BRIEFLY NOTED

Is Grid Modernization Always Cost Effective?

BY KENNETH W. COSTELLO

Some 60 percent of the U.S. electricity distribution system, which is the part of the grid that covers "the last mile" of delivering power to homes and businesses, is older than its 50-year life expectancy. It was designed when power plants in central locations exclusively controlled a one-way flow of electricity to customers. That is not the world we live in now; a modern system would accommodate greater consumer control and two-way flows of power, facilitating decentralized generation.

Grid Modernization (GM) can have different meanings, but it generally refers to actions making the electricity system more resilient, responsive, and interactive. GM investments digitize a utility's distribution system to improve operators' ability to monitor grid conditions, analyze those conditions with software, and take appropriate action in near-real time (e.g., restoring power after an outage). GM has the potential to improve the reliability of the electrical grid, better integrate alternative energy, and enable pricing that reflects the marginal cost of generation.

The U.S. Department of Energy (DOE) identifies five general GM technologies:

- integrated communications that allow for real-time information and control
- sensing and measuring technology that enhances rapid system and human responses
- advanced components such as electricity storage and superconductivity
- advanced control methods such as voltage optimization
- improved interfaces and decision support for distribution system managers

These technologies include advanced metering infrastructure and associated communications networks, intelligent grid devices for real-time or near-real-time system information, distribution system hardening projects for circuits and substations designed to reduce service outages or service restoration times, and systems or technologies that enhance or improve distribution system planning capabilities.

Previously in *Regulation*, Vanderbilt law professor Jim Rossi described state regulation that is stifling the development of new cost-effective long-distance transmission lines, which are what deliver electricity from far-away generators to the local distribution systems. (See "Promoting Cost-Effective Grid Modernization," Winter 2022–2023.) In this article I examine a very different problem: state regulations that promote the modernization of local distribution systems with little regard for costs.

The GM coalition / Proponents of GM vastly outnumber both skeptics and opponents. Proponents include utilities themselves, environmentalists, GM technology vendors, consultants, labor unions, and state and federal politicians and bureaucrats.

Environmentalists and some utilities, for example, view GM as necessary to satisfy "net zero emissions" aspirations. An example of this comes from a statement by the Union of Concerned Scientists:

> Grid modernization can deliver greater quantities of zero- to low-carbon electricity reliably and securely, including handling variable renewables like wind and solar power. It can support the electric vehicle revolution and increase grid resilience to withstand climate impacts. It can spread economic opportunity in rural and urban communities through electricity and transportation infrastructure investment and upgrades. And, it can improve system efficiencies and reduce costs by reducing the need for expensive and dirty power plants that only run a few hours per year.

The federal government has subsidized GM and encouraged its development. The 2001 Infrastructure Investment and Jobs Act will provide more than $65 billion for upgrading the grid. The DOE has established the Grid Modernization Initiative to help "create the modern grid of the future."

In my home state of New Mexico, the Grid Modernization Statute authorizes the state's public utility commission (PUC) to approve distribution GM projects. In evaluating utility-proposed projects, the commission must consider the reasonableness of the project and whether it would advance certain objectives like a reduction in greenhouse gases, facilitation of grid access for renewable and other forms of clean energy, and improved reliability and resilience. Other states have comparable statutes to encourage electric utilities to modernize their distribution systems.

Evaluation of GM / During my career in public utility regulatory economics, I have too often seen utility customers pay for the advancement of political objectives without their receiving compensatory benefits. Are we repeating this for GM investments? Or as one reviewer of this article expressed, "Is GM just another way to line utility pockets and promote renewable energy and kill fossil fuels"? While this view seems extreme, it may be close to the truth. Although special interest support for GM does not inexorably imply that GM has costs that exceed benefits, PUCs should be wary because utility customers will ultimately pay the costs.

PUCs should ask themselves two critical questions:

- Do the total benefits from GM to utility customers exceed the costs?

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- Will poor households overpay while wealthy households disproportionally benefit from their purchase of electric vehicles and roof-top solar systems that GM tries to accommodate?

Consider the until-recently darling of both environmentalists and the upper class: the Tesla automobile. To be sure, it is a technological marvel. But given its cost and limitations, is it really the right vehicle choice for nearly everyone, or is it just a good choice for households with incomes high enough to afford both a Tesla and a conventional vehicle? If the latter, then it is difficult to justify raising electricity rates on middle- and lower-income households to finance grid improvements to help upper-class households charge their second (or third) car.

