 1970, Sweden was the fourth-richest country in the world (in terms of per capita income), after Switzerland, the United States and Luxemburg. Social Democrats had been in power since the early 1930s and Sweden was widely touted as proof that socialism – at least the democratic, Swedish version – could work very well. The country had experienced 100 years of remarkably high growth and rising living standards, as well as narrowing gender inequality.

The economic problems that became apparent during the 1970s were initially blamed on factors beyond the little country's control, such as the oil price shocks. A center-right government did take office in 1976, with Social Democrats in opposition for the first time in 44 years. Its mandate, however, was

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not to push the Swedish economy in a new direction but to deliver what the Social Democrats had been supplying for decades until they slipped – namely, a globally competitive economy and ongoing social reforms.

It did make good on the latter, but failed with the former. It took repeated devaluations of the Swedish currency, the krona, to keep the economy – by necessity of its size and location, a very open economy – competitive. When the Social Democrats returned to power in 1982, yet another devaluation, combined with the global economic recovery of the 1980s, left the general impression that social democracy was back on track. But the fundamental problem of lagging competitiveness had not been solved, and the economic downturn of the early 1990s hit Sweden much harder than other countries.

By now, the debate regarding the Swedish model had shifted. Chronic economic problems (especially slow productivity growth) were now seen as proof that socialism didn't work – not even in Sweden. A new center-right government was elected in 1991, and this time the mandate was to make fundamental

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changes in the Swedish model, rather than to polish the one that Sweden had long embraced. In some areas the government succeeded; in others it hit a wall of resistance. Simply put, competition and economic freedom increased in many areas of the Swedish economy. But key areas, notably the labor market and the housing market, remained highly regulated.

The winding road Sweden has taken has made it difficult to say whether being more like Sweden involves increasing taxes and government intervention in the economy – or whether it means liberalization, deregulation and welfare-state retrenchment. So, before other countries try too hard to become more like Sweden, it is wise to look back at how Sweden came to be Sweden. The answers may surprise you – they certainly surprise a lot of Swedes.

THE GROWTH OF THE FOREST ECONOMY

A standard explanation (one still taught in Swedish textbooks) of how Sweden grew rich relies on the primacy of exports. Industrialization in other countries, the argument goes, generated demand for Swedish timber. As everyone who has heard of the "oil curse" or "Dutch disease" knows, though, having valuable natural resources to sell is no sure path to growth and prosperity. Swedish scholars – notably Johan Myhrman and Jan Jörnmark – were some of the first to note that institutional reforms, in particular securing the right to private property and the freedom to trade internationally, are pivotal in sustaining growth pretty much everywhere. And while all that timber played a role in Sweden's development, institutional change was the key to the switch to a long-term growth track.

Perhaps the most interesting aspect is how the process was triggered. Often, it was foreign entrepreneurs rather than Swedes who saw the potential value in the Swedish forest. Meanwhile, the Swedish state moved to define and protect private property rights because the government saw this as a step to expanding the tax base. In other words, the development of taxation and private property rights did not only coincide, but were in fact two sides of the same coin.

> **While all that timber played a role in Sweden's development, institutional change was the key to the switch to a long-term growth track.**

On a superficial level, then, Sweden is yet another country that illustrates how well-functioning private property rights are a vital prerequisite to economic development. But the subtle aspect to Sweden's export-led development story is that it's impossible to identify either the market or the government as the primary driver.

THE IMPOVERISHED SOPHISTICATE

Sweden around 1850 has been described as an impoverished sophisticate because the average education level was high compared to incomes. Having a highly educated population arguably contributed significantly to economic growth. But why was educational attainment high in Sweden to begin with?

Historians point to the early introduction of mass public education, with the adoption of the 1842 Elementary School Act. The law, which stipulated that every parish must have at least one school, is often mentioned by contemporary politicians as a shining example of Sweden's long commitment to investment in human capital. The policy implication is seemingly clear: political decisions promoted growth early on by mandating public education. That may well be the case. But before jumping to that conclusion it is worth considering the analysis offered by the economic historian Thor Berger of Lund University.

Berger argues that the education law looks good in history books, but largely provided the potential without the substance. The law came with meager funding and no minimum requirement of attendance. Interestingly, the rural poor (who were very poor, indeed) were apparently opposed to state intervention in primary education because they feared having to pay higher taxes to finance it.

The question then remains why, in the latter half of the 19th century, Swedes attained an average level of schooling that was much higher than could be expected, given the country's modest level of economic development. According to Berger, the answer lies in local elites, which pressed the case for investment in primary schooling in rural areas.

Just why this rural upper class acted as it did is hard to say. Maybe it wanted to shape the minds of the masses in an era of growing fear of class warfare; maybe the goal had something to do with the tenets of Lutheran church. Most strikingly, Berger shows that the positive influence of local elites on school spending was weaker in places in which suffrage had been extended beyond landowners and the middle class. Many voters, it seems, preferred instead to spend tax money on poverty relief.

The chain of events that led Sweden to introduce tax-funded universal pensions has an important non-ideological component that is often ignored: the demographic dislocation caused by mass Swedish emigration to the United States that peaked between 1870 and 1900.

In short, education promoted economic development in Sweden, but democracy at the time did not promote education. Knowing more about what actually happened in Sweden hardly leads to clearer recommendations for other countries.

THE WORLD'S FIRST UNIVERSAL PENSION SYSTEM

Other aspects of Sweden's rise as the global leader of social democracy also resist easy interpretation. In 2013, Sweden celebrated the 100th anniversary of its pension insurance system, which is acknowledged to be the world's first universal system, providing cash to everyone reaching age 67 as well as to anyone who became disabled.

The keyword here is universal. Other countries had pension systems earlier. But the Swedish system was unique in that it covered the entire population and also served as poverty relief. The universal nature of many components of the social safety net is still a core feature of the Swedish welfare state, defended by many on ideological grounds. But the chain of events that led Sweden to introduce tax-funded universal pensions has an important non-ideological component that is often ignored: the demographic dislocation caused by mass Swedish emigration to the United States that peaked between 1870 and 1900.

The social-policy expert Per Gunnar Edebalk of Lund University notes that the Swedish population at the turn of the 20th century was, on average, very old. Sweden had 165 persons age 65 years or older for every 1,000 persons

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ages 20 to 65. Comparable figures for Great Britain were 88 and for Germany 96. This coincided with the emigration of almost one million Swedes – more than one-fifth of the entire population – to the United States.

The migrants' primary motives were to escape poverty and to seek better opportunities. And because they were typically young adults, an immediate result was a lack of familial support for the impoverished elderly back in Sweden. Doing nothing about that would have placed an enormous burden on municipal poverty relief – then the last resort of the destitute – and so municipalities turned to the central government. More or less by chance, that need coincided with the introduction of the reporting and taxation of individual incomes in Sweden, which gave the government an adequate source of revenue to meet increased demand for relief. And so, the Swedish welfare state was born.

GENDER EQUALITY

One of the most celebrated aspects of Sweden's social democracy is the high degree of gender equality, both in general and in the labor market. And that claim is not hollow: among all OECD countries, Finland and Sweden are at the very top when it comes to female labor force participation relative to males.

Swedish social planners rarely fail to point out that tax-financed child care has been critical to easing the way to female labor force participation. But this seems less the cause than the effect of a collective determination to promote gender equality. It doesn't explain why Swedes, who were seemingly as attached to the male-breadwinner model as others, so readily adopted a dual-earner household model while other European countries lagged behind.

There really is a puzzle here. Sweden only adopted universal suffrage in 1921, years after the rest of Scandinavia. Yet, a few decades later, the country was a front-runner in female labor force participation and gender equality. The answer suggested by those who have looked closely at the issue may come as a surprise: economic growth.

To see why growth mattered, note first that tax-financed child care was initially not popular in Sweden. Male politicians resisted the proposed intervention because they worried that it would undermine women's incentives to cater to household needs. This resistance only eroded after World War II, when buoyant economic growth generated demand for labor that only women could supply from the domestic population. Indeed, the radical expansion of tax-financed child care was only adopted in 1963. But once the reform was in place, the work force adapted rapidly: Children who grew up in Sweden during the 1970s or later have never known a time when it was normal for women to stay home.

These days, many Swedes worry about the low levels of labor force participation among immigrant women in Sweden and stress that gender equality has economic benefits. As true as that may be, the forgotten lesson from Sweden is that economic growth drove the change in cultural norms, not the other way around.

THE SWEDISH EXPERIMENTS, 1970-1995

The examples above are mostly cases in which historical accidents worked out favorably for Sweden. But, as more recent reform initiatives suggest, Sweden's fortunes have not always been protected by prescient social and economic planning – or by good luck.

In the 1970s, several well-intended political reforms backfired. The desire to increase income equality through high marginal tax rates and generous welfare benefits weakened work incentives and created strong incentives for tax avoidance. Indeed, in the 1970s and 1980s, many wealthy Swedes – notably Bjorn Borg – left the country to avoid the taxman.

Meanwhile, the desire to tame the business cycle and minimize unemployment led to the subsidization of noncompetitive industries. The unions' desire to drive wages ahead of productivity growth led to inflation, while efforts to restore Sweden's competitiveness through repeated currency devaluations led to both a lower living standard and investment-sapping uncertainty.

Perhaps most important, the mix of subsidies and devaluations sent the signal that firms in trouble could turn to the government for help, rather than be forced to innovate in order to stay competitive. When that happens, economies inevitably pay a price.

The problematic period in Sweden – roughly from 1970 to 1995 – is one of the most useful periods in Sweden's history when it comes to lessons for other countries. Those who want to learn more about the Sweden that seemingly could do no right should look to Assar Lindbeck's out-of-print book, *The Swedish Experiment*. Or check out his article with the same name in the *Journal of Economic Literature*, which is alive and well in the American Economic Association's digital archive.

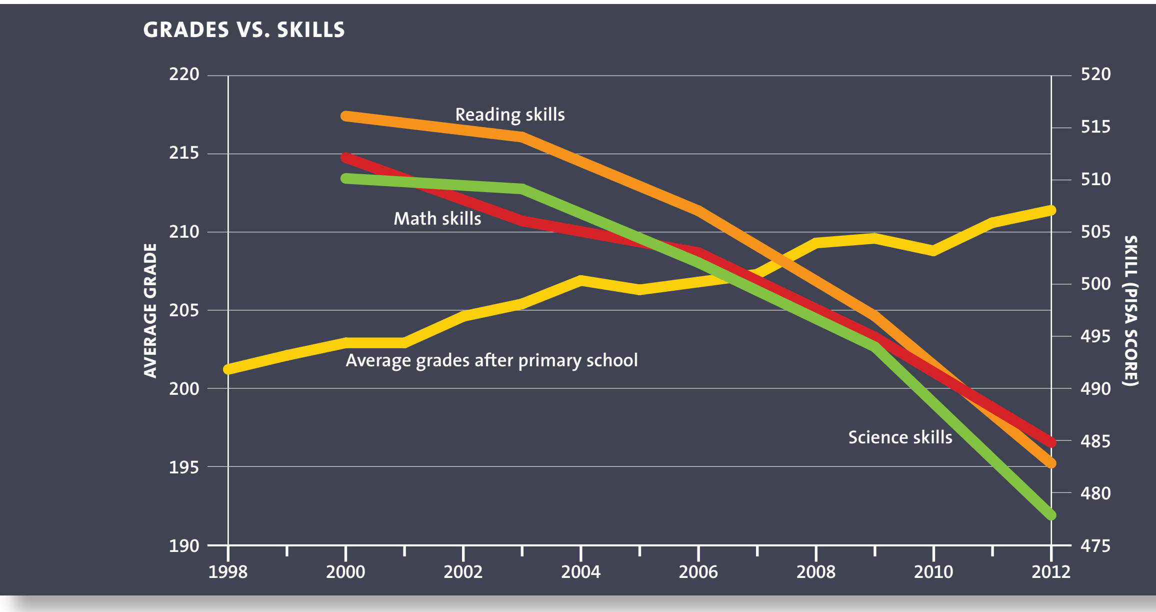
WHAT NOW?

After the crisis of the early 1990s, the Swedish economy recovered smartly. In many ways, Sweden learned from its mistakes and took measures to avoid large budget deficits and inflationary wage pressures. By the mid-1990s, these changes were institutionalized – and strikingly, often with support from Social Democrats as well as the right-wing parties. Prominent examples include a tax reform that lowered marginal rates substantially and a pension reform that balanced the risks between pensioners and taxpayers by automatically adjusting payments to demographic and economic conditions.

But things are not all fine and dandy. In fact, the mood in Sweden seems more pessimistic than usual about the country's future. And the news regarding Sweden's pole position in the Good Country Index and the Reputation Institute's rankings didn't make much fizz in Sweden. Doing better than most other countries is not really enough if your country is doing worse than it was five years ago. And according to recent polls, that's where Swedes think they stand.

Educational reforms gave schools strong incentives to inflate grades and to give students improved access to universities whose admissions policies remained tightly tied to metrics of success in secondary school.

There are many reasons for the current pessimism, two of which deserve mention here. First, the reform wave that contributed to Sweden's recovery after the crisis of the early 1990s left the labor market more or less untouched, and thus still highly regulated. High minimum wages and relatively low demand for workers with little education pose few obstacles for the majority of Swedes, who share language, community and a solid educational background. But they represent a serious hurdle for the large numbers of recently arrived refugees. And thrusting low-skilled immigrants into an unforgiving labor market – and backing it up with the very expensive services of a universal welfare state – amounts



SOURCE: Data from http://www.iva.se/globalassets/info-trycksaker/iva/201609-iva-henrekson-javervall-i.pdf

to an ongoing test of Swedes' tolerance and flexibility that many are unhappy to be participating in.

A second issue weighing down the public mood is the troubling development in Sweden's once widely admired primary and secondary education system. In a nutshell, the skills of students have been decreasing for decades, even as their grades have increased.

This problem nicely underscores the importance of unintended consequences in driving Sweden's social and economic change. The education system has undergone a series of reforms, many of which have interacted in unforeseen ways. First, primary and secondary education were decentralized, with authority devolving from the central government to municipalities – as well as to parents who, thanks to a voucher system, get the last word on where their children go to school. Second, grading criteria, once rigidly dictated by the center, were made more flexible.

These changes gave schools both ample opportunity and strong incentives to inflate grades – the better to please parents (who now had a choice about where to send the kids), and to give their students improved access to universities whose admissions policies remained tightly tied to metrics of success in secondary school. Adding to concerns about declines in the quality of education, new teaching methods that de-emphasized the teacher's role in the classroom in favor of group work and free exploration became all the rage.

* * *

Sweden's modern economic and social history offers sufficient room for interpretation for observers to draw the conclusions that best fit their preconceptions. What I can say with some confidence is this: first, a combination of culture and luck (never forget the latter) has made Sweden the envy of outsiders, and for good reason. Second, there's no guarantee the luck will hold. The Swedish experiment is just that – an experiment in which the best-laid plans of social engineers and men oft go astray.

FILLING PASS-THROUGH BUSINESSES THE GAP AND TAX REFORM

BY ERIC TODER

ILLUSTRATIONS BY ADAM NIKLEWICZ

Among the many things you learned from the presidential campaign of 2016 – but probably never really wanted to know – was a whole new vocabulary related to ways in which the wealthy legally avoid taxes. Yes, you've suffered through "carried interest," "tax inversion" and "like-kind exchange." And I know it's cruel to introduce yet another term to this witch's brew.

But be patient; this one's worth a few minutes of head-scratching. Once a limited taxing method used almost exclusively for small or closely held businesses, "pass-through" treatment is now so common that one can longer consider a business tax reform that is limited only to corporations. And tax reform proposals that seek to match corporate rate cuts by providing special reduced individual tax rates for owners of pass-through businesses threaten to open up a major new vehicle for tax avoidance.

FIRST, THE FACTS

Most businesses in the United States do not pay corporate income tax. Instead, they report their earnings to their owners, who include their shares of the profits on their individual tax returns. We refer to these as pass-through businesses because, while many of them benefit from the legal advantages of corporations (notably, limited liability), they do not themselves pay tax, instead passing through their taxable profits to their owners.

PASS-THROUGH MATH

INCOME AND TAXES PAID	PASS-THROUGH	C CORPORATION WITH DIVIDENDS	C CORPORATION WITH RETAINED EARNINGS
Income	$1,000	$1,000	$1,000
Corporate Taxes	0	$350	$350
Dividends	0	$650	0
Individual Taxes	$396	$154.70	0
Total Taxes	$396	$504.70	$350

SOURCE: The author

Both partnerships and businesses owned by individuals (sole proprietorships) typically pay tax under this pass-through method. Pass-through treatment is also allowed for so-called S corporations, which are organized under Subchapter S of the Internal Revenue Code. In contrast, other corporations (C corporations) pay a separate corporate income tax, and then their owners pay individual income taxes on any dividends they receive.

The table above illustrates the differences in tax treatment, comparing the taxes paid by owners of the pass-through businesses with the taxes on regular C corporations that do or do not choose to pay out their profits as dividends. Assume that all three companies earn $1,000 of profits, that their owners are all in the top individual income tax rate bracket (39.6 percent for ordinary income, 23.8 percent for dividends) and that the C corporations pay the maximum federal corporate rate of 35 percent. All can deduct wages and other compensation paid to employees.

For pass-through businesses, the only tax paid is the individual income tax, which is imposed on all their income. At a top 39.6 percent rate, they pay $396 in income taxes.

By contrast, C corporations pay a 35 percent tax on their profits and then their owners pay another $154.70 (at a 23.8 percent rate) when the corporations distribute the after-tax profit of $650. The total tax burden on the owners of a C corporation that distributes its profits is $504.70. If a C corporation chooses to retain its earnings, it pays only the $350 in corporate tax and its owners pay nothing additional.

Pass-through entities plainly enjoy a tax advantage over C corporations that pay dividends. Closely held businesses, however, may pay less tax as C corporations than as pass-through enterprises if their owners do not need cash distributions from the business to meet personal needs. Owners of these companies can thus defer the second level of tax, although they will still bear some tax later when they distribute the profits – or cash them out as capital gains by selling the business.

Historically, the special benefit for a business that organized itself as a C corporation was limited liability. Investors in C corporations could not be held personally liable for debts accrued by the company. Under today's laws, however, any privately owned company can organize itself as a pass-through business while retaining the protection of limited liability for its investors.

C-corporation status is still required, however, for most businesses that choose to issue

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shares that are publicly traded on organized exchanges. For the most part, therefore, the largest businesses with the biggest capital requirements, including most multinationals, continue to file corporate income tax returns and pay corporate income tax – provided they report taxable profits.

WHY YOU SHOULD CARE

Pass-through entities represented 85 percent of business returns in 1984 and fully 95 percent in 2012, as larger businesses joined the crowd long dominated by small ones. It follows that pass-throughs' shares of business income increased disproportionately from 27 percent of all net business income to almost 60 percent.

This rapid growth reflects changes in tax law that made it more advantageous for businesses to organize in the pass-through form. For one thing, it has become easier to establish both S corporations and limited liability partnerships. The 1986 Tax Reform Act increased the number of shareholders allowed in an S corporation from 35 to 100. Meanwhile, changes in state laws in the 1980s facilitated the growth of limited liability partnerships. And the growth of pass-through businesses was greatly enhanced by "check the box" rules issued by the Treasury Department in 1997, which simplified the process of opting out of the corporate tax.

Reductions in individual income tax rates that exceeded reductions in corporate tax rates also encouraged closely held businesses to switch to pass-through status. Before the 1981 tax cuts, the top corporate rate was 46 percent, compared with a top individual rate of 70 percent. After passage of the 1986 Tax Reform Act, the top individual rate fell to 28 percent, compared with a top corporate rate of 34 percent. In response to this rate change and the expansion of the number of shareholders allowed in an S corporation, S corporations' receipts more than tripled from 1984 to 1988 to $1.2 trillion while their profits increased from $7 billion to $44 billion.

Since 1988, the top individual rate (39.6 percent) has risen slightly above the top corporate rate (35 percent). But pass-through status remains advantageous for any company distributing at least a small share of its profits.

To be sure, most pass-through businesses are still modest in size, and the bulk of reported income from the largest businesses still comes from C corporations. But there are a large and apparently growing number of pass-through businesses that hardly qualify as small. In 2012, S corporations with gross receipts of $50 million or more accounted for 29 percent of total pass-through profits, while partnerships with total assets of $100 million or more accounted for fully half of partnership profits.

Pass-through status remains advantageous for any company distributing at least a small share of its profits.

Note, too, that many relatively small enterprises that pay tax as pass-through firms are not necessarily independent businesses. Many franchisees are affiliated with larger corporate enterprises. And many assets previously owned by corporations, such as commercial buildings, have been spun off to pass-through entities that lease them back to the same corporations. The logic is plain enough: leaseback arrangements remove the related profit from the tax base of corporations that can't opt for pass-through status.

The switch to pass-though status has affected not only the collective tax liability of business, but also the distribution of after-tax income, since the bulk of business income goes to the very affluent. The Urban-Brookings Tax Policy Center estimates that in 2016 households in the top 1 percent will receive 54 percent of reported business income, compared with 17 percent of income from all sources.

THE TANGLED WEBS WE WEAVE AND REWEAVE

Tax reform, you must know by now, is the gift that keeps on giving, occupying an army of experts employed in working around old reforms and smothering proposed ones while still in gestation. The gold standard for past tax reform efforts was the Tax Reform Act of 1986, a product of a rara avis: bipartisanship. As noted above, the 1986 reform sharply reduced the top rates on the individual and corporate income tax, making up the revenue loss by reducing or eliminating tax preferences that narrowed the tax base.

Broad-based tax reform modeled on the 1986 law would be harder to enact today for many reasons, including the reality that Republicans and Democrats now mostly talk to each other via cable news. But partisanship isn't the only reason reform is hard. A major obstacle on the individual income tax side is that the most costly tax preferences are popular and widely used – which was why they were left largely intact in 1986. These include preferences you can drive a 16-wheeler through, including the exemption of employer contributions to health insurance plans from taxable compensation, and deductions for mortgage interest, state and local nonbusiness taxes and charitable contributions.

With most base-broadening off the table (and with Democrats drawing the line at lowering the top individual rate), the one tax that still gets reformers on both sides of the aisle excited is the corporate income tax. The U.S. corporate income tax has become increasingly out of step with its counterparts, as other countries have reduced their top rates below the U.S. rate and moved toward systems that exempt foreign-source income of their resident multinationals. Leaders in both political parties have advocated lowering the top corporate tax rate and paying for that reduction wholly or in part by scaling back business tax preferences.

But don't get your hopes up just yet. The rising importance of pass-through businesses throws a monkey wrench into this approach. The largest business preferences, such as accelerated depreciation of equipment, benefit both C corporations and pass-through businesses. A revenue-neutral proposal that closed business preferences to pay for lower corporate tax rates would necessarily raise taxes on pass-through businesses that are taxed under the individual instead of the corporate rate schedules. But the politics of that trade-off are simply awful.

Pass-through businesses are mostly domestic companies, many of which are owned by very successful, influential people and employ mostly domestic workers. C corporations, by contrast, are increasingly global enterprises with sales, employment and shareholders throughout the world and tenuous connections to the United States. In 1953, a GM executive (Engine-Charlie Wilson) who was nominated for secretary of defense could assert that he faced no conflict of interest because "what's good for GM is good for the country." It would be hard for a leader of a multinational corporation to make the same claim with a straight face today.

Remember, too, that most small businesses are currently taxed as pass-through businesses. What sane politician would want to

advocate raising taxes on Mom and Pop at the deli in order to give multinationals a break?

Lowering the corporate rate without reducing the individual rate would cause added problems. If the gap between the corporate and individual rate becomes large enough, owners of closely held pass-through businesses could turn their firms into C corporations that retained most of their income. This would enable high-income business owners to defer paying the top individual rate.

Why not lower the individual rate, too, so that pass-through businesses do not end up paying higher taxes and the gap between individual and corporate rates does not widen? There is a simple reason: the math does not work. Most income taxed under the individual income tax consists of wages and salaries, not business profits. Reducing the individual income tax rate enough to compensate business owners would result in a massive revenue loss unless popular individual tax preferences were eliminated, too. And we've already discussed that non-starter.

TANGLED WEBS, PART II

OK, tax reformers, you're not dead yet. If individual rates need to be lowered to prevent tax reform from raising taxes on pass-through businesses, but it is too expensive to cut individual rates for everyone, why not create a separate rate for business income declared by households?

This approach seems to be gaining some traction. Candidate Trump's tax plan, which may or may not be President Trump's plan, illustrates some of the thorny issues in business tax reform. It would reduce the top rate on both corporate income and business income of individuals to 15 percent, while cutting the top individual income tax rate on earnings only to 33 percent. The House GOP tax plan, which presumably still reflects the preferences of the House leadership, would also reduce the top individual rate to 33 percent on earnings, but set a maximum rate of 25 percent on profits of pass-through entities.

As with all other attempts to apply different tax treatment to activities that can appear similar, this approach, alas, would open huge opportunities for gaming the taxman. For one thing, much of the income of owners of pass-through firms is, in fact, compensation for their labor services rather than a return on business equity. How, then, is the IRS supposed to distinguish the component of pass-through income that represents reasonable compensation for work effort?

Note, too, that dual rate schedules would be a huge incentive for people to alter their

What sane politician would want to advocate

employment relationships. A key researcher in an economic consulting firm could, for example, resign as an employee and then sell her services to the firm as a consultant. This would reduce her income tax rate under the Trump proposal from 33 percent to 15 percent.

Actually, drawing lines between wages and business profits is already difficult under current law. Earnings of employees are currently subject to a 15.3 percent payroll tax under the Federal Insurance Contributions Act, which is divided equally between employers and employees. The self-employed pay the same 15.3 percent tax rate. But they can deduct 7.65 percent of their gross earnings from their tax base to achieve parity with the FICA tax rate, which applies to earnings net of the 7.65 percent employer contribution.

The incentive here to shift income from labor compensation to profit is even stronger than it first appears. The 12.6 percentage points of the payroll tax that are dedicated to Social Security pensions are capped at $118,500 for tax year 2016, but the 2.9 percent portion that funds Medicare applies to all earnings. As a result, the highest earners face a 2.9 percent additional marginal tax rate on all their wages that does not apply to an additional dollar of business income.

A nice chunk of the federal tax code must thus be dedicated to differentiating business income from labor compensation. Suffice it to say that interpreting the code (and subsequent case law) keeps the accountants, lawyers and auditors very, very busy. Indeed, in some situations, individuals supplying personal services through S corporations have successfully avoided substantial amounts of payroll tax by understating what most people would think was compensation. This has been called the John Edwards/Newt Gingrich loophole, after the two former legislators who stretched the definition of business income to the limit.

Opening a gap between the top tax rates applied to business income and salaries would substantially exacerbate the existing problem because payroll taxes apply to earnings but exclude some business income.

Both the Trump and House GOP plans take a whack at this problem, but neither approach looks especially promising. The Trump plan provides little safeguard against abuse. It would require distributions from large pass-through businesses paying the 15 percent rate to bear a second level of tax, at the 20 percent dividend tax rate he proposes. This would make the combined tax rate on income of these businesses 32 percent (15 percent plus 20 percent of the 85 percent of income that can be distributed after paying the business tax rate.)

The Trump proposal does not, however, define a "large" business, leaving open the possibility that many medium-sized businesses might qualify as "small" for the purpose of avoiding the second level of tax. And Trump has proposed no rules to prevent employees from redefining themselves as independent contractors.

The House GOP plan would seek to prevent such tax avoidance by requiring pass-through businesses to pay "reasonable compensation" for tax purposes, so that the preferential rate would not apply to labor compensation of self-employed persons and active partners or S corporation shareholders. But it does not define reasonable compensation. This would presumably be spelled out in the actual legislation, the wording of which would no doubt be free of influence by K Street lobbyists.

raising taxes on Mom and Pop at the deli in order to give multinationals a break?

Even in the best of circumstances, then, the IRS would confront the same enforcement problem it currently faces in trying to determine compensation of S corporation shareholders for the purpose of calculating payroll tax liability – but with higher stakes because the tax savings per dollar of misclassified income would be 7.65 cents instead of 2.9 cents.

An alternative approach that could be easier to enforce would be to define how much of business profits is a return to capital and measure compensation as what's left. This could be done, but would hardly be simple. The return to capital could be imputed by multiplying the tax basis of the firm's capital assets by an assumed "normal" rate of return. These imputed capital returns would receive

the benefit of the reduced tax rate. Any additional returns would be deemed labor compensation or excess profits and subject to taxation at full ordinary income tax rates.

This approach – defining profits as the return to invested capital – would permit pass-through businesses to gain some benefit from a preferred rate on business income without providing a rate cut to employees who redefine themselves as independent contractors. It would not, however, benefit those pass-through businesses, especially small businesses, that are allowed under current law to expense their investments and therefore report no tax basis (and, thus, no return on invested capital). And it would not place pass-through businesses on an equal footing with C corporations, which would receive a rate cut on both the portion of their profits that represent a normal return to investment and the portion of their profits that represent "super-normal" returns.

IN FOR A PENNY…

This tortuous discussion has illustrated how difficult it would be to design a business-only tax reform, now that the group includes large numbers of both of pass-through businesses whose owners pay individual income tax rates on their business profits and C corporations that pay a separate corporate-level tax on their profits before paying taxable distributions to shareholders. Taxing highly substitutable forms of income at different rates always results in tax avoidance problems and causes economic distortions as taxpayers shift activities toward more lightly taxed forms. Rules to protect the tax base against these forms of gaming would be complex and imperfect.

If we're going to get serious about reform, then, everything points to the need for more far-reaching reforms. And I mean far-reaching. For example, a former Treasury official, Michael Graetz, would substitute a value-added tax for the income tax for most taxpayers, while retaining a corporate income tax at much lower rates and an individual income tax on high-income taxpayers to maintain progressivity.

Alan Viard of the American Enterprise Institute and I would go a different direction. We have developed a plan to replace a large portion from the corporate tax with a tax at ordinary income rates on accrued (not just realized) income of shareholders in publicly traded corporations. The economists Rosanne Altshuler and Harry Grubert have proposed a similar plan, but they would tax capital gains upon realization, with an added charge to offset the advantages of deferral, instead of annually as accrued.

Thinking somewhat smaller, Graetz and Alvin Warren have proposed eliminating the double taxation of corporate dividends, an approach that is also being considered by Senate Finance Chairman Orrin Hatch, the Utah Republican. The economist Alan Auerbach has proposed replacing the corporate income tax with a destination-based cash flow tax that would apply to all businesses. A variant of the Auerbach approach, albeit with major differences, has been adopted in a recent proposal by the House Republican Caucus.

While these approaches differ greatly, they all acknowledge the need to rethink the taxation of business income from the ground up. While incremental reforms are usually the better policy approach, the U.S. system for taxing business income has entered a zone of baroque complexity that defies efforts to sync it with both the way businesses are organized in the United States and the growing integration of the global economy. One way or another, something big has to give if we are to tap business income as an equitable and efficient source of taxes.

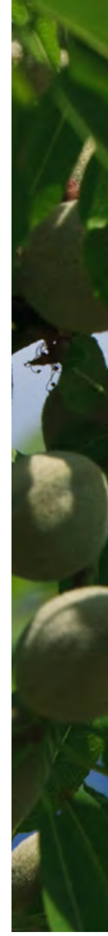
CALIFORNIA AGRICULTURE:

Navigating the Storms of Global Change

BY PHILIP MARTIN

American agriculture has long been driven by an awkward mix of free markets and regulation – with the latter a product of its own awkward mix of interest group politics, consumer protection and environmental concerns. California agriculture is hardly an exception.

Indeed, the state's giant farm sector offers a fascinating picture of markets and regulation at work, as California is buffeted by uncertainties about the cost and supply of desert-farming's two critical inputs: water and low-skilled labor. Arguably, the most surprising aspect of this never-ending tale is how resilient the industry has been in the face of rapid changes in politics, economics and the natural environment. Here's an update.