There is great uncertainty about the benefits and costs of GM investments. Cost overruns are common, and benefits are difficult to quantify and require different methods of varying complexities. According to the Lawrence Berkeley National Laboratory:

> For jurisdictional utilities, grid modernization plans pose some new and complex challenges for state public utility commissions in determining whether projects will provide net benefits to customers. Plans typically include multiple grid modernization components that have interactive effects and are difficult to analyze or justify separately. Many benefits are hard to quantify or monetize, making it difficult to compare all benefits and costs. Part of the rationale for some grid modernization investments is to meet state energy goals, which can be difficult to quantify and account for in [cost–benefit analysis]. Equity issues arise when investments may benefit some types of customers more than others.

Under traditional regulation, utilities are allowed a return on capital expenditures only after the regulator has deemed the investments prudent or reasonable. But utilities and environmentalists have argued for, and regulators have accepted, new cost-recovery approaches for certain environmental investments. Wall Street has also supported these new approaches, forming an "Iron Triangle" of influential special interests that makes it difficult for PUCs to reject the proposals.

One popular approach is the increased use of "riders" or "trackers" that allow for cost recovery outside of the general utility regulatory framework. The greater the use of such exceptions, the lower the risk to utility shareholders from imprudent investment behavior, and the less shareholders monitor utility investments. Utilities protected from such consequences are more likely to invest prematurely, unnecessarily, or incorrectly when the consequences of such decisions fall on customers. Using GM as a justification, a utility can significantly expand its rate base to increase its profits while passing on most if not all risks to customers. This reallocates risk from diversified utility shareholders to utility customers even though the shareholders can bear risk at a lower cost than utility customers who cannot diversify across monopoly electricity-distribution providers.

GM investments are modular: a utility can spread out components over several years. Waiting to invest creates what analysts call an option value. Real options theory says that when the future is uncertain, it pays to have a broad range of options available and to maintain the flexibility to exercise those options. Stepwise investments over several years, as suggested by real options theory, may represent a more reasonable and cost-effective strategy than massive short-term investments that PUCs are under political pressure to approve and utilities and other groups favor. For example, a utility could create a long-term grid modernization plan with annual short-term action plans.

Utilities should be held accountable for subpar performance from GM investments. These investments have often fallen short of achieving the benefits included in utilities' proposed plans and have raised other concerns.

For example, there is evidence that reliability has not improved in states that have so far invested the most in GM. Critics have also questioned whether it is too soon to

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replace the current infrastructure. It may be cheaper to do incremental modifications than to leave costly current infrastructure stranded. Another criticism is that many customers receive few benefits from GM, especially low-income households. Advanced metering infrastructure (AMI) has in some jurisdictions failed to live up to its promise to realize dispatch efficiencies and cost savings. Most utilities have also under-exploited the benefits of AMI by failing to launch granular time-of-use rates (e.g., real-time pricing, electric vehicle charging rates) that could produce large efficiency gains. Another problem recognized by PUCs is utilities proposing to make large-scale, multi-technology investments, some of which have questionable, ill-defined benefits that may not emerge for several years, if at all.

Since GM plans are extremely expensive (in some instances over a billion dollars), regulators should demand that utilities demonstrate the benefits to customers from improved performance attributable to the capital expenditures recovered from those customers. Regulators can establish performance benchmarks to evaluate a utility and take appropriate action. Without accountability, a utility can perform poorly and still recover all its GM costs—an outcome that shifts all the risk of poor performance to customers.

Conclusion / Evaluating utility GM plans could be the most important task that PUCs will face in the coming years. My advice to them: judiciously review utilities' plans, which will improve the likelihood that a decision is in the public interest and not just beneficial to special interests. Experience shows that utilities have a propensity to over-promise and under-perform.