WATER ROULETTE

First things first. California is home to just 2 percent of the cropland in the United States, but accounts for an eighth of total farm sales because it disproportionately produces high-value commodities: fruits, nuts, vegetables and horticultural specialties such as nursery products. All told, California's production in 2014 included $30 billion worth of fruits and vegetables – almost as much as the $31 billion of total farm sales of the second-largest farm state, Iowa.

Even though a drought began in 2012, California farm sales have risen each year. In 2011, California's last "normal" water year, farm sales were $43 billion. Sales rose to $47 billion in 2012 and $54 billion in 2014, the worst year of the drought. How was this possible? About half a million acres were fallowed in 2014 for lack of water and cheap labor, but this was land that would have been planted in low-value field crops.

In some cases, farm revenues go up (or at least not far down) during droughts because smaller output results in higher prices. However, there were only modest changes in the state's major fruit crops during recent droughts: the production of oranges fell 9 percent in 2014, while the strawberry crop grew by 2 percent. Likewise, the production of most major vegetable crops in 2014 was similar to the 2011-13 average, while tomato acreage actually rose by 15 percent.

It can be argued that California agriculture's greatest strength, the state's vast irrigation infrastructure, makes production less dependent on rain in the short run. But this system is also a singular weakness, since the supply of water to feed the network seems to be increasingly volatile. California uses an average 33 million acre-feet of irrigation water a year. (An acre-foot – the amount of water it takes to cover an acre one foot deep – is 325,851 gallons, the consumption of a typical suburban household and lawn for a year.) In normal years, 60 percent of it comes from surface water and 40 percent from wells. In dry years, these ratios are reversed, as water pumped from underground aquifers replaces water not available from dams and canals.

In 2014, California became the last Western state to regulate groundwater pumping, enacting laws that create local groundwater sustainability agencies to register private wells, monitor the water-measuring devices that must be attached to pumps, and regulate pumping to avoid exhausting supply.

The drought ended (or at least paused) in Northern California last winter; precipitation was normal. Indeed, at the beginning of April, the state's 154 major reservoirs held almost 22 million acre-feet of water, 85 percent of normal, so that the various entities with contractual claims to water received half or more of their regular allotments.

The California water system is powered by snow accumulation in the mountains of Northern California, with snow melting into runoff from the slopes and moved from north to south via the Sacramento-San Joaquin River Delta. Three factors shape the longer term outlook for water. First, most climate-change models predict warmer winters that are less suited to California's snowpack-based water storage. If more precipitation falls as rain rather than snow during the winter months, the mountains store less water. And without a way to store the runoff, the production of water-intensive but low-value crops, such as alfalfa (a kind of grass) for dairy cows, is likely to shift out of state.

Second, the elasticity of demand for irriga-

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PREVIOUS PAGE: ROBYN BECK/AFP/GETTY IMAGES

DESIGN PICS INC/ALAMY

The elasticity of demand for irrigation water is slowly diminishing. An increasing portion of the water is used to sustain long-lived fruit and nut trees, which can't survive a long pause in watering.

tion water is slowly diminishing. This is because an increasing portion of the water is used to sustain long-lived fruit and nut trees, which can't survive a long pause in watering. Acreage planted in almonds, which normally need three to four acre-feet of water a year per acre, more than doubled since the mid-1990s, to 1.1 million. Meanwhile, land in cotton, which can be left fallow with only the loss of a single year's crop, declined 160,000 acres in 2015 – just one-tenth the acreage of 1980.

A third factor – one generally applauded by economists – is that more water can change hands in the private market. Water has traditionally been priced according to the cost of the government-built infrastructure that stores and delivers it – not, as competitive markets would have it, by the value of the water to the marginal user. Hence, most water for agriculture still costs relatively little. But with government-built contractual sources becoming less reliable and wells less productive as the water table falls, the (still thin) free market for water is recording sales that show some farmers are willing to pay $1,000 or more per acre-foot to keep trees alive. That, by the way, is three times as much as the big urban water agencies usually pay to obtain water for residential households.

Gov. Jerry Brown is proposing a tunnel complex to move water from Northern California around the Sacramento-San Joaquin

River Delta and into reservoirs and groundwater aquifers in the San Joaquin Valley, the site of over half of the state's agriculture. If the tunnels are built (at an estimated cost of $16 billion) and water users are given more discretion to sell their legal allotments to the highest bidders, farmers who grow rice (needing over five feet of water per acre) and other water-intensive (but low-value) crops in the Sacramento Valley may well choose to fallow their land and sell their water to farmers who grow more valuable crops in central California.

One big question, then, is whether the state should invest heavily in water infrastructure to minimize the adjustments required of agriculture in an era of unreliable supply, or whether it should encourage water sales that shift water to its highest-value use with the existing infrastructure.

Government infrastructure development and greater dependence on markets define the ends of the spectrum of policy options. The neither-fish-nor-fowl status quo creates uncertainty for farmers and urban water districts, some of which are acquiring water for more than the price likely to prevail in a free market for the foreseeable future. So simply making the options clearer promises to make the water system more efficient.

LABOR SUPPLY IN AN ERA OF NATIVISM

Labor use in California agriculture rose 12 percent over the past decade, reaching some 415,000 (about 2 percent of the Golden State's labor force) in 2014. This increase reflects expanded production of fruits and vegetables that require harvesting by hand. The tilt toward labor-intensive crops more than offset the impact of mechanization in a few other crops, notably raisins. Labor's share of production costs ranges from less than 5 percent in field crops to 40 percent in berries, with an average 30 percent in hand-harvested commodities.

Some 72 percent of primary farm workers had only one farm employer, suggesting far more stable employer-employee relationships than the follow-the-crop migrant stereotype portrays. Fewer than 10,000 farm workers had five or more farm jobs in 2014, although some of the workers employed in processing and logistics may have worked on multiple farms. Farm employers face several challenges, including a statewide minimum wage of $15 that takes effect in 2022. That's likely to pinch employers far more in rural California than in cities. The $15 minimum wage is projected to be less than half the median wage in San Francisco in 2022, but 70 percent or more in the San Joaquin Valley, where half the state's farm laborers work.

What will happen to farm jobs when the minimum wage is 70 percent of the median wage? The optimistic scenario is that the San Joaquin Valley's fruit bowl will employ fewer, but higher-wage and more-skilled, farm workers. The pessimistic scenario is that the San Joaquin Valley will follow the pattern of Appalachia, remaining home to low-productivity workers who lack the savings, information and skills to move elsewhere.

The major farm labor challenge today is finding workers to replace those who depart. Almost 90 percent of California crop workers were born in Mexico and over 60 percent are not authorized to work in the United States. Most are men (75 percent) who have settled here with their families, and most are poorly educated. These workers are also aging: they have a median age of 39, very close to the median of 42 for all U.S. workers.

The share of farm workers who were in the United States less than a year was 5 percent in the early 1990s; that figure rose to 20 percent in

Labor use in California agriculture rose 12 percent over the past decade, reaching some 415,000 in 2014.

JOHN MOORE/GETTY IMAGES

2000 when Mexico-U.S. migration peaked, and has since collapsed to less than 2 percent. Farmers are pursuing a variety of strategies to cope with labor supply uncertainty while waiting to see what happens next on immigration policy. These run the gamut from improving working conditions, to increasing productivity while reducing back-breaking effort with mechanical aids, to supplementing their work forces with legal guest workers.

Most farmers apparently believe that the supply of farm labor inside U.S. borders is not responsive to higher wages. Instead, they focus on improving the quality of life on the job and offering financial incentives to increase retention. In the past, many employers used sticks to reduce turnover, refusing to rehire seasonal workers who quit before the end of the season. Tighter labor markets make it harder for farmers to enforce such no-rehire rules, prompting more to offer bonuses that can add 5 to 10 percent to earnings for workers who stay through the season.

Stretching today's work force means raising productivity. And a lot of the potential for higher productivity is in the low-tech details.

EDWIN REMSBERG/AGE FOTOSTOCK

Workers harvesting by hand spend much of their time carrying produce down ladders to bins or to the end of rows to receive credit for their work. Smaller trees would mean fewer ladders and faster picking; hydraulic platforms would eliminate the need to fill heavy bags of fruit while standing on ladders. Slow-moving conveyor belts that travel ahead of workers harvesting berries, broccoli and other fruits and vegetables reduce carrying, making workers more productive and harvesting jobs more practical for older workers and women.

Under the Bracero "guest worker" program that lasted from World War II until 1964, most fruits and vegetables were packed in 50- to 60-pound field boxes, lifted by hand into trucks and taken to packing sheds. When there were fewer workers in the 1960s, incentives were created to switch to bulk bins that hold 1,000 pounds of apples or oranges along with forklifts to move the bins.

Note, too, that trees and field plants have been designed for maximum yields, not worker productivity. But dwarf trees, tall-stalk broccoli that requires less bending to cut and tabletop production of strawberries (already found in some European countries) could stretch the productivity of a smaller work force.

There is also the option of flat-out replacement of workers with machines. For most of the past century, the most labor-intensive farm activity in North America involved over 50,000 workers who harvested raisin grapes around the city of Fresno. Over a six-week period in August and September, workers cut bunches of green grapes and laid them in 25-pound batches on paper trays to dry into raisins in the sun, earning about a penny a pound.

Now, harvesting raisins is a race between sugar accumulation and spoilage. Allowing grapes to stay on the vine increases quality but raises the risk that September rains will damage the drying raisins. Raisins have traditionally been made from Thompson seedless grapes, but varieties such as Selma Pete achieve optimal sugar earlier in August, so that the canes holding bunches of green grapes can be cut and the grapes dried partially or fully into raisins while they are on the vine. A harvesting machine using rotating fingers knocks the partially dried raisins onto a continuous paper tray in the vineyard. Or the machine harvest is delayed until it can remove fully dried-on-the-vine raisins.

Two major factors are slowing raisin mechanization: farm structure and international trade. Most growers are over 60, have fully paid for their 20-40 acre vineyards, and are reluctant to make upfront investments in machinery when China, Iran and Turkey can already produce raisins cheaper.

The fourth adjustment strategy is to supplement the current work force with H-2A guest workers. The H-2A program was created in 1952 and was used primarily by sugar cane growers in Florida and apple growers along the East Coast until the mid-1990s. North Carolina tobacco farmers became the largest users after a group of retired government officials created an association that, for a fee, recruits workers in Mexico, brings them to the state and deploys them to farmers. This turnkey (and reliably available) H-2A labor force proved very attractive to farmers, especially as the workers gained experience by returning year after year.

Receiving government certification to employ H-2A guest workers requires employers to satisfy three major criteria. First, farmers must try to recruit Americans and provide good reasons why those who applied were not hired. Many farmers do not want to hire legal U.S. residents, since each one who promises to work blocks the admission of an H-2A guest worker. Indeed, farmers who are convinced that most U.S. workers will not remain for the entire season often discourage local workers from applying.

There is also the option of flat-out replacement of workers with machines.

Second, farmers must provide free housing to H-2A guest workers and out-of-area U.S. workers. Housing is a special concern in California, where most labor-intensive agriculture is close to cities with shortages of affordable housing and restrictions on building more. During the Bracero era, most farm workers were housed on the farms where they worked, which meant low (or no) housing costs and no commute to work. A combination of tougher housing regulations and union hostility prompted most farmers to eliminate this housing in the 1970s, and today there is often community opposition to creating it – as demonstrated by an April 2016 arson fire in the town of Nipomo that destroyed dwellings meant to accommodate over 100 H-2A guest workers.

Third, the law requires that H-2A guest workers do not "adversely affect" American workers. The government enforces this requirement by setting a super-minimum wage called the Adverse-Effect Wage Rate, which

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was $11.89 an hour in California in 2016 – $1.89 more than the state's regular minimum of $10 an hour.

Now, all workers must be paid the AEWR, but farmers do not have to retain workers who are unable to pick fast enough to earn it. So the effect is to weed out slower pickers. Farmers selecting from a vast pool of eager foreign workers are more likely to find ones who can satisfy productivity requirements than if they recruit from the relatively small pool of U.S. workers willing to fill seasonal farm jobs.

IMMIGRATION UNCERTAINTY

California's seasonal farm labor market has been a revolving door for the past century, attracting newcomers who stay in the seasonal farm work force a decade or two before moving to non-farm jobs. Their American-raised children shun farm work. Nothing new here: California history is a story of waves of newcomers – Chinese, Japanese, Filipinos, Dust Bowl Arkies and Okies, Mexicans – who passed through the farm labor market in a generation or less.

In the early 1980s, farm labor unions were weakening and wages were falling as the share of unauthorized workers rose toward 20 per-

In the short term, the dominant response has been expansion of the

cent. A compromise included in the Immigration Reform and Control Act of 1986 aimed to reverse falling farm wages by legalizing unauthorized farm workers already employed, but imposing sanctions on employers who knowingly hired additional ones. Farm labor costs were expected to increase, as farmers raised wages to retain newly legalized workers or built housing to hire legal H-2A guest workers.

But the 1986 act backfired: it led to more rather than less illegal immigration. Farm wages fell in the 1990s and unauthorized workers spread to all commodities and states, while H-2A guest worker admissions dropped below 20,000. As the share of unauthorized workers rose toward 50 percent in the mid-1990s, farmers asserted that there was a shortage of legal U.S. workers to harvest their crops. They claimed agriculture needed an "E-Z guest worker" alternative that cut through the red tape, but in the face of union opposition, Congress declined to act.

The election in 2000 of presidents Fox in Mexico and Bush in the United States spurred farm employers and worker advocates to propose the Agricultural Job Opportunities, Benefits and Security Act (AgJOBS), another effort to legalize unauthorized farm workers and make it easier to hire guest workers. But, once again, the farmers' lobbying efforts failed: AgJOBS was never enacted.

For a while, farmers thought help was on the way from an unexpected direction. In November 2014, President Obama issued an executive order creating the Deferred Action for Parents of Americans and Lawful Permanent Residents (DAPA) program. If implemented, DAPA would have legalized four million unauthorized parents with legal U.S. children, including up to 500,000 farm workers, giving them renewable three-year work permits. But Texas and 25 other states sued to block implementation, arguing that DAPA was an unconstitutional overreach of executive power. Conservative federal judges agreed, and, on a 4-4 vote in June 2016, the Supreme Court let stand lower court injunctions blocking DAPA. This effectively ended the efforts of the Obama administration to ease the legal plight of unauthorized foreigners – and indirectly, stabilize farm labor supply.

H-2A program, which has doubled in size nationally since 2007 and quadrupled in California.

WHAT NEXT?

Neither drought nor labor shortages have deterred farmers from planting more labor-intensive commodities, which explains why farm sales and farm employment have been rising. Farmers complain of labor shortages that force them to leave food in the field. But this is a common cost of doing business: farmers regularly leave crops unharvested because of low prices and/or poor quality. Rising farm sales suggest that any crop losses from labor shortages are very localized.

AgJOBS would have locked the status quo in place, leaving agriculture with low-skilled and foreign-born workers. The absence of immigration reform has forced market adjustments – various measures to increase labor supply (domestic and foreign), to increase labor productivity and to mechanize more operations. And a continuing political stalemate over comprehensive immigration reform would accelerate this process.

In the short term, the dominant response has been expansion of the H-2A program, which has doubled in size nationally since 2007 and quadrupled in California. Over 10 percent of long-season jobs on crop farms nationwide and 3 percent of California crop jobs are now filled by H-2A workers, almost all from Mexico. If all H-2A workers were allowed to remain in the country for three years, the source of farm workers could well shift from Mexico to Asia. That would bring California back to the future, as when Chinese workers dominated the California harvests in the 1880s.

Plainly, this is a period of great uncertainty for agriculture in California – uncertainty largely driven by forces (political and natural) beyond the state's control. What is emerging, though, is a leaner, less tradition-bound industry that depends less on protective economic regulation and more on market forces.

That is good news for American consumers who rely heavily on California for a host of farm products. And it is good news for those of us who want the hundreds of rural communities dependent on California agriculture to avoid the sort of rapid dislocation that devastated Rust Belt manufacturing in the 1980s and 1990s.

In the Trenches with Pension Reform

BY THOMAS J. HEALEY

ILLUSTRATIONS BY ERIC HANSON

For lack of a crisis (defined by Merriam-Webster as "an unstable or crucial time or state of affairs in which a decisive change is impending"), the nation's problems with underfunded state and local public pension systems continue to get kicked down the road. It seems that the public doesn't believe that the aforementioned "decisive change" really is impending. And with some reason: even Illinois, the state with the largest pension deficit, is not expected to absolutely, positively exhaust its ability to cover its pension obligations in the next decade. But, needless to say, fiddling while Springfield smolders will require some serious firefighting later on.

Absent deadline pressure, elected officials in states with major pension problems have been only too willing to hand off the hot potato to the next group of politicians – or maybe, the one after that. New Jersey affords a classic example. For decades, Republican and Democratic administrations alike failed to make required contributions to the public-employee pension system,

landing New Jersey in dubious company. According to a report by JP Morgan Chase in June 2014, New Jersey joined Illinois, Connecticut, Hawaii and Kentucky in having debt and retirement benefit costs that, when properly funded, exceeded 25 percent of their states' revenues.

Actually, playing political football (or kick-the-can or hot-potato) with public-employee retirement programs is already leading to big trouble, albeit in unexpected places. Just look at Flint, Mich., where the city's battered finances infamously drove officials to cut corners by compromising the safety of its drinking water. As *Barron's* put it earlier this year, "it's not a water crisis; it's a benefit crisis. Flint's money shortage came about largely from high municipal pension obligations and a retiree health plan that could not be properly funded after the biggest taxpayer, General Motors, moved out."

Playing political football (or kick-the-can or hot-potato) with public-employee retirement programs is already leading to big trouble, albeit in unexpected places. Just look at Flint, Michigan.

Or consider Detroit, where the nation's largest municipal bankruptcy (July 2013) was precipitated in large part by rampant debt from pension obligations. Even after substantial benefit cuts, current and future retirees are entitled to pensions worth more than twice the city's current income tax receipts.

That said, in most places the public employee benefits crisis will be recognizable while it's still possible to resolve it without wrenching sacrifices. Even in New Jersey, a dawning recognition of the severity of the problem gave birth to an aggressive reform initiative, though the growing pains around that effort show how even the most well-intentioned efforts can be stymied by partisan politics and voter apathy.

CHALLENGE: CHANGING THE STATUS QUO

How imminent does a funding crisis have to be for the public to accept the need for decisive change? The nation's Social Security system serves as a sobering example. It wasn't until that mainstay program drew within 40 days of running out of cash in 1983 that the public's attention became focused on the problem and elected representatives felt sufficient heat to pass legislation that reduced some voters' future benefits.

Public pensions are subject to the same unforgiving laws of apathy. To the vast majority of taxpayers, actuarial terms like depletion dates and unfunded liabilities evoke a desperate urge to change channels – not a sense that change must come soon.

New Jersey is again a textbook case. In a period of 18 months, New Jersey's Pension and Health Benefit Study Commission, a bipartisan blue-ribbon panel appointed by the governor, issued a series of reports setting forth the hard facts. First and foremost, two decades of missed payments and unfunded benefit expansions had dug the pension plans into a $44 billion actuarial hole by July 2015, up from $40 billion just 12 months earlier.

THOMAS J. HEALEY, a senior fellow at Harvard's Kennedy School of Government, coordinates the work of the bipartisan New Jersey Pension and Health Benefit Study Commission.

But wait; the reality is even worse: the shortfall under new reporting conventions from the Government Accounting Standards Board now stands at $95 billion.

Closing a $44 billion gap (never mind the $95 billion) would have required each of the state's 3.2 million households to sit down and write a check for nearly $14,000. The reports also stressed that the bill for public employees' health benefits would jump from $3.1 billion in 2015 to $3.7 billion in 2016 and was already the third costliest in the nation per employee. Gilding this poisonous lily, the commission further pointed out that with benefit costs growing faster than state revenues, any attempt to fully fund promised benefits would lead to massive tax increases or draconian cuts in public services – if not both.

There are still people around who believe the stock market will manage what taxpayers won't. Indeed, the long-term return on equities (1950-2009) was a fabulous 7 percent after accounting for inflation. Pick your endpoints with careful attention to hindsight and the light at the end of this tunnel becomes truly dazzling: from 1982 to 1999, the average annual return on the S&P 500 was 18 percent!

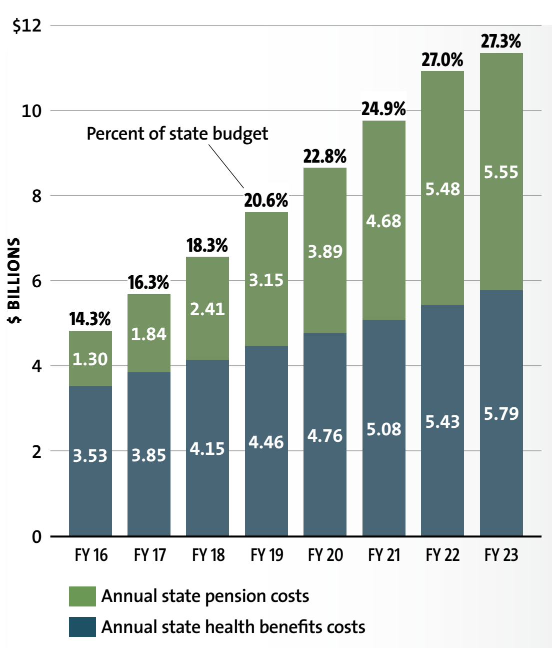
But as the fine print on the mutual fund prospectus says, past performance is no guarantee of future performance. A more sober Moody's Investor Services projects that unfunded pension liabilities will grow by at least 10 percent in fiscal 2016 "under even our most optimistic return (5 percent return) scenario."

ENGAGING THE UNIONS

Hence, without a crisis to focus the public mind, the onus is on reformers to develop a game plan for engaging major stakeholder groups that is at once firm and fair (OK, if you insist: balanced). That means toughing it out with public-employee labor unions that have a great deal to lose from any credible reform. This was the case in Rhode Island, which faced what was considered the country's worst pension mess four years ago. The state's treasurer, Gina Raimondo (now the governor), developed a sensible, sweeping reform program that emphasized "the math, not the politics," as she diplomatically put it. Raimondo, a Democrat, pressed her case through a "Truth in Numbers" report that meticulously spelled out for taxpayers the enormity of the state's challenge and the cost of failing to act.

But this appeal to the better side of human nature didn't prove sufficient on its own. The public-sector unions took Raimondo to court (twice). But she was undaunted, and even without the backing of organized labor managed to prevail by communicating to citizens and legislators that her reform proposal – though not without demanding sacrifice – was

PRE-REFORM STATE BENEFITS SPENDING



SOURCE: The authors

evenhanded. Tellingly, that communication effort capitalized on the fact some Rhode Island municipalities had been driven to insolvency by their inability to control or fund their own benefits programs.

In New Jersey, the Governor's Study Commission rolled out its own truth-in-numbers accounting in three extensive reports, beginning in the fall of 2014. Among an avalanche of numbers, a few stood out: under a business-as-usual scenario, state-funded pension and health benefits would nearly double by fiscal 2023, gobbling up more than 27 percent of the state's budget and crowding out essential government services from education to social services to public safety. That 27 percent figure was almost in the rarified league in which Flint was playing: pensions and health benefits reached one-third of that crippled city's general fund in 2015 and were expected to hit an even more crippling 37 percent by 2020. The New Jersey commission concluded that the state could safely afford to spend up to 15 percent of its total budget on public-employee benefits, but to go beyond that level would dangerously stretch New Jersey's financial fabric.

The commission made that 15 percent threshold a baseline for its efforts to sketch out needed reforms. While the figure surely varies a bit from state to state based on how they allocate revenue and funding obligations between state and local governments, that general approach – determining the threshold of benefits spending that a state can sustain and adjusting pension and health benefits accordingly – could serve as a starting point for other states and localities.

MINIMIZING THE IMPACT OF CHANGE

Notwithstanding the math, the commission knew its proposal would have to be perceived as fair by the public. To that end, it developed a comprehensive program with the goal of maximizing savings to taxpayers while eschewing draconian benefit cuts. The reform package was built around five key goals:

- Freezing existing pension plans while protecting all benefits earned by employees to date.
- Creating a fair and affordable new retirement program going forward.
- Realigning public-employee health benefits with those offered in the private sector.
- Applying a unified state and local approach to benefits funding.
- Blocking backsliding on reforms by amending the state's constitution.

Freezing the pension plans means closing them to new members and eliminating further accrual of benefits to existing members. At the same time, the commission's approach assured all plan members that they would not lose any credit for service before the freeze and that retirees' pension checks would be unaffected.

This would set the stage for creating a new retirement program for active employees – a cash-balance plan, which the commission thinks is the most suitable prototype for New Jersey. Cash-balance plans are hybrids of classic defined-benefit and defined-contribution retirement programs [think of 401(k)s], with each employee's benefits as an account balance that grows each year through employer and employee pay-credit contributions. These accounts are regularly supplemented by credits at rates that effectively require employers and employees to share the risk on investment returns (in contrast to the state bearing all investment risk, as exists with current defined-benefit plans).

On the health benefits side, the commission was confronted with a system created long ago in smoke-filled rooms: rich coverage, combined with eligibility rules that encouraged

gamesmanship and double-dipping. The commission focused on restoring fiscal order by realigning the benefits of active employees with gold-level coverage under the federal Affordable Care Act.

The system would work like this: retirees would use retiree reimbursement account funding from the state to secure health coverage through private exchanges that offer a wide range of competing plans. Early retirees would receive funding sufficient to purchase coverage comparable to that provided to ongoing employees with the option to purchase broader coverage at their own expense. Medicare-eligible employees would receive funding sufficient to purchase what is known as a Medicare Advantage/Prescription Drug plan – care from an organization providing broad, one-stop health services.

While the out-of-pocket costs of these plans are somewhat higher than the token outlays under the current state plans, the switch would save so much money over the status quo that the state could supplement the accounts with sufficient cash to offset the increase in average out-of-pocket expenses, while still yielding substantial savings. Overall, these reforms would reduce the state government's health benefit costs by about 30 percent.

Unfortunately, the fiscal hole from pension underfunding in the past was so deep that the increase in funding needed to cover even benefits earned *prior* to the freeze, along with the less-costly cash-balance plans going forward, would exceed the substantial savings from health benefit reforms. To close this gap, the commission pondered a variety of approaches – including a "millionaire's tax" on the wealthiest citizens, selectively cutting services, or putting New Jersey Turnpike and state lottery employees into the pension pool.

Computer simulations suggested, however, that none of these fixes would be adequate to the task. Instead, the commission advanced a unique funding mechanism: using some of the anticipated $3 billion in savings from health insurance reform at the local government level to reduce the state's funding burden. The idea here is to ask localities to reassume responsibility for benefits that, over the years, had migrated to the state's side of the ledger. Since only some of the savings would be used up in the process, this change would be cost-neutral to municipalities – meaning taxpayers could actually see a reduction in their property taxes, which are the highest in the nation.

It's likely other states with pension woes could put this multipronged approach to effective use. More specifically, by moving costly public-sector health benefit plans in the direction of more cost-effective (though still high-quality) coverage in the private sector, governments could help put wobbly pension plans on a sound fiscal track.

IS ANYONE ACCOUNTABLE?

Regardless of how fair the plan, reformers must contend with this inconvenient truth: elected officials like to promise benefits to public employees but don't like asking voters to pay for them. How else to explain that, according to Robert Inman, the Wharton finance professor, there are currently $3 trillion of unfunded pension liabilities at the state level and $400 billion at the large-city level? That comes out to roughly $10,000 per American citizen. Chicago – often held up as the poster child for pension irresponsibility – has chalked up unfunded liabilities that amount to 10 times its annual revenues, while Illinois is the most poorly funded pension state in America.

New Jersey fits comfortably into this narrative of elected officials behaving badly. For years, the state granted pension benefits it could afford only under wildly optimistic assumptions about investment returns. When reality fell short of those assumptions, administrations from both political parties failed to either fund the accruing liabilities or to reform the underlying benefits system.

ability is almost nonexistent. New York is the only state I'm aware of in which a third party (the elected state comptroller) has independent power to appropriate money to fund pension obligations. Yet, though this model ensures high funding levels, it also has contributed to New York's extremely high benefit

The question is how to reform a political culture dedicated to dealing with today's problems tomorrow and tomorrow's problems never.

In one memorable example from the early 2000s, the Legislature saw fit to *enhance* retirement benefits going forward while finding a way to sidestep obligations that already existed. The state's efforts to conceal this fiscal sleight of hand in the small print of bond disclosures eventually drew the ire of the U.S. Securities and Exchange Commission. The result of two decades of this kind of gamesmanship is that New Jersey has one of the worst pension-funding gaps in the country and has suffered repeated downgrades in the state's credit rating as the cost of benefits outstripped its ability to fund them.

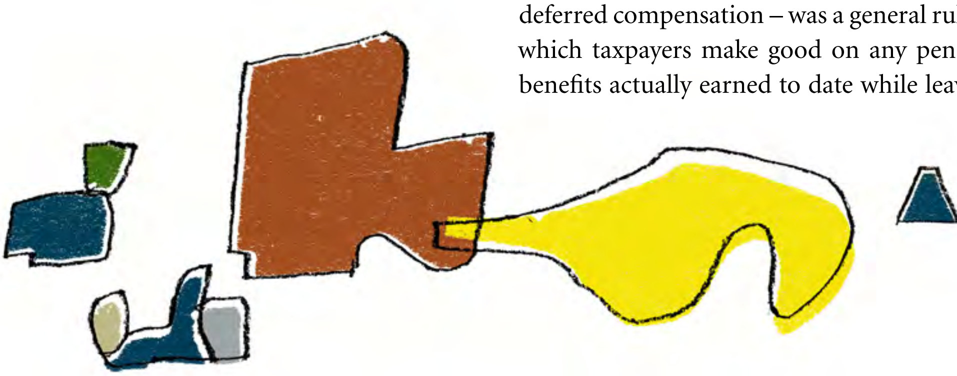
New Jersey is hardly alone in having its elected officials victimize both public employees and taxpayers in this manner. The question is how to reform a political culture dedicated to dealing with today's problems tomorrow and tomorrow's problems never.

One obvious focal point for reform is accountability. While federal law demands accountability from the private sector (where the Department of Labor has a strong enforcement tool in the Employee Retirement Income Security Act), public-sector account-

costs and taxes, and creates a dynamic in which the legislature has no responsibility for comptroller-mandated appropriations and the taxes required to pay them, while the comptroller has no responsibility for the legislated benefits requiring the appropriations.

It's fair to ask whether public employees even want a world in which pension accountability is well defined, as opposed to one in which elected officials have an obligation to fund mandated benefits in perpetuity regardless of cost. It's revealing that in New Jersey, public employees' reaction to evidence showing an irrefutable need for reform was to press the Legislature to put a constitutional amendment on the ballot that would mandate full funding of pension benefits and guarantee the right of most current employees to continue to earn future benefits under no-worse-than-current terms without creating a source of funding, effectively precluding fiscally meaningful pension reform for a generation.

After long deliberation, the commission concluded that the sweet spot – doing justice to both taxpayers and public employees victimized by elected officials promising huge deferred compensation – was a general rule in which taxpayers make good on any pension benefits actually earned to date while leaving



the terms under which benefits would be earned in the future subject to change. Taking away a benefit that has actually been contractually earned would be unfair, even if this means that taxpayers must bear the burden of irresponsible government decisions made in the past.

Benefits promised but not yet earned, however, are another matter. For one thing, something has to give. For another, protecting future benefits from change would prevent voters from holding today's elected officials accountable for ensuring that funds in the existing budget are being spent in a way that best promotes the public welfare.

So-called non-forfeitable rights provisions, which seek to dictate the terms under which certain classes of employees will earn benefits in the future, are the ultimate manifestation of the kick-the-can-down-the-road mindset. These provisions permit one set of legislators to escape responsibility for granting a benefit without paying for it and a subsequent set to duck their fiscal responsibilities with the excuse that their hands were shackled by their predecessors.