Of course, PUCs should not reject a GM plan just because it would require an increase in electricity rates. But, likewise, they should not accept a plan just because it would support clean energy and the state's energy agenda (which is one reason that PUCs have articulated), while ignoring the effect on utility customers. Instead, PUCs should approve GM plans that have net benefits for utility customers and for the state as a whole. Unaccountability in the form of moral hazard can have a devastating effect. Getting the incentives right is the key element for achieving socially desirable GM investments. *R*

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How to End the Kidney Shortage

BY FRANK MCCORMICK AND PHILIP J. HELD

News stories abound of kind people—relatives, close friends, and even complete strangers—who donate a kidney to someone suffering from kidney failure. These stories usually explain that people whose kidneys have failed must either obtain a transplant, which enables them to live 10–20 years in reasonably good health, or suffer on dialysis for an average of four to five years as their health steadily deteriorates until they die.

Sometimes these stories explain that many kidney failure patients never receive the optimal treatment of a transplant because there is a drastic shortage of transplant kidneys. About 125,000 patients are diagnosed with kidney failure each year, but only about 22,000 receive a transplant. In a 2022 *Value in Health* article, we estimate that more than 40,000 additional kidney failure patients would be saved from premature death each year if they received kidney transplants.

Recently, there have been news stories about xenotransplantation: the transplanting of animal organs (usually from pigs) into humans. These came after a patient with terminal heart failure received a genetically modified pig heart and lived for two months. That raised the hopes of many that this breakthrough might be extended to kidneys. However, Food and Drug Administration approval for xenotransplant kidneys will not occur for some time (if ever); the data from the first Stage One trial—which is merely the first step toward any approval—won't be available for at least a decade. It is extremely unlikely that anyone currently suffering from kidney failure will benefit from xenotransplantation.

Few if any of these news stories lamenting the kidney shortage or touting high-tech breakthroughs mention that we

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already have a solution to the shortage: compensating kidney donors to induce more supply. Frustratingly, the U.S. government is obstructing this solution.

NOTA is the problem / Virtually all economists who have studied the issue believe the basic cause of the kidney shortage is a provision in the 1984 National Organ Transplant Act (NOTA): "It shall be unlawful for any person to knowingly acquire, receive, or otherwise transfer any human organ for valuable consideration for use in human transplantation if the transfer affects interstate commerce."

This sentence seems innocuous, but it imposes a price ceiling of near-zero on the market for kidneys. Both economic theory and abundant evidence have shown that whenever the government holds the price of a good below the market-clearing price, it causes a shortage of that good. Moreover, if the government holds the price far below the market-clearing price (our 2022 article estimates that price would be about $80,000 per kidney), then the shortage will be huge: more than 40,000 kidneys per year in the United States alone. For context, that is more deaths than from motor vehicle crashes each year.

Compensation is the solution / To economists, the solution is straight-forward: allow kidney donors to be compensated. But this is not at all obvious to most non-economists, who fear it would lead to a world in which rich people would buy kidneys from poor people. Steven Levitt, co-author of the best-selling economics book *Freakonomics*, put the dichotomy this way in a May 2022 episode of his *People I (Mostly) Admire* podcast: "This is an interesting issue because it is one every economist agrees that of course we should have a market for kidneys, and virtually every non-economist thinks it is crazy."

Because there are a lot more non-economists than economists, that takes the policy option of a completely free market in kidneys off the table. Instead, policymakers must come up with some solution that allows kidney donors to be compensated but addresses the concerns of the public through regulation.

There does seem to be a consensus developing that the government should take on the role of compensating kidney donors, and it should distribute the acquired kidneys to all patients who need one. In a 2018 *PLOS One* article, we showed that poor people as a group would be much better off if donors are compensated than they are now when compensation is prohibited, mainly because many would-be kidney recipients are poor.

The tradeoff between the level of compensation and political feasibility / A crucial question remains: what level of compensation should the government offer to kidney donors? The answer is a political judgment call that involves the tradeoff between the number of patients saved from premature death and the probability of getting a particular law or regulation changed.

At the present time, the government offers virtually no compensation to kidney donors, just modest amounts for government employees and small amounts for some low-income donors and recipients through the National Living Donor Assistance Center (NLDAC). Consequently, there are only about 6,000 living donors each year. When added to the 16,000 kidneys from deceased donors, that is enough to save about 15,000 kidney failure patients per year from premature death (because the average kidney failure patient requires about 1.5 transplant kidneys to reach age 75).