LESSONS LEARNED

Because pensions are about numbers while pension reform is about politics – two different universes with different time horizons – a state's constitution can be a useful tool for reconciling disparities. It can also ensure that the terms of any compromise can't easily be undone by the state's next chief executive and elected officials. As previously stated, though, any constitutional provision needs to be limited to protecting for benefits earned to date. It must also provide assurance that the government's overarching duty – the general welfare of state residents – comes first. What must be avoided are constitutional provisions, such as those in Illinois and Michigan, that give public employee benefits first claim on the public fisc and limit the state's sovereign power to adjust its obligations to overarching state needs.

Beyond constitutional support, having a strong public official who is widely respected at the helm of pension reform can be a huge tactical advantage. Raimondo's success against the odds in Rhode Island persuasively drives home the point. It also helps, of course, if a governor and legislators have a constructive working relationship – which in these partisan times too often means being from the same political party.

The fact that persistent officials in a handful of states are prevailing over inertia and hand-wringing is a hopeful sign. But in many more states with ailing systems, leaders need to accept the personal risks associated with doing the right thing for public employees, retirees and taxpayers.

Note, too, that Rome was not built in a day. Consider: while efforts to achieve larger systemic reforms have been stymied to date, New Jersey's latest budget does reflect some $150 million in health benefit savings championed by the commission. It also includes the first steps toward embracing the commission's central premise – that savings on health benefits are the optimal source of funding for closing the gap on pension obligations.

Clearly, this nation's pension imbroglio can no longer be relegated to the back burner. Well, perhaps not so clearly. But it certainly shouldn't be: unfunded liabilities are a disaster in the making that lurk behind a gray wall of numbers, graphs and pie charts. As Flint and Detroit found out, expecting the problem to recede with an uptick in the stock market or the imposition of a new tax or the wave of a consultant's wand is simply delusional.

The Dragon Stretches Its Wings

BY ESWAR PRASAD

n October 2015, 12 countries from Asia and the Americas reached an agreement on the Trans-Pacific Partnership (TPP). The trade deal, one of the largest in more than two decades, included most of the Pacific Rim – but not the largest economy in Asia.

The subtext of the agreement was clear. With China's rising economic and political clout in Asia and beyond, this was a way for the United States and its allies to circle the wagons. If the TPP was to be ratified by national legislatures in all the member countries – which later proved a bridge too far – it would represent an important achievement for Japan and the Obama administration in creating a modest, although mainly symbolic, counterweight to China's expanding influence.

Within China, opinions about the TPP ranged from measured to strident. Reform-minded officials in Beijing took a positive attitude, recognizing that outside pressure often helps to overcome domestic opposition to change. Just as China used outside pressure in the form of the conditions for joining the World Trade Organization in 2001 as a spur for domestic restructuring, an aspiration to become a member of the TPP could help dislodge some of the opposition to state enterprise reforms.

The debate took on a sharper edge, however, when an economist from the People's Bank of China (China's central bank) estimated that lost trading opportunities could initially knock half a percentage point off the country's economic growth rate. Reacting to this estimate, Sheng Laiyun, a spokesman for China's National Bureau of Statistics, said that China could take countermeasures.

Beijing has, for instance, been pushing its own trade pact, the Regional Comprehensive Economic Partnership (RCEP), a proposed 16-nation free-trade area that would encompass 3.4 billion people. The RCEP would comprise the 10 nations that constitute the Association of Southeast Asian Nations (ASEAN) plus China, India, Japan, South Korea, Australia and New Zealand. It was seen as a prominent alternative to U.S. plans, but has since lost some of its momentum.

The TPP is dead, thanks to the U.S. election. However, China remains concerned that similar initiatives could result in excessive U.S. influence and the sidelining of China in the process of rewriting the rules governing global trade.

While pushing to increase its economic reach through trade, China began to realize that international finance would be the new and more important battleground for wielding geopolitical influence. Recognizing that the renminbi (RMB) did not yet have the potential to be a reserve currency, China adopted a complementary strategy: using its financial firepower to increase the economy's international influence, with the RMB riding on the back of these efforts.

FLEXING ECONOMIC MUSCLES

In the 2000s, as China's financial clout and foreign exchange reserves grew, it began using those resources to increase its sphere of influence, offering investment and various forms support to other economies. The recipients of much of this largesse were its neighbors in Asia, as well as a number of economies in

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PREVIOUS PAGE: IMAGINECHINA

REUTERS/CAREN FIROUZ

Africa and Latin America possessing natural resources that China craved for its manufacturing machine. This led to worries that China was simply exploiting the countries to which it was giving aid or loans – and, even worse, that the money was propping up corrupt regimes, enriching venal officials and creating a debt burden that would come to haunt those countries.

Over the past decade, China has accounted for a cumulative investment of $220 billion in sub-Saharan Africa, as well as $120 billion in South America (compared with about $60 billion in the United States). Moreover, China has been open to providing money to countries that have been shut out from borrowing in private financial markets and are loath to turn to Western institutions or countries.

In Ecuador, whose president, Rafael Correa, aligned himself with the populist government in Venezuela, Chinese money has financed dams, roads, highways, bridges and hospitals. In return, China has, by some estimates, locked in nearly 90 percent of Ecuador's oil exports, revenues which go largely toward paying off those loans. Ecuador's former energy minister said, "The problem is, we are trying to replace American imperialism with Chinese imperialism."

There is a vibrant and far-from-settled debate about whether Chinese money has been a net benefit for recipient countries. A recent, provocative study by researchers at the University of Sussex argues that Chinese aid to

African states increases the risk of civilian abuse by giving their leaders access to funds with which to carry out violence against political opponents, thereby perpetuating the regimes' hold on power.

On the other hand, a study by the research organization AidData has a more positive tone. Still, even this study finds that commercially oriented forms of Chinese state financing are directed mainly to countries rich in natural resources and with higher levels of corruption.

While the academic debate rages, China has moved to strengthen its economic relationships in Africa, including with some regimes that are pariahs in the eyes of the West. In December 2015, soon after President Xi's visit to Zimbabwe, that country's government proudly proclaimed that the RMB would become legal tender within the southern African nation. But in an economy ravaged by hyperinflation and economic mismanagement, the government's sanctioning of the RMB's status as an official currency is unlikely to have much impact, let alone any international implications. Earlier in 2015, the government had euthanized the ailing domestic currency, allowing Zimbabweans to exchange bank balances of up to 175,000 trillion Zimbabwean dollars (that is, indeed, trillion with a "*t*") for $5.

President Xi's visit to Africa culminated with a grand declaration at a summit in Johannesburg that China and Africa were "good friends, good partners, good brothers." To say that African leaders welcomed all of this warmly would be an understatement. China offered not just soaring rhetoric but cold cash as well – $60 billion in grants, loans and capital for various development funds. Not only that, China also wrote off a number of loans it had made to poorer countries (including $40 million to Zimbabwe). And in words that were no doubt music to the ears of the leaders, President Xi made China's policy of noninterference crystal clear: "China supports the settlement of African issues by Africans in the African way."

REUTERS/RAMZI BOUDINA

China's initiatives in Africa have not directly elevated the RMB, and China's government has not pushed hard for these countries to use RMB in their transactions. Nevertheless, the stronger trade and financial relationships that many countries in the region have with China are generating greater interest in using RMB to diversify foreign exchange reserve portfolios and for trade settlement.

The new Great Mosque in Algiers, being built by the China State Construction Engineering Corporation (January 2016).

RELATIONSHIP RESET

China's investments and aid to Africa and Latin America, which (as noted above) have ramped up over the past decade, strengthened China's economic and political linkages with countries in those two regions. In other quarters of the international community, however, such endeavors were not viewed favorably. A reset in the nature of its economic relationships would clearly help China realize its ambitions without generating as much pushback, eventually paving the way for broader adoption of the RMB. The Chinese are quick learners, adjusting strategy when circumstances demand it. They have grown more savvy and disciplined in their approach to international engagement, using a wide range of tools.

China is now employing a multipronged approach to helping set the global agenda. First, it is gradually increasing its influence in international financial institutions. This allows it to change the rules of the game from the inside. Second, it is setting up multilateral institutions where it gets to call the shots – and serves to subtly catalyze changes in the existing institutions. Third, it is partnering with other like-minded countries to set up institutions that are meant to build trust and stronger economic linkages with countries

RICHARD LEVINE/AGE FOTOSTOCK

that it sees as partners as well as potential competitors. Fourth, it is using other arms of the state, including development agencies and state-owned banks, to increase its global financial reach.

FRIENDLIER MULTILATERALS

The first element of China's global strategy involves increasing its influence in existing multilateral institutions. At the IMF, the granddaddy of international financial institutions (IFIs), China's capital contribution of $42 billion gives it a 6 percent share of the overall capital pool and a corresponding voting share. The United States has a 16 percent voting share, while Japan's share, like China's, is 6 percent. At the World Bank, another major IFI, China has a voting share of 5 percent, compared with 16 percent for the United States and 7 percent for Japan.

The major IFI in Asia is the Asian Development Bank (ADB), which has a capital stock of about $150 billion. Japan and China have been jostling for influence at this institution for a long time. Japan has a voting share of 12.8 percent, making it the largest shareholder. The United States' share – almost 12.8 percent – is by design a smidgen less than that of Japan to emphasize the Asian leadership of the institution. China's share is 5.5 percent, while India's is 5.4 percent, underscoring how even decimal-place differences in voting power are freighted with symbolism at such institutions.

The irony of Japan's maintaining a larger voting share in international institutions has certainly not gone unnoticed by China. Even at the IMF, where recent reforms increased the voting shares of China and other emerging-market economies, Japan remains ahead symbolically, with a voting share of 6.18 percent compared to China's 6.12 percent.

China has also been gradually marking its presence in less prominent IFIs around the world. It has established beachheads in the African Development Bank, the Caribbean Development Bank and the Inter-American Development Bank, although, as a non-regional member, its direct contributions to these institutions sum up to only $1 billion.

Africa has more trade with the European Union as a whole, but China is the single country that accounts for the largest share of Africa's trade. For many Latin American countries, China has become the largest export market. So China's presence in these regional institutions allows it to start playing a role – modest at first, but easily scalable – in the economic governance of these regions.

How far is China willing to go to engage the existing IFIs on their own terms, rather than seeking changes in those institutions when it is signing up? Consider China's accession to the World Trade Organization in 2001.

After long and difficult negotiations, China agreed to most of the standard conditions for WTO membership, which gave it much greater access to export markets. During its push to increase exports in the 2000s, China benefited greatly from this improved access.

But the government went no further toward integration than the rules required. Foreign investors in China found themselves stymied at every turn by rules that limited their operations, forced them to share technology with local firms and allowed them to enter certain industries only if they partnered with domestic firms. And now that China is a large and powerful member of the WTO, it can play a greater role in influencing how the organization defines and applies rules for international trade.

There is a starker and more interesting example illustrating how China is willing to seem open to compromise when it joins existing institutions. In January 2016, China became a member of the European Bank for Reconstruction and Development (EBRD) with a capital contribution of $400 million, less than 1 percent of the total capital base.

What is particularly interesting about EBRD membership is that China agreed to sign on to the institution's commitment to Western-style governance. The very first article in the EBRD's charter states that its members are "committed to the fundamental principles of multiparty democracy, the rule of law, respect for human rights and market economics."

It is striking that China signed on despite the inconsistency between the EBRD's mandate and the tenets of the Communist Party.

It is striking that China signed on despite the inconsistency between the EBRD's mandate and the tenets of the Communist Party, and despite qualifying for only a marginal voting share at the institution. One interpretation is that China is willing to appear reasonable and open to compromise when it seeks membership in existing international institutions. It then strives to subtly influence these institutions from the inside, rather than through brute economic or political force from the outside.

So far, China has made the majority of its capital contributions to the IFIs in hard currencies such as the dollar, the euro and the yen. Now that the IMF has designated the RMB as an official reserve currency, China will no doubt be able to legitimately make further capital contributions in its own currency. As China's economy grows and its role in existing

IFIs becomes more prominent, the RMB will play a bigger role in the capital bases and financial operations of these institutions.

THE END RUN

While it was signing up for membership in multilateral institutions around the world, China was frustrated that, in the international and regional organizations that it most cared about, it still had second-class status. Although all countries, including the United States, had agreed in 2010 to a reworking of IMF voting shares to give China and other emerging markets more voting power, the agreement had to be ratified by national legislatures. Virtually all major countries had done so by 2014, but in the United States this issue became entangled in the political deadlock between the Obama administration and the Republican-controlled Congress. The agreed-on changes only came into effect in January 2016 – and by that time, the new voting shares were already lagging behind economic reality as they had been based on GDP and other economic variables from a few years prior.

Even in its own backyard, China was not attaining the status it felt it deserved. At the Asian Development Bank, the major multilateral institution in Asia, China had been unable to dislodge Japan from that country's position of prominence.

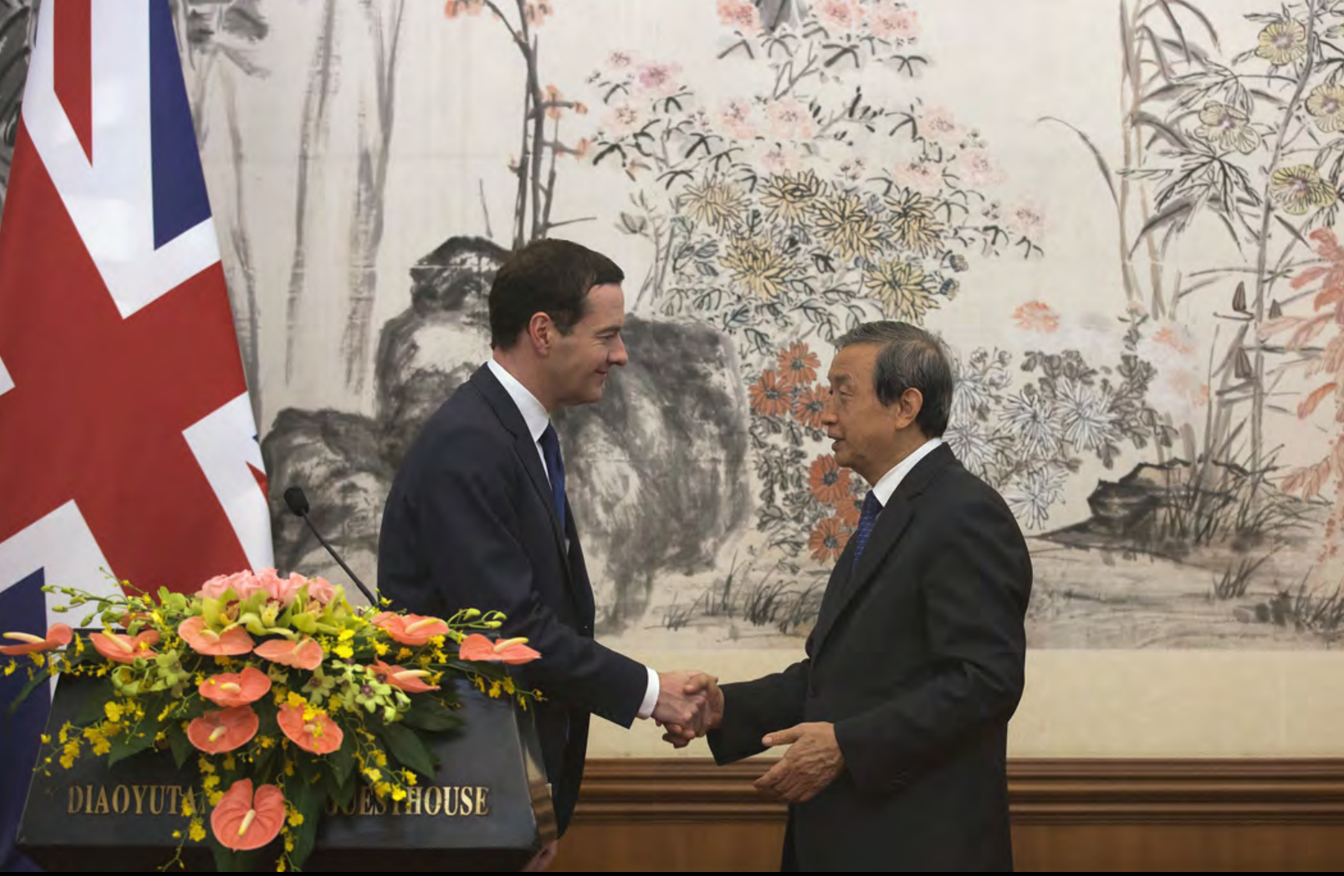
China decided it needed to take a more active role in international finance, which could best be done by bankrolling its own institutions. Its leaders recognized that China could put its money to good use by financing infrastructure projects in Asia – a crying need for countries in the region that lacked the funds to undertake large investments. It would be logical for other countries to sign up for such an institution, where they would have a more prominent role than in other IFIs and could also obtain financing for vital infrastructure projects. Thus was born the idea for the Asian Infrastructure Investment Bank (AIIB).

The United States was wary of China's attempts to create alternatives to the existing multilaterals. With a proposed initial capital of $50 billion that could be increased to $100 billion, the AIIB would clearly be a significant competitor to the ADB and the World Bank. (These latter two institutions together have a capital base of about $400 billion.)

Recognizing that it could not stop other countries in the Asian region, most of which are either small or not advanced, from signing up, the United States decided its best strategy was to undermine the legitimacy of the AIIB by asking whether the governance and lending practices of a China-led institution would mirror China's weak legal and institutional framework. A key element of this strategy was making sure that its advanced-economy allies would not sign up.

The United States was keen to corral not just the major advanced economies such as the Eurozone, Japan and the U.K., but also other advanced countries including Australia and South Korea. However, China had a secret weapon in its arsenal: Jin Liqun, an internationally respected official, well-known master strategist and articulate speaker who does not mince words as a forceful advocate for China's positions. Jin, who has extensive international experience working in multilaterals, including the ADB and the World Bank, was assigned to lead the charge in setting up the AIIB.

Despite Jin's lobbying efforts, it appeared that the United States was winning the diplomatic battle. In October 2014, when a ceremony was held in Beijing to sign a memorandum of understanding to launch the AIIB, just 21 countries had joined. Other than China and India, none of these was a large



REUTERS/ANDY WONG/POOL

Britain's Chancellor of the Exchequer George Osborne with China's Vice Premier Ma Kai.

For the U.K., a strong relationship with China was crucial to giving it an edge in the race to persuade Beijing to direct RMB business toward London.

economy, and no major advanced economies were on the list.

Then, in March 2015, to the stunned surprise of the U.S. administration, Britain broke ranks. For the U.K., a strong relationship with China was crucial to giving it an edge in the race to persuade Beijing to direct RMB business toward London, rather than Frankfurt and other competing financial centers.

U.S. officials were apoplectic in private but more restrained in public. They couched most of their displeasure in terms of concerns about whether the AIIB would meet the "high standards" of existing multilateral institutions, such as the World Bank, when it came to governance, not to mention environmental and social safeguards.

The U.K. was only the first of many dominoes to fall. Soon after the U.K. signed up, France, Germany and Italy released a joint statement to the effect that they were keen to "join the founding members of the AIIB to work on establishing an institution that will adhere to best practices in the areas of governance, security, loans and public procurement."

By April 2015, when the charter of the AIIB was being agreed on, 57 countries had signed up as founding members. With so many countries falling over each other to join, its initial authorized capital was pushed to $100 billion; the total contribution of members from outside the Asian region was capped at $25 billion. China contributed $30 billion, the largest amount by far of all the members. China has 26 percent of the total voting shares; India has 7 percent; Russia has

Chinese housing project near Luanda, Angola.

6 percent. To leave no ambiguity about who will be calling the shots, the headquarters was located in Beijing.

Only one U.S. ally weighed the costs and benefits of being a founding member of the AIIB and decided that bowing to Beijing might not serve its interests. Local news reports quoted Prime Minister Shinzo Abe as saying at a meeting of his party that "the United States now knows that Japan is trustworthy."

By September 2015, when President Xi visited Washington, the United States and China had decided to call a truce on the AIIB. In an elegantly crafted sentence – elegant less in its linguistic than in its bureaucratic flourishes (to which, as a former bureaucrat, I tip my hat) – the two countries expressed agreement on a set of lofty and sufficiently vague principles:

> Both sides acknowledge that for new and future institutions to be significant contributors to the international financial architecture, these institutions, like the existing international financial institutions, are to be properly structured and operated in line with the principles of professionalism, transparency, efficiency and effectiveness, and with the existing high environmental and governance standards, recognizing that these standards continuously evolve and improve.

China has not been shy when it comes to making the point that the AIIB will not only demonstrate governance that is as effective as that of existing multilateral institutions, but will do even better. At least on paper, the AIIB's governance structure has many positive elements: a simple and transparent formula for setting country voting shares, the absence

ZUTE LIGHTFOOT/ALAMY

of any single country's veto power over major decisions, and a non-resident executive board that supervises, but does not interfere with, the management of the institution.

These are all improvements over the rigid governance structures found in existing multilateral institutions. For instance, the IMF has a full-time resident executive board that costs a lot of money to maintain and ends up interfering in the regular operations of the institution rather than providing oversight. Efforts to change this structure have failed – in no small part because the very same executive board would have to approve the change.

China has declared that, while it has the largest voting share at the AIIB, it will not have veto power over majority decisions. This would mark a clear distinction from the IMF, where major policy decisions require a supermajority of 85 percent. The United States, with a voting share of 16 percent, effectively has veto power, something that many other countries have, on occasion, found galling.

In May 2016, Jin Liqun (who was appointed the AIIB's president) confidently asserted that the institution's membership would expand to 100 countries before the end of the year. He noted that, while Japan and the United States had declined to join, the door would always remain open to them and that, in any event, Japanese and U.S. companies would be treated fairly in the bidding process for AIIB-financed projects. He added, pointedly, that the bank was recruiting top talent from around the world, including from the United States – and was even in the process of appointing a Japanese national to a senior-level position.

Although the AIIB does not directly advance the RMB's role, there is little doubt that over time such institutions will create financial beachheads in other countries that China can use to promote the use of RMB in trade and finance. Meanwhile, even as it was setting up the AIIB, where it will be the dominant power, China has also been engaging its emerging-market allies on other fronts.

BONDING AMONG THE BRICS

China has taken a leadership role in a group of the major emerging market economies dubbed the "BRICS," comprising Brazil, Russia, India, China and South Africa. Together, they account for about one-quarter of world GDP and roughly two-fifths of world population.

Brazil, Russia, India and China held their first formal BRIC summit in Russia in June 2009 (South Africa had not yet been invited to join). The countries were bound together by not much more than an acronym coined by Jim O'Neill of Goldman Sachs, and a desire to exert greater influence in the international monetary system. This was spurred in part by the functioning of the G-20, a group comprising most of the major economies.

The G-20, in which emerging markets have roughly equal numerical representation with the advanced economies, had taken on the mantle of coordinating international policy during the depths of the global financial crisis in 2008. However, by the middle of the next year, the emerging market countries were beginning to feel that the advanced economies, which had precipitated the crisis to begin with, were running the show, both directly and through their control of the IMF and other major international institutions that assisted the G-20 in its work.

The four BRICs demanded a greater say in running major institutions and also in helping to design any changes in the rules and procedures governing international finance. They wanted to send a clear signal that they would no longer accept old arrangements whereby leadership of the major IFIs – the IMF for Europe and the World Bank for the United States

– would be carved up among the advanced economies through an implicit deal.

There was considerable skepticism about whether the BRICs had enough shared interests to be more than just a talking shop. These countries may all have common complaints about the advanced economies, but they are also geopolitical rivals. For instance, China and India have a long history of border tensions. It was hard to imagine that shared grievances directed at advanced economies would be enough for this group to coalesce on more constructive actions. This skepticism was, if anything, heightened when South Africa was invited to join the group in 2010. Clearly, the BRICS would have to put some money on the table to be taken seriously.

China, with its vast foreign exchange reserves, saw its opportunity to lead. First, the Chinese teamed up with others in the group to set up the BRICS New Development Bank. Established in July 2015, its main goal is to promote sustainable development in the five countries. Fearful of being sidelined, India lobbied unsuccessfully to locate the headquarters in New Delhi. China insisted the headquarters would be in Shanghai, and got its way.

Recognizing that further aggressive moves to take charge could create bad blood, China compromised on other elements of control. India was allowed to appoint the first president. The initial $50 billion of subscribed capital is derived from equal contributions by the five members, who also have equal voting shares and no veto power over decisions made by a majority.

In July 2015, the Contingent Reserve Arrangement, a $100 billion reserve pool among the BRICS, also came into being. China is notionally contributing $41 billion; Brazil, India and Russia, $18 billion each; and South Africa, $5 billion. The five countries do not actually put up this money, but simply commit to providing the agreed-on amounts if any one of them were to need hard currency to respond to a crisis.

Through these two new institutions, the BRICS have earned the right to be taken seriously as an economic group. They have shown they can put money on the table in a coordinated way, thereby easing concerns about how the lack of fully congruent – and often conflicting – economic and geopolitical interests could hamper their cooperation on the world stage. And with its vast financial resources, China has become the first among equals.

As is the case with China's growing presence at the IFIs, the BRICS initiatives do not directly elevate the RMB's role. Still, by fostering stronger financial linkages between the key emerging market economies and creating alternatives to the existing global financial architecture, China has devised another way of chipping away at the present configuration of global reserve currencies. It is not stopping at such initiatives, recognizing that its wealth could also be used to simultaneously promote its own development and that of its neighbors.

SILK BELT OR SILK NOOSE?

The Silk Road has long fascinated scholars investigating the many ways in which Asia and Europe were connected far back in history. But it was only in the late 19th century that German geographer Baron Ferdinand von Richthofen coined the phrase to refer to a specific route of east-west trade that has existed for about two millennia.

Despite the general notion that the Silk Road was a major conduit of commerce, some authors have argued that the importance of the routes in economic exchanges was far overshadowed by its prominence in cultural and religious exchanges. These routes

The first YXE international container train travelling from China to Iran.

IMAGINECHINA

facilitated the spread of Buddhism from India and of Islamic culture and religion from Arabia and Persia into Central Asia and China.

China's government likes emphasizing linkages to history, but the focus is now clearly on commercial interests rather than culture or religion. In the fall of 2013, President Xi Jinping proposed two major economic initiatives – the Silk Road Economic Belt and the 21st Century Maritime Silk Road. The two have come to be referred to jointly, and rather clunkily, as the Belt and Road Initiative.

The Belt and Road is envisioned as connecting a large and disparate group of economies, from the economically vibrant and rich to those that are poor yet have a huge potential for economic development. On land, it will focus on jointly building a new "Eurasian Land Bridge" and developing a few specific economic corridors: China-Mongolia-Russia, China-Central Asia-West Asia and China-Indochina Peninsula. The initiative will encompass existing plans for a China-Pakistan Economic Corridor and a Bangladesh-China-India-Myanmar Economic Corridor.

In November 2014, President Xi announced that the Silk Road Fund would begin operation the following month, with an initial commitment of $40 billion. The stated objective was "to promote connectivity and contribute to the realization of the master blueprint and bright future of the Belt and Road Initiative in accordance with a principle of market-orientation, international standards and professional excellence."

The notion of following market principles and meeting or exceeding the best international standards of governance permeates many of the documents. This is no doubt meant to emphasize that the Belt and Road initiative is not merely a device to strengthen control of China's or other countries' state enterprises. Moreover, China wants to make it clear that projects undertaken will not tolerate low technical, environmental or governance standards.

It is easy to see how, despite concerns held by developing countries in Asia about hitching their economic and political fortunes too closely to China, the initiative is tempting.

They desperately need better infrastructure, but lack the funding to build it.

During President Xi's visit to Pakistan in April 2015, he announced $46 billion worth of financial support for energy and infrastructure projects. This figure would eclipse all the economic- and security-related financial assistance given by the United States to Pakistan since 2002. Pakistan's prime minister Nawaz Sharif could barely contain his enthusiasm:

> Mountains and rivers join our territories; and our hearts and minds unite our nations.… We are good neighbors, close friends, dear brothers and trusted partners. We have an all-weather, time-tested cooperative strategic partnership. We are truly iron brothers.

The Belt and Road Initiative also conveniently ties in the international expansion of China's influence to the goal of improving the economic prospects of the country's underdeveloped western and southern provinces, many of which are landlocked. This would advance both the regional balance of China's growth and the level of internal integration of the economy. It would also provide a boost to growth, at least temporarily helping to address considerable overcapacity in manufacturing and opening more markets for Chinese exports.

Despite being open about the scope of the initiative, Beijing is sensitive to concerns that it is meant mainly to further China's economic interests and to serve as a tool for the political subjugation of neighboring countries. China is particularly sensitive about the political aspect, as it has long held that the United States and other Western countries have no business interfering in its own internal affairs, such as in the governance of Hong Kong and Tibet.

For instance, China has rejected any comparison between the Belt and Road Initiative and the Marshall Plan, the U.S. government's initiative (from 1947 to 1951) to help Western Europe rebuild its war-ravaged economy. Some scholars have argued that the Marshall Plan was as much a product of America's desire to protect its economic and geopolitical interests as it was an act of altruism.

OTHER ARMS OF THE OCTOPUS

Some of China's financial institutions are also playing a subtle but important part in expanding the country's role in international finance, with the RMB's rise being fueled through them in a backdoor way. The China Development Bank (CDB), for instance, makes overseas loans to Chinese corporations operating abroad, as well as to foreign corporations. At the end of 2014, overseas loans amounted to $163 billion, about 13 percent of the CDB's overall loan portfolio. But a year later, the CDB's overseas loan portfolio had risen to nearly $330 billion.

The Export-Import Bank of China is another institution that facilitates the country's expansion of influence abroad – largely through financing trade deals. Using data from secondary sources, one can estimate that in 2014 there was about $53 billion of overseas lending outstanding, amounting to 19 percent of the bank's overall loan portfolio.

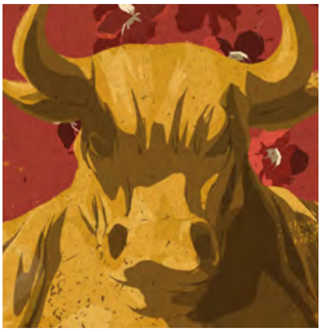
* * *

China is becoming a leader of the international community – not, as the West prefers, by being co-opted into existing institutions under the current rules of the game, but rather on its own terms. This goal subsumes another objective, which is to eventually alter the rules of global finance that China sees as conveying undue privilege to the existing reserve currencies. Among other ends, this would allow the RMB to fairly stake a claim to being one of the world's dominant reserve currencies.

Taxing the Rich

ILLUSTRATIONS BY
MARK SMITH/SALZMANART

In spite of recent welcome news that the incomes of the bottom four-fifths of American households have begun to grow again, there's still a virtual consensus among economists that the great forces driving the economy in the long run – global convergence and technological change, in particular – will disproportionately benefit a lucky minority. Hence their enthusiasm for using tax policy to "lean against the wind." But in *Taxing the Rich: A History of Fiscal Fairness in the United States and Europe*,* a startling new book by government specialists Kenneth Scheve (Stanford) and David Stasavage (NYU), the researchers conclude that few societies have ever been inclined to redistribute income for this purpose and that contemporary America is no exception. ¶ Their somewhat surprising conclusion is bolstered by the results of cleverly designed contemporary surveys. It seems that redistribution through tax policy can only be sold to the public as a means of counterbalancing unfair advantages conferred on the rich by government. But don't take my word for it – find out for yourself. — *Peter Passell*



Much of the debate about taxing the rich has focused on the current situation of the United States. Since the U.S. Supreme Court removed restrictions on campaign financing, this must somehow help explain why the rich are so lightly taxed in the United States.

Other people explain the reduction in taxes on the rich by referring to other short-term developments – conservatives often say that U.S. voters have learned the lessons of economic efficiency, while liberals claim that voters have somehow been hoodwinked.

Current developments may be important, but we have learned a lot more by looking at taxation of the rich over the long run across multiple countries. Debates about taxation are mediated by differing interpretations of what it means to treat people as equals.

THREE WAYS TO TREAT PEOPLE AS EQUALS

Fairness can mean many different things, but one common feature of fairness in taxation is the belief that people ought to be treated the same. We have distinguished between three versions of equality: The first, *equal treatment*, is the idea that everyone should pay the same rate because this mimics basic democratic rights, such as each person having a vote of equal weight. The second, *ability-to-pay*, is the idea that the rate of tax you pay ought to be conditioned on the resources you have at your disposal. The third variant, *the compensatory theory*, is the idea that the rate you pay ought to depend on whether the state has taken other actions that have put you in a privileged position.