Consider three alternative policies:

- Suppose the government decides to offset all disincentives to kidney donation, most notably the cost of travel and lodging near the hospital, the loss of income, and the cost of providing care for dependents. Donors also endure other costs of donating, such as the small risk of dying during kidney removal, the pain and discomfort of the procedure, the slight chance that the procedure will decrease the donor's long-term quality of life, and concern that a relative or friend may need a kidney in the future and the donor will no longer have an organ to spare. In a 2019 *Journal of the American Society of Nephrology*, we estimate that removing all these disincentives would be equivalent to compensating donors about $45,000 (in 2022 dollars) per kidney. Providing this compensation to kidney donors would induce about 14,000 additional living donors annually, which would be enough to save an additional 9,300 kidney failure patients from premature death each year. (See Table 1, row 2.)

TABLE 1
Rough Estimates of Additional Patients Saved from Premature Death by Government Compensation of Kidney Donors

	Equivalent to government compensation per donor (in 2022 dollars)	Additional donors induced (per year)	Patients saved from premature death (per year)	Political feasibility
Government offsets *only financial* disincentives facing living donors	$32,000	10,000	6,700	New York State recently adopted a similar law
Government offsets *all* disincentives facing living donors	$45,000	14,000	9,300	Opposed by some very influential medical groups
Government compensates living donors enough to completely end the kidney shortage	$80,000	70,000	47,000	Strong opposition to changing NOTA

- However, some very influential members of the medical community oppose the government removing what they call "non-financial" disincentives to donating. If the government were to instead cover only the financial costs, we estimate that would be equivalent to the government providing about $32,000 in compensation per kidney. That would result in about 10,000 additional living donors, which would save an additional 6,700 kidney failure patients each year from premature death. (See Table 1, row 1.) New York State recently passed a law that would have the state do precisely that for living donors.
- In contrast, the government could do more than just cover donors' pecuniary and nonpecuniary expenses. It could offer compensation to donors that would be high enough to completely end the kidney shortage. In our *Value in Health* article, we estimate that if the government offered living kidney donors about $80,000 per donor, it would be sufficient to induce about 70,000 additional donations from living donors, which would save about 47,000 people from premature death each year. (See Table 1, row 3.) However, this seemingly would violate NOTA and would arouse the strenuous opposition of those who are opposed to compensating donors for anything but narrowly defined expenses.

Organs from the deceased / Our discussion focuses on increasing the number of living, rather than deceased, kidney donors because the supply of kidneys from deceased donors is quite limited. Less than 2 percent of people die in a manner that allows the recovery of their organs for transplant. The United Network for Organ Sharing (UNOS), which oversees the supply of transplant organs from deceased donors in the United States, claims it recovers the kidneys in 75 percent of those cases, for a total of about 16,000 kidneys per year. (Some critics of UNOS suggest it should be able to boost its recovery rate, but even if it recovered 100 percent of potential deceased-donor kidneys, that would still leave us far short of the 70,000 needed to completely end the kidney shortage.)

Compensating the families of deceased donors (which is also not allowed under NOTA) would not be enough to end the shortage, but it would boost the recovery of other major organs, such as hearts and lungs, that can only be obtained from deceased donors. The level of compensation needed to substantially boost the supply of cadaveric donor organs would presumably be much less than the $80,000 needed to obtain enough living donor kidneys. (See "Paying for Bodies, But Not for Organs," Winter 2006–2007.)

Conclusion / The basic cause of the kidney shortage is the prohibition on compensating kidney donors. The solution is to find some way to compensate kidney donors that is acceptable to the transplant community and the general public. A consensus is developing that the government should compensate kidney donors and fairly distribute the resulting kidneys to patients who need one. But what level of compensation should the government offer?

There appears to be a tradeoff between the level of compensation and the amount of political opposition it will encounter. The higher the level of compensation, the more opposition it will face. That being the case, it would probably be best to start with just offsetting the financial disincentives facing kidney donors, as New York State recently did. Once the positive results of compensating donors are clear, that could provide the impetus for offsetting all disincentives facing living kidney donors. Further success could then open the way for providing compensation high enough to completely end the kidney shortage, which would save more than 40,000 people a year from premature death. *R*

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Which Is Better, a Larger or Smaller Population?

BY PIERRE LEMIEUX

Is population stagnation or decline a good thing or a bad thing? Last year, China's population declined for the first time in six decades, partly because of government limitations dating from the mid-20th century on the number of children per family. Many observers assume the decline is bad and that population growth is a good thing.

But this belief is often based on state interests. A large population is good because it provides conscripts and cannon fodder for the state in times of war. And a growing population generates new taxpayers to finance social programs for the elderly such as Social Security and Medicare.

On the other hand, since the 1970s, environmentalists have been recycling Thomas Malthus's arguments to claim that population stagnation or decline would be good because it would prevent or reverse environmental catastrophes. In his 1968 book *The Population Bomb*, Stanford biologist Paul Ehrlich warned that an exploding world population was hitting resource constraints and that, within a decade, food and water scarcity would result in a billion or more people starving to death. Governments, he opined, should work toward an optimal world population of 1.5 billion, a goal corresponding to 57 percent less than the actual population in 1968 and 81 percent less than today's 7.9 billion. In 1965, the *New Republic* announced that the "world population has passed food supply," and that world hunger would be "the single most important fact in the final third of the 20th Century." The "freedom to breed is intolerable," ecologist Garrett Hardin pontificated. Of course, those grim predictions haven't borne out.

Better arguments / Economics and philosophy offer analyses of population size and growth that are preferable to simplistic governmental and environmentalist viewpoints.

A major economic argument in support of population growth is that, ceteris paribus, more humans mean more trading partners and thus better opportunities for all. The late economist Julian Simon offered a related argument that more people increase the flow of human ingenuity, inventions, and new solutions for human problems.

In the field of religious ethics, Christianity and perhaps especially Catholicism have preached that married couples have a moral duty to engage in the creation of human beings with immortal souls. The larger the population, the better. One corollary seems to be that women should spend their fertile years having babies. At least in advanced countries, few individuals would now agree with that. Demographer Lyman Stone of the Institute for Family Studies defends a less demanding but still nativist Catholic doctrine: "More babies would be good," he writes, and "a genuinely novel political project" to that effect is needed.

Borrowed from a field of philosophy called population ethics, a secular and utilitarian argument has somewhat similar implications. Some philosophers have argued that a potential individual who is not born amounts to lost utility in the world, and this potential loss must count against the utility gained otherwise—say, by current consumers whose goods produce climate change. A philosophical counterargument to this is that a non-existent individual cannot be included in any utility calculus because there is no "he" (or "she") to include. Moreover, the number of non-existent individuals potentially to be born is conceptually infinite. And people who make "potential persons" arguments often seem to consider only *some* potential individuals. Perhaps their invocation of "our children" refers mainly to only "my" children and descendants.

Economics constrains ethics / Economic theory seriously challenges the moral utilitarian argument for population growth, as well as any such argument for limiting population. One insuperable difficulty is that utility is subjective—in the head of each individual—and it is impossible to add up utilities across individuals in an effort to, say, maximize total social utility. Economists say that interpersonal comparisons of utility are scientifically impossible. (See "The Future of Economics in the 1930s," Winter 2021–2022.) Philosophers may propose moral judgements that make some interpersonal utility comparisons possible, but if the latter are used by governments to impose compulsory controls, they are nothing more than the

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dictates of philosopher-kings.

Even if such utility calculations were theoretically possible or philosophically desirable, it would remain impossible to find the information they require about future conditions and consequences, which are shrouded in radical uncertainty. The assumption that the political authorities in charge of coordinating the level of population would be able and rightly motivated to perform such calculations is completely unrealistic.

The following illustration may be useful. If a couple increase by two (one boy and one girl) the number of their children, and those additional children and their descendants join with others to form stable couples who have two children each, the population will increase by about 32 persons (2^5) in four generations, roughly a century. If *all* families have two additional children, the population will greatly increase. Many people would assume this is good. But then, one of these new individuals may be a second Hitler and cause the killing of 50 million soldiers and civilians in a single generation. *We do not and cannot know.* Yet, economic and political theory and historical experience very strongly suggest that attempting to eliminate the possibility of such dangerous births would require a government with as much power as Hitler!

As for the religious argument for more babies, it is difficult to discuss rationally if it depends on faith.