Going as far back as Renaissance Florence, opponents have argued that progressive taxation violates the norm of equal treatment in a republic. And modern survey evidence shows that many people in the 21st century seem to think exactly the same thing. We even see this view among people who would otherwise have had more income if a progressive rate structure were adopted. We also saw very ample evidence of equal treatment arguments in 19th and early-20th century debates about taxation. Equal treatment arguments clearly resonate in the political arena.

An alternative version of treating citizens as equals is to levy different tax rates based on ability to pay. If the rich have more, then they should not only pay a greater quantity of tax – they can afford to pay a higher tax rate. Though the ability-to-pay doctrine was not presented in formal mathematical terms until the end of the 19th century, it existed as a principle nearly four centuries earlier, as is evident from Francesco Guicciardini's advocacy of progressive taxation in *La Decima scalata* and in 18th century debates about taxing "luxury." Today the ability-to-pay doctrine provides part of the foundation for optimal tax theory in economics, although in optimal tax theory the objective is to maximize aggregate welfare rather than to see that everyone makes the same sacrifice when it comes to taxation.

The ability-to-pay doctrine is intuitive, and many people have clearly subscribed to it across the centuries. Nineteenth-century

advocates of ability-to-pay used the doctrine to argue for progressive taxation. Many 20th-century observers, such as Edwin Seligman, took it as given that the emergence of the ability-to-pay doctrine explained why numerous countries were moving to implement progressive income taxes. We also see evidence of support for ability-to-pay in contemporary surveys. The ability-to-pay doctrine has resonated with many citizens and will continue to do so.

Yet, while ability-to-pay arguments matter to many, they seldom carry the day. Top tax rates have not been altered in response to changing levels of inequality. If they had been altered in this manner, it would be clear in the data that, as inequality rose, top tax rates would also rise. But this isn't what's happened.

Also, the massive increase in top tax rates associated with war mobilization cannot be explained by ability-to-pay. If ability-to-pay concerns were the reason governments implemented these policies, we should see statements in parliamentary debates reflecting this fact. Instead, we found a dramatic decrease in the use of ability-to-pay arguments during the war itself. Something else was at work.

The ability-to-pay doctrine has been subject to two persistent criticisms, one better founded than the other. Critics suggest first that the doctrine offers no clear plan for saying just how much more in taxes the rich can afford while still making the same sacrifice as everyone else. But many people, including survey respondents, believe in ability-to-pay in practice, and, in any event, the direction that such arguments imply for taxing the rich is clear enough.

Second, critics suggest that the ability-to-pay doctrine takes no account of how the money is earned in the first place. This may be the main reason we see no clear correlation between levels of inequality and how heavily governments choose to tax the rich. Whether people want to see the rich taxed heavily in a period of high inequality depends on the broader context, and how they think the inequality was generated in the first place.

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The third approach to treating people as equals, the compensatory theory, takes direct account of the broader context for state action. If the state has treated people unequally on one dimension, then taxation should be used to compensate. In 14th century Siena [Italy], the city council deemed that if some taxes fell heavily on one group, then other taxes should be set so as to fall on alternative groups.

During the 19th century, similar arguments were made in favor of an income tax. If the weight of indirect taxation (sales and excise taxes, for example) was lighter for the rich than for the rest, then an income tax should be designed and implemented so as to counteract this effect. Finally, compensatory arguments help explain why 20th century governments adopted very high top tax rates at times of mass mobilization for war. Wartime governments certainly needed new revenues to fund their expenditures. But this doesn't explain why they chose to increase taxation by so much on those at the very top. Compensatory arguments, by contrast, do explain why they made this choice.

In considering compensatory arguments, people are most easily persuaded to use the tax system to compensate for the effect of inequalities generated by the state itself. Moreover, in the political arena compensatory arguments are most commonly used in reference to current or recent inequalities created by the state. In principle, one could think of using the tax system to compensate for state actions further in the past, or for a long history of unequal treatment by the state. Though a few 19th-century theorists considered using progressive taxation to achieve precisely this objective, such arguments have not been common in the political arena. Our evidence does not say exactly why this is the case, but it may be because the facts about past inequalities may be more open to dispute.

The compensatory theory is, of course, also related to a broader discussion about the role of good fortune as opposed to virtue (effort) in determining how rich someone is. This is a very prominent subject among those who work on the politics of redistribution. Survey evidence establishes that citizens of most European countries are more likely to say that doing well economically depends on luck, whereas Americans emphasize the role of effort. These biases are then used to explain why the United States provides fewer social benefits than most European countries.

But, as we have emphasized, the United States is hardly exceptional today in taxing the rich less heavily than was once the case. Moreover, it is entirely likely that in the immediate postwar era Americans believed every bit as much in the importance of effort, yet very high top marginal tax rates prevailed in the United States. When citizens think about taxing the rich, they think not just about whether the rich have been lucky, but more specifically about whether the rich were lucky to receive privileges awarded by the state.

THE TOP TAX RATES PEOPLE WANT

Much of the popular discussion about taxing the rich focuses on rising inequality and the fact that those at the very top seem to be reaping most of the gains. Many conclude that the rich ought to be taxed more heavily. It's not hard to see why people believe this. If you subscribe to the ability-to-pay view of taxation, the rich should be paying more. If you simply disliked inequality, you would think the same. Contemporary surveys in the United States do often show that people are worried about rising inequality. And they do wish the government would do something about it, including raising the taxes of the rich. This latter fact is usually demonstrated by questions asking whether taxes on people earning $250,000 a year (or sometimes $1 million) should increase, though the surveys typically don't ask how much their taxes should increase. The surveys also do not ask whether people believe that taxes should be raised by increasing statutory rates or by reducing exemptions to increase effective rates – a critical issue we discuss below.

These considerations lead naturally to the question of why there seems to be so little in the way of a policy response to today's inequality. Although it is understandable to point to any number of contemporary shortcomings of American democracy as the explanation, there just isn't much historical evidence that inequality alone prompts governments to tax the rich.

How can we reconcile the historical record with recent surveys? One way is to conduct a survey that asks respondents what tax rates they would prefer, rather than simply whether taxes should be increased without any indication whether the increase should be through reducing exemptions or raising rates – and if the latter, what the desired change should be. If people favor raising tax rates on the rich by a couple of percentage points, this is entirely different from the 30 to 40 percentage point increase that would be necessary to get top rates back to where they stood for much of the 20th century.

asked to provide a preferred rate for one of the other (randomly assigned) income levels. Put all these responses together and we have a view of how Americans would like to see the rich taxed relative to the rest.

We found that the median preferred marginal rate for a household making more than $375,000 a year is 30 percent (with a mean preferred rate of 33 percent). This is below the marginal rate of 39.6 percent that such a household would actually pay today. Note, too, that the bulk of the responses range from 20 percent to about 40 percent.

The median preferred marginal tax rate for a household making more than $375,000 a year is 30 percent, below the 39.6 percent that such a household would actually pay today.

In work with Cameron Ballard-Rosa and Lucy Martin, we fielded a survey of 2,250 individuals who were representative of the American population. As part of this investigation, each respondent was asked the following question:

> Consider the taxes paid in the U.S. by those families making X each year. Please select from the list below which marginal tax rate you would most like to see families making X each year pay: 0, 5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70 or 80 percent.

There is a possibility that survey respondents might confuse the marginal tax rate – the rate applying to the last dollar of income – with the average tax rate, which is obtained by dividing total taxes paid by total income. In order to limit this possibility, we provided respondents with a definition of the marginal tax rate. The levels of income considered for X in the survey were designed to closely track the cutoffs in the current U.S. income tax schedule.

All respondents were asked to provide a preferred rate for the more-than-$375,000 category. Each of the respondents was then

The obvious lesson is that there is little support for the idea that Americans would like to see much higher top rates, but aren't getting the policies they want. While we believe that this survey question provides us with a more precise view of opinions on taxation than do the alternative questions often used in surveys, we also conducted a much more extensive series of survey experiments using an entirely different question-wording and methodology – but arrived at very similar conclusions with respect to preferred rates of taxation.

One possible reason people don't want higher tax rates is that the individuals in our survey fail to understand how high inequality is today and how much it has increased in recent years. This is a common argument. A recent survey experiment helps adjudicate this question. The experiment provided a large sample of individuals with a "treatment" that involved provision of accurate information about the income distribution in the United


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RICH

States today. It then observed whether this information prompted individuals to support a higher marginal tax rate on those with high incomes.

There was, indeed, such an effect, but its magnitude was very small. Individuals who received the treatment supported a top marginal rate of income taxation only one percentage point higher than did members of a control group who did not receive the treatment.

The second reason people may not want higher tax rates is the one we have emphasized throughout this book. Over the last two centuries, the most politically powerful arguments in favor of heavy taxation of the rich were compensatory claims made in a context of mass mobilization for war. As countries (including the United States) transitioned away from an era of mobilization, parties of the left were deprived of the compensatory war sacrifice arguments that had proven so powerful. They relied instead on the idea that taxing the rich was necessary because it was fair. But they often lacked strong arguments for why it was fair.

Under pressure from political parties of the right, top tax rates were lowered dramatically. The end result, at least in the United States, is a situation in which top tax rates today are just about where most people would like to see them.

The truth may be that, at least in the United States, there isn't much support for adopting very high top rates of the sort that prevailed in the immediate postwar era – at least not enough support to overcome whatever advantages the wealthy may have in influencing the political process. Building such support would require the construction of a new compensatory argument outside of a wartime context, one that suggested how the rich have benefitted from state privilege while others have sacrificed.

Now, there certainly have been cases of late where this has been true. To see this, we need look no further than the bailout of large banks that preceded the Great Recession. But even this involved a privilege enjoyed by only a fraction of the better-off – those with large stakes in these banks – as opposed to the rich as a group. To put it differently, it is not clear why Silicon Valley should be taxed because Wall Street was bailed out. Moreover, a great many citizens opposed the Wall Street bailout to begin with, so their preferences were focused less on compensating for it than on simply opposing it. Drawing on this history, we can see that, much as was the case in the 19th century, successful compensatory arguments today would need to emphasize inequities within the tax system itself.

THE DEBATE GOING FORWARD

When people today think about taxing the rich there is often a tendency to compare current conditions with those that prevailed in the decades following the end of the Second World War, an era with very high top marginal tax rates. Yet as we have pointed out, the era of the two world wars and their aftermath was a particular one because of mass mobilization.

Mass mobilization occurred because of international rivalry and because nations found themselves in a particular state of technological development in which it was both feasible and desirable to field a mass army. Today, the question is what fairness-based arguments for or against taxing the rich remain relevant in an era of limited mobilization. In the absence of compensatory arguments, future debates will follow the usual divide between those who appeal to ability-to-pay as a reason for taxing the rich and those who appeal to equal treatment in order to oppose it while also emphasizing the efficiency costs of high marginal tax rates.

TAXING AMERICA'S RICH, 1862–2016

DATE	TAX BRACKET	INCOME AT WHICH HIGHEST BRACKET KICKS IN
1862	5.0%	$10,000
1864	10.0%	$10,000
1867	5.0%	$1,000
1870	2.5%	$2,000
1873–93	(No income tax)	
1894	2.0%	$4,000
1895–1912	(No income tax)	
1913	7.0%	$500,000
1916	15.0%	$2 million
1917	67.0%	$2 million
1918	77.0%	$1 million
1919	73.0%	$1 million
1922	58.0%	$200,000
1924	46.0%	$500,000
1925	25.0%	$100,000
1932	63.0%	$1 million
1936	79.0%	$5 million
1941	81.0%	$5 million
1942	88.0%	$200,000
1944	94.0%	$200,000
1946	91.0%	$200,000
1952	92.0%	$200,000
1954	91.0%	$200,000
1955	91.0%	$400,000
1964	77.0%	$400,000
1965	70.0%	$200,000
1977	70.0%	$203,200
1979	70.0%	$215,400
1982	50.0%	$85,600
1983	50.0%	$109,400
1984	50.0%	$162,400
1985	50.0%	$169,020
1986	50.0%	$175,250
1987	38.5%	$90,000
1988	28.0%	$29,750
1989	28.0%	$30,950
1990	28.0%	$32,450
1991	31.0%	$82,150
1992	31.0%	$86,500
1993	39.6%	$250,000
1995	39.6%	$256,500
1996	39.6%	$263,750
1997	39.6%	$271,050
1998	39.6%	$278,450
1999	39.6%	$283,150
2000	39.6%	$288,350
2001	39.1%	$297,350
2002	38.6%	$307,050
2003	35.0%	$311,950
2004	35.0%	$319,100
2005	35.0%	$326,450
2006	35.0%	$336,550
2007	35.0%	$349,700
2008	35.0%	$357,700
2009	35.0%	$372,950
2010	35.0%	$373,650
2011	35.0%	$379,150
2012	35.0%	$388,350
2013	39.6%	$450,000
2014	39.6%	$457,601
2015	39.6%	$464,850
2016	39.6%	$466,951

SOURCE: Tax Foundation

This debate is unlikely to result in much deviation from current trends in tax rates. Earlier in the book, we suggested that change with regard to taxing the rich would instead depend on the ability of proponents to do one of two things. First, proponents could use compensatory arguments compatible with an era of peace. Second, they could appeal to the logic of equal treatment to oppose situations in which, because of exemptions or special privilege, the rich are taxed less heavily than others.

When we ask whether compensatory, or even equal treatment, arguments in favor of taxing the rich more are relevant today, we should recall the tone of the debate during the 19th and early 20th centuries. In other words, we need to look back prior to the era before mass mobilization for war fundamentally changed tax debates.

One thing we see clearly in these earlier debates is that proponents of the income tax didn't only refer to ability-to-pay; they also appealed to equal treatment. Prior to the establishment of general income taxes, direct taxes were often levied on land, or on income from land. In rapidly industrializing societies, this meant that whole new categories of mercantile income went untaxed. Taxes on external manifestations of wealth, such as the number of doors and windows in a home, suffered from many of the same flaws.

Under these conditions, Joseph Caillaux argued in France in 1907 that a general income tax was necessary to reestablish equal treatment.

He saw a general income tax as continuing the work of the French revolutionaries by abolishing new sources of privilege that had emerged since 1789. Caillaux also suggested that each time privileges within a tax system are abolished they gradually reemerge, necessitating periodic efforts to see that equal treatment is restored.

Now consider how the logic of Joseph Caillaux's argument is relevant in the 21st century. Today the advanced industrial countries have general income taxes applying to a broad definition of income. However, the U.S. tax code in particular provides a great many reasons why reported income may not be taxed at the full rate one would expect. There are deductions. There are exemptions. There are opportunities to classify income as capital gains that are subject to a lower rate of tax.

These features of the tax code are currently producing a system whereby the higher one's income the lower the effective rate of tax one is likely to pay.

These features of the tax code could arguably be said to play a role analogous to the special privileges of the past. They are also currently producing a system whereby, after a certain point, the higher one's income the lower the effective rate of tax one is likely to pay. In the presence of such a system, there are arguments in favor of taxing the rich that don't have to rely on the principle of ability-to-pay. One can simply insist on respecting equal treatment.

To see this, we can use information on effective tax rates across income categories produced by the IRS.

Data from 2011 show that, up to an income of $2 million per year, the more people earn, the higher the effective rate households are likely to pay. However, as incomes increase above $2 million, effective rates actually decrease. The IRS calculated that, on average, in 2011, those earning between $1.5 million and $2 million a year faced an effective rate of 25.2 percent. In contrast, those earning more than $10 million per year faced an effective income tax rate of only 20.5 percent. Had people making more than $10 million per year been obliged to pay the same effective tax rate as those making $1.5 to $2 million, total tax revenues would have increased by about $15 billion.

This is a tiny fraction (less than one-half of 1 percent) of the total federal budget, but it is not an inconsequential sum. It is, for example, roughly twice the total salaries of all kindergarten teachers in the United States.