Individual or collective choices / There is no reason to believe that the size of mankind should be the province of collective choices—which are, in practice, government choices. The only philosophical case for a collective choice, perhaps, would arise if mankind were in danger of imminent extinction. Like in so many other areas, economics (albeit with some minimal value judgements of the sort "live and let live") suggests that a superior alternative is usually available: individual choices in a general context of liberty. Let each potential parent decide, or agree on, what will be the number of his or her own children. These individual choices should determine the number of humans, instead of a certain group of individuals "collectively" deciding how many children families should have.

The Chinese experience in population planning shows how collective choices are not a paragon of rationality and nirvana. They are likely to have consequences that are later judged detrimental by many or most people and even by the government itself. China's decades-long limitation of one child per family has distorted the country's gender ratio in favor of boys because many parents aborted their first baby or committed infanticide when they discovered it was a girl. That now means that many Chinese men are being left out of the marriage market. Since 2021, the restriction has been eased to allow up to three children per family, but the reality of direct government intervention in family planning remains.

To summarize and conclude: From an economic viewpoint, population growth is not intrinsically good as state interest requires, nor is it intrinsically bad as the environmentalist vulgate decrees. It is a good guess that the more numerous is mankind, the larger the opportunities for beneficial exchange, which includes all sorts of voluntary relations between individuals. Population ethics cannot rely on interpersonal comparisons of utility, except if its pronouncements are meant as mere moral advice. The usefulness of such pronouncements is further limited by the inherent uncertainty of the future. Population matters should thus be left in the domain of individual choices, informed by people's preferences and moral values. *R*

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Psychedelics, the DEA, and Regulating Religion

BY VICTORIA LITMAN

There is a growing enthusiasm for the potential of psychedelic medicines. Psychedelics such as psilocybin (the active ingredient in hallucinogenic mushrooms) and 3,4-Methylenedioxymethamphetamine (better known as MDMA and ecstasy), among others, are expected to be approved by the U.S. Food and Drug Administration in the next few years as part of psychedelic-assisted psychotherapy. They will be used to treat a variety of ailments, including severe post-traumatic stress disorder and treatment-resistant depression.

Psychedelics, also called entheogens or hallucinogens, have been utilized by humans throughout recorded history in a variety of settings. Recent scholarship has linked psychedelics to early Christianity, and archaeology has found evidence of their use in early Judaism. Some current practitioners of both faiths are reviving those practices. Globally, including in the United States, indigenous peoples have been continually utilizing plant medicines, including ayahuasca and peyote, as part of community-based healing, tradition, ceremony, culture, and agriculture practices.

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Accordingly, the legal landscape of psychedelics is changing. Besides growing and promising FDA psychotherapy research, state and local legislative advocacy efforts are on the rise. In 2020 Oregon passed the Psilocybin Services Act, and in 2022 Colorado passed the Natural Medicine Health Act, both allowing some use of the substances. Over a dozen localities nationwide have passed local deprioritization measures, making enforcement of state laws criminalizing psychedelics the lowest-level law enforcement priority. This increasing normalization of psychedelics, though lacking clear pathways for safe access, has also contributed to a rise in religious use of psychedelics.

Religious use / The current legal framework for religious use of psychedelics is often reduced to the Religious Freedom Restoration Act (RFRA), a piece of federal legislation passed in response to the landmark 1990 case *Employment Division, Department of Human Resources of Oregon v. Smith*. Prior to *Smith*, claims that a law substantially burdened religious exercise were subject to the strictest scrutiny. But in *Smith* the U.S. Supreme Court put in place a threshold question: Is the law in question neutral and generally applicable? If so, then even if the law substantially burdens religious practices, it must only pass rational basis scrutiny, which is often viewed as no scrutiny at all. If the law is not considered neutral and generally applicable, then the burden shifts to the government to show that the law is narrowly tailored to further a compelling governmental interest.

This threshold question signaled a major shift in the Court's analysis, increasing the burden on religious communities fighting against laws they claim are burdensome, and the outcome was met with bipartisan opposition. When it was passed almost unanimously in 1993, the RFRA essentially re-established the compelling interest test, though *Smith* remains good law and was recently reevaluated in *City of Philadelphia v. Fulton*.

In 1997, the Supreme Court held that Congress did not have the power to pass the RFRA as applied to state officials. In response, many—but not all—states passed their own state-level RFRAs. Most of the drug law enforcement happens at the state level, leaving communities in states without their own RFRA without a solid defense.