Equal-treatment logic can also apply to payroll taxes and the question of whether to raise the income ceilings applied to them. In 2014, the Social Security tax was levied on employees at a rate of 6.2 percent, but only up to $117,000 in annual earnings. This ceiling clearly results in regressive incidence. The story of regressive payroll taxes in a number of European countries is even more dramatic. In France, the lowest earners pay approximately 25 percent of their income in payroll taxes, while the highest earners pay less than 5 percent.

We are not saying that these equal-treatment arguments necessarily should be accepted, or that they represent the whole story. With the income tax, many deductions and exemptions exist for good reasons, and there are efficiency arguments for taxing capital gains less heavily than regular income. Likewise, ceilings on payroll taxes can be justified if one claims that these are not part of general taxation, but separate payments for services (pensions, medical care) that are not financed out of the general government budget. What we are suggesting is that, rather than focusing on high top statutory rates, supporters of taxing the rich would probably be more successful if they appealed to equal treatment.

Let's consider next the current relevance of compensatory arguments for higher taxes on the rich.

For centuries, people have emphasized that if one tax has an unequal incidence, then another tax can be used to balance things out. During 19th-century debates this same compensatory argument was used to defend the income tax. Robert Peel used it in the United Kingdom in 1842 to support reintroducing the income tax. John Stuart Mill advocated an income tax targeted at higher incomes for precisely the same reason. We also saw evidence from the United Kingdom that, thanks to the existence of a progressive income tax, by the first decade of the 20th century, the overall burden of taxation across income groups was essentially flat. This was not an ideal outcome as far as ardent advocates of taxing the rich were concerned, but it was certainly better than the regressive tax system based on indirect taxation that had existed prior to that date. In sum, compensatory arguments appear to have made a difference even outside a wartime context.

Now think about whether it would be possible for proponents of taxing the rich today to use peacetime compensatory arguments. Such claims can still be made because lower income groups continue to bear the principal burden of indirect (or consumption) taxation. As UCLA law professor Steven A. Bank has emphasized, this also has direct implications for the fairness of "flat-tax" schemes on income. He suggests flat-tax schemes should take into account how much citizens pay from all sources, and not just from one tax.

In Europe, value-added taxes constitute a very significant fraction of the taxes paid by poorer households, even though basic necessities are taxed at lower rates. In France those with the lowest incomes pay fully 15 percent of their income in consumption taxes, whereas the highest earners pay only 5 percent of their income in such taxes.

The regressive incidence of consumption taxes creates a potential argument for taxing the rich more heavily as a means of restoring equal treatment. The United States does not have a value-added tax. However, individual states and localities do, of course, levy general sales taxes. All the evidence suggests that, even though basic necessities are often exempted from these sales taxes, their overall incidence is still regressive. This again provides a compensatory argument for a progressive income tax. It could also provide an argument for applying progressive rates to consumption taxes.

The examples above suggest ways in which future debates about taxing the rich might deviate from a simple dispute between those who claim that the rich can afford to pay more and others who emphasize equal treatment and efficiency. Overall, this could lead to some increase in the taxes of the rich in the coming years. But it is very unlikely to lead to a repeat of 20th-century patterns.

To have that happen, one of two things would need to occur. The first possibility is a massive political or economic shock that put new compensatory arguments on the table, as happened in 1914 in Europe. Alternatively, proponents of progressive taxation would need to make a compelling case that current government policies are heavily biased toward the rich. That prospect seems uncertain and sure to be contested. In the end, the one certain thing is that taxation of the rich will continue to be a fundamental source of social conflict.

BY MAUREEN JAPHA

In the traditional paradigm of medical research, academic researchers led and philanthropies followed, allocating funding for what they were told might be the Next Big Breakthrough. But now, no longer content to watch passively from the sidelines waiting to see whether their grant dollars will generate promising discoveries, a new breed, dubbed venture philanthropies, are taking a new approach. They are investing in identifying unmet needs in specific fields of research, along with figuring out how they can most effectively leverage their funding to maximize therapeutic advancement.

How they go about this, of course, varies from organization to organization; one size doesn't fit all. But they do share similar strategies, exploring how to:

• Partner with research institutions to identify licensees for their innovations who can best move promising technologies from the lab to patients

• Overcome the barriers to sharing data, tools and research results, which too often impede progress

• Create mechanisms that enable donors to share in revenue generated by commercializing the research they fund, so the money can be recycled

Nontraditional relationships between researchers and philanthropies have the potential, in the long run, to be both more effective and more sustainable. However, the new order of things is bound to generate growing pains for universities as they redefine their roles in more flexible partnerships. Without clearheaded management of these partnerships, the resulting uncertainty could delay research and add to costs, when the goal is just the opposite. This is making the role of university technology-transfer offices all the more important, because they work with both the researchers at their institutions and the research sponsors to ensure that the new model helps rather than hinders innovation.

Delays in negotiating agreements that spell out the goals and divide the responsibilities of the partners are particularly frustrating. Two years ago, FasterCures set out to expedite the transition to these new sorts of partnerships, exploring what facilitates efficiency and economy. Through a series of discussions with a diverse group of stakeholders representing both academia and foundations, we identified three principles of engagement to facilitate this process. Here, we introduce these principles, discuss why they matter and identify ways to implement them.

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JUDE BUFFUM

PRINCIPLE 1: PARTNERSHIPS FOR PURPOSE

It comes as no surprise that priorities and expectations can differ between universities and charitable foundations. But it is important not to lose sight of the enduring truth that both are mission-driven organizations with ethical (and legal) obligations to serve the public good. When negotiating agreements, decisions should always be made with an eye toward delivering safe and effective therapies as efficiently as possible.

For many medical foundations, it is critical to work with research institutions that are equally dedicated to ensuring that promising technology continues to advance, even after the institution has licensed it to a third party. Identifying a licensee with the capability, expertise and motivation to move a product forward is therefore critical – and increasingly, foundations want to play a role in the selection process. Indeed, many patient-focused foundations have broad networks and extensive technical expertise that they are more than willing to tap into during the search for suitable licensees.

Many of the institution representatives who participated in FasterCures' roundtable discussions on this topic said they welcome this input. However, they pointed out that grant provisions removing final decision-making authority from the university can be hugely problematic. For example, requiring preapproval of a licensee can unduly delay or even derail license negotiations.

In one case, an institution was prepared to enter into a license agreement with a drug maker to continue development of its researchers' technologies. But some of the research had been supported with foundation funding, and that foundation required detailed information on the licensee (a pharmaceutical company) along with patenting and progress reports that the company was reluctant to share. Although the foundation ultimately expressed a willingness to compromise, the deal fell apart.

This example highlights the need for funders and universities to engage more fully. Technology-transfer offices are highly motivated to see intellectual property succeed for both their institutions and the individual researchers. They are experts in crafting and securing effective diligence provisions. Accordingly, provisions preserving an option for the grantor to take ownership of intellectual property after it has been licensed to a third party – known as march-in rights – or clauses that give funders preapproval over third-party licensees may be not only unnecessary but also potentially detrimental, as they delay licensing or alienate potential licensees altogether.

Foundations can add value far beyond funding by supplying their experience, resources and contacts. However, it is critical for them to signal their intent to participate in the licensing process. Working together with the aim of forming an ongoing partnership rather than a one-time transaction is likely to serve the interests of both institutions and foundations, and ultimately the research.

We believe these guidelines can help foundations preserve a role in licensing without compromising the technology-transfer office's prerogatives:

• Foundations interested in collaborating to identify potential licensees should make this intent clear in the grant agreement. This can be as simple as including a sentence that states:

> Given Foundation's network and expertise, both parties recognize that Foundation can be a valuable partner in the search for a licensee of technology that may result from research funded by this grant.

• Foundations need to specify a timeline that identifies when and how the foundation will be brought into the licensing discussion. For example,

> The parties agree that within 30 days of the decision to pursue patent protection, the Foundation will be offered an opportunity to confer with the Institution to identify and suggest potential licensees.

PRINCIPLE 2: COMMUNICATE EARLY AND OFTEN

Nearly all conflicts, missed opportunities and disagreements involving funders and research institutions can be traced back to miscommunication. In FasterCures' roundtables, foundations and universities alike acknowledged they could do more to ensure that their counterparts were kept informed. Remedies included relatively straightforward actions like identifying a single contact at each organization to facilitate coordination. Another disarmingly simple suggestion: create universal directories of relevant contacts at both institutions to minimize search time and cost.

Because this sort of back-and-forth is not yet happening organically across all organizations, foundations should look to build in the

Working together with the aim of forming an ongoing partnership rather than a one-time transaction is likely to serve the interests of both institutions and foundations, and ultimately the research.

dialogue by establishing milestones in the grant timeline at which the parties confer. While it may be relatively easy to facilitate such check-ins during the term of the grant, many stakeholders have pointed out that it may be just as important to maintain the dialogue after the term has ended.

For example, a check-in would enable the university's technology-transfer office to update the foundation on its efforts to identify a licensee. This gives foundations a chance to weigh in, suggest alternatives and perhaps propose a licensee unknown to the researcher or technology-transfer office. Such post-grant check-in calls would short-circuit potential misunderstandings that reduce the partners' trust – not to mention the prospects for further collaboration.

Technology-transfer offices, for their part, pointed out that streamlining reporting requirements to coincide with obligations they already have to government sponsors like the National Institutes of Health would minimize administrative burdens while still ensuring that foundations are kept informed. Some practical steps to this end include:

• Establishing single points of contact in the research institution and the foundation to avoid multiple, potentially conflicting conversations between the funder, researchers, the technology-transfer office, research administration and other stakeholders.

• Laying out explicit terms for when and how a foundation will be notified of key developments, including invention disclosures and patenting decisions.

JUDE BUFFUM

PRINCIPLE 3: TRANSPARENCY, WITHIN REASON

Transparency can be beneficial in any negotiation but has even more upside where (as here) there is such significant alignment of purpose between the negotiating parties. Some foundations, especially those funding early-stage research, prioritize partnering with researchers and institutions willing to share resources with the goal of accelerating progress in the field as a whole. Foundations may write this into their grant agreements, obligating grantees to participate in workshops or closed discussion groups with other grantees.

Some grant contracts may include research-use-only licenses, ensuring that other research institutions will have access to nonexclusive licenses to utilize research funded by the foundation for noncommercial purposes. Because a degree of confidentiality and exclusivity is usually required to obtain patents or to set the stage for journal publication, it is important for foundations and institutions to be open about the risks they are willing to accept in the name of diffusing knowledge rapidly.

The benefits of transparency can be effectively demonstrated through the example of negotiating revenue-sharing clauses. In particular, an open dialogue on why revenue sharing is being proposed and which terms would be deal-breakers is critical to minimizing misunderstandings. When FasterCures initiated stakeholder discussions on these issues, many participants viewed a formula that distributed revenue in proportion to the funder's contribution as the fairest way to allocate income from licensing. As one foundation stakeholder explained: "We want to benefit when the university benefits, but commensurate with funding."

The new emphasis on sustainability is forcing all parties to reconsider how success will translate into income.

However, as discussions proceeded, university representatives made clear that while they share that inclination, flat royalty rates capped at reasonable multiples of the awards are appealing because they are much more straightforward to calculate.

Participants pointed out that the reasonableness of the negotiated rate depends on the degree to which the foundation contributes to ancillary costs, such as patent expenses and overhead, as well as to the cost of the specific research being funded. Universities also said that setting a revenue threshold that must be reached before the foundation's right to share income kicks in avoids the administrative burden of dividing up relatively small amounts of revenue, while also giving the university a chance to recoup some of its costs.

In negotiating grant agreements, university and foundation partners can enhance transparency in a number of concrete ways:

- Exchange term sheets in advance of entering into license agreements with third parties. This can be hugely effective in addressing misperceptions about a university's willingness to impose stringent diligence requirements while also giving foundations the opportunity to propose changes.
- Require foundations interested in promoting sharing of early-stage research or resources to communicate with partner institutions to ensure that the sharing policies in place are reasonably tailored for the technology and stage of research.
- Ensure that foundations seeking a share of licensing revenue as part of a grant agreement articulate their goals and put some thought into deciding what constitutes a fair division. This might take the form of a simple proportional share of revenues, but it could be a flat-rate royalty limited by a threshold requirement, or a cap, or both.

DOWN THE ROAD

It's not surprising that there are real differences of opinion between venture philanthropists and research institutions on the appropriate terms for this latest generation of partnerships. After all, the new emphasis on sustainability, on both sides, is forcing all parties to reconsider how success will translate into income. What's important to keep in mind, though, is that everyone involved agrees that the first priority is getting effective and efficient treatments to patients. Managed with care and foresight, this transition will better equip all the stakeholders to build longer lasting, more productive partnerships.

Tech Knows the Way to San Jose

In December, the Institute unveiled the latest results of its Best-Performing Cities index, an annual look at where America's jobs are created and sustained, with rankings of some 400 large and small metros across the country. Returning to the top spot this year: San Jose, California, yet more evidence of Silicon Valley's ongoing leadership in creating an ecosystem for innovation and entrepreneurship. By the same token, California's economy as a whole continues to shine, with 6 of the top-25 spots in the large metro category and 2 in the top-10 small metros. But strikingly, the top small metro is not in the Golden State. It's Bend, Oregon, which has carved out an enviable niche that mixes high-tech, trendy microbreweries and a developing expertise in drone technology.

Trump Change

Part of the discussion at Partnering for Cures was how the Trump White House could best serve the cause of innovation in biomedicine. To sharpen the exchange, FasterCures asked some 150 leaders in biomedical research one core question: what are the opportunities for the President-elect to propel biomedical innovation forward? The results, published in the report "Rx for Innovation: Recommendations for the New Administration," can be found on the Institute website. "I was struck by the intense optimism people had, not only for what innovation lies ahead but also for the opportunity that this transfer of power offers," says FasterCures Executive Director Margaret Anderson.

P4C Matters

The Institute's FasterCures group convened its annual Partnering for Cures conference in New York in November, bringing together innovators from across domains of medical research. The meeting featured panels, workshops, dozens of roundtable discussions and – probably most productive – plenty of time for informal networking. Held each fall for nearly a decade, P4C is animated by the passion of participants, ranging from academic researchers to pharma executives to patient advocates, all of them intent on speeding treatments that can improve (and even save) lives. At this year's event, FasterCures bestowed its first-ever Partner of the Year award to Francis Collins, the pioneering geneticist who is now director of the National Institutes of Health, for his commitment to expanding medical innovation through collaboration and his tireless work on behalf of patients throughout his career.

Francis Collins (left) with biotech journalist Luke Timmerman.

COURTESY OF FASTERCURES

Not the Usual Suspects

Innovation is good, right? You'll get no objections from me – though, to paraphrase the late Supreme Court Justice Potter Stewart on pornography, while I think I know it when I see it, the definition of innovation is mighty hard to pin down. That hasn't stopped a pretty impressive crew of academics from Cornell and Insead (the French business school), along with a UN Agency (the World Intellectual Property Organization), from rushing in where this editor fears to tread.

The Global Innovation Index ranks 128 countries on both their output of innovation and their "efficiency" of innovation – a measure of output relative to inputs. There are few surprises in the former, save for an apparent bias in favor of small, ethnically homogeneous countries. But the rankings in innovation efficiency are pretty striking. Here are the top 25 innovators, along with another dozen that caught my eye for one reason or another.

INNOVATION RANK	EFFICIENCY RANK
1. Switzerland	5
2. Sweden	10
3. United Kingdom	14
4. United States	25
5. Finland	32
6. Singapore	78
7. Ireland	8
8. Denmark	14
9. Netherlands	20
10. Germany	9
11. South Korea	24
12. Luxembourg	1
13. Iceland	3
14. Hong Kong	83
15. Canada	57
16. Japan	65
17. New Zealand	40
18. France	44
19. Australia	73

INNOVATION RANK	EFFICIENCY RANK
20. Austria	43
21. Israel	23
22. Norway	55
23. Belgium	27
24. Estonia	6
25. China	7
***	
26. Malta	2
41. United Arab Emirates	117
43. Russia	69
46. Maldova	4
49. Saudi Arabia	85
59. Vietnam	11
61. Mexico	76
66. India	63
69. Brazil	100
78. Iran	51
105. Tanzania	22
128. Yemen	126

SHUTTERSTOCK

SOURCE: GlobalInnovationIndex.org