Despite this, the federal RFRA can still be useful in claiming a religious defense or making a religious claim against a federal law or federal actor. In 2006, an ayahuasca church utilized the RFRA as a defense against the seizure of their sacrament by U.S. Customs Agents. The Court held, narrowly, that the Controlled Substances Act (CSA) burdened this specific church's ability to practice its faith, necessitating the U.S. Drug Enforcement Administration provide an exemption from the CSA. Apparently in response to this case and from the language of the RFRA, the DEA promulgated interim guidance for parties that want to petition for a religious exemption from the CSA.

The DEA cannot totally be blamed for failing to address the growing number of religious communities that use federally illegal drugs.

Religious exemptions process / The DEA exemption process is constitutionally suspect. Petitioners are asked to disclose all their (illegal) activity with no guarantee or protection from criminal charges, and they are told they must cease following the practices while waiting for a response. Moreover, the DEA has never voluntarily granted an exemption for a religious community. In 2006 and 2008, two churches, the Santo Daime and the Uniao de Vegetal, were granted exemptions by court order because of the 2006 Supreme Court case and an application of it in the 9th Circuit. Another religious group, Soul Quest, sued the DEA after waiting over three years to get a response. In 2021, the DEA's Diversion Control Division issued a final determination that, in the view of federal law enforcement, Soul Quest lacked religious sincerity.

The DEA's routine lack of response leaves most religious practitioners without a clear path forward to legal protection. Because of the requirement that churches disclose all drug-involved activities and then cease doing them until the DEA responds, applying for an exemption puts these churches at a higher risk of criminal enforcement. The legal risks associated with the petitions appear to outweigh any possible benefit to these communities. Many are advised by their counsel to not apply for the DEA exemption.

Regulating religion / Religious liberty is viewed as a core American value. The Free Exercise Clause and the Establishment Clause of the First Amendment are intended to strike a balance. People should be able to practice their faith without constraint and no religion is to be the official religion. This delicate balance results in avoidance by courts and legislatures in addressing religious sincerity for fear of establishment. The DEA cannot totally be blamed for failing to address the growing number of religious communities that use federally illegal drugs, and it is in no way qualified to decide about religious sincerity.

So, who is? As it currently stands, the Internal Revenue Service is the federal agency evaluating religious sincerity in the eyes of the law. Churches are not required to file to be recognized as 501(c)(3) tax exempt organizations, but many do because a determination letter may be required to open a bank account, rent property, or induce significant donations. One possible short-term solution to streamlining the DEA exemption process would be to create an automatic DEA exemption once communities have been granted tax exempt status. This would require a shift in IRS policy to allow for charitable organizations conducting illegal activities, something addressed in a

pending U.S. district court case, *Iowaska Church of Healing v. Rettig.* This streamlining process would still result in religious communities being forced to comply with the same tracking and storage requirements as other DEA-licensed medical researchers and professionals, arguably substantially burdening their religious practice.

To fully realize America's promise of religious liberty, we must remove any process that requires religious practitioners to prove their faith to a law enforcement agency before they are legally able to practice rites that involve psychedelics. At a minimum, we must shift the burden to law enforcement to prove fraud in cases where they want to enforce federal drug laws on religious communities from the outset. This is especially important as federal and state laws on drugs are increasingly diverging as states grow more liberal and the federal government grows more restrictive.

What does the least restrictive means for drug law enforcement look like once the drugs are legal? The government has a legitimate interest in public health, but it is not furthered by burdening religious practice and driving it further underground. Psychedelics are not inherently harmful, but they have the potential to result in harm because they can put individuals in vulnerable states. Any potential risks of harm are exacerbated by the activities being legally risky, discouraging practitioners from seeking medical or emergency services in the rare occasion they are needed. The first step to furthering the government's real interest in public health is decriminalization. The second step is to determine how the government, and the DEA in particular, can contribute to ensuring safe supply of substances for religious practitioners.

Conclusion / The religious use of psychedelics is on the rise because of a changing legal landscape, decreasing social stigma, and a growing mental health crisis. In the short term, increased demand for psychedelics and limited legal supply will serve to further the growth of the religious use sector of psychedelic access and use. This is not necessarily a bad thing; what can be called religious use has been a home of psychedelic and other mystical experiences for all of history because there is value in sustained community containers for integration of mystical or uncomfortable experiences.

Whether it be coping with a challenging psychedelic journey or processing the grief of a lost loved one, religious communities have a helpful role to play. In addition to a physical setting for safe and supported use of psychedelics, religious use (at its best) can provide a mental setting through theology to help users understand and process their experiences. There is significant evidence that spirituality and community contribute to wellness. Normalizing the religious use of psychedelics has the potential to increase general participation in organized religion, which if evolved can contribute to strong communities and supported and connected individuals. *R*

Where Are the Retirement Tontines?

BY LARRY POLLACK

The percentage of American workers currently covered by "defined contribution" (DC) retirement plans like 401(k)s is far higher than the percentage that has ever been covered by traditional "defined benefit" pension plans. In the United States, DC plan assets totaled $8.9 trillion as of September 30, 2022, according to Investment Company Institute data, and over two-thirds of that money was in private-sector 401(k) plans. In addition, much of the estimated $11.0 trillion of IRA assets as of that date was from 401(k) rollovers.

In retirement, the default way to make use of DC plan accounts is to withdraw funds ("decumulation") as needed or desired. This process risks participants running out of money before death or, on the flip side, spending less than was possible and not enjoying retirement to the fullest.

Surveys of employers and employees indicate interest in having options to generate lifetime income (to supplement Social Security benefits) from DC plan accounts. Congress has only recently started attempting to facilitate the conversion of DC plan balances into lifetime income. Under the influence of industry lobbying, Congress effectively endorsed the use of insurance products like annuities to provide such income in provisions of the 2019 SECURE Act. "Secure 2.0," which was part of the $1.7 trillion Consolidated Appropriations Act of 2023, further facilitates the use of insured products for retirement plans, primarily by relaxing aspects of the rules around required minimum distributions.

However, by addressing insured products only, Congress has implicitly, even if unintentionally, skewed the market to disfavor other approaches that would work better for many. Tontines are one such alternative. They are well-regarded noninsured financial arrangements that can be used to generate lifetime income from pots of money. They have proved successful in the United States and elsewhere. Unfortunately, they are likely not permissible for use by private-sector DC retirement plans. Congress would do well to consider retirement policy broadly to allow and facilitate the use of tontines, and possibly other non-insured arrange-

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ments, for converting private-sector DC plan accounts into lifetime income.

How tontines work / Tontines are uninsured longevity-pooled accounts that can be used to provide retirement income certain to last a lifetime. They are always fully funded and require no capital reserves.

When a member of the longevity pool dies, her remaining account is distributed among the surviving members. To illustrate this process, consider a pool of a thousand 65-year-old female retirees. If each contributes $100,000 to the pool (for a total starting fund of $100 million) and, in the following year, the fund earns 5 percent and seven pool members die, then the balance in each survivor's account at the end of the year is $105,740 ($100 million × 1.05 ÷ 993). In essence, the investment return of $5,000 is supplemented by a "longevity credit" (additional return) of $740 from the redistribution of the deceased members' assets.

A popular conception of tontines, perhaps inspired by episodes of the TV series *The Simpsons* and *Diagnosis Murder* and literary works like Agatha Christie's *4.50 from Paddington*, involves payments growing significantly over time to survivors or a winner-take-all payment for the last survivor. While tontines can be structured to provide such a back-loaded payout pattern, another use of tontine pooling is to create a stream of payments that lasts for life.

Absent pooling, a simple approach for a 65-year-old retiree to generate income from a $100,000 investment would be to calculate the annual income that could be supported over her life expectancy of approximately 23 years, assuming an expected 5 percent annual investment return. At the end of each year, payments for the remaining years can be recalculated based on the actual return that year and the resulting account balance. The initial expected annual income for 23 years in this example would be $7,414 per year. The math is the same as that used to calculate a mortgage payment.

TABLE 1

Expected Annual Investment Income, With and Without Tontine Pooling

Hypothetical example of a 65-year-old female making $100,000 investment	Projected annual income	Comments
23 years of withdrawals, no pooling	$7,414	Standard decumulation for a fixed period
Lifetime income, with tontine pooling	$7,857	Income lasts for life by construction

But the retiree has a good chance of living more than 23 years and the investment fund would be depleted in 23 years. (If she dies during the 23 years, the remaining fund goes to her heirs.) For some people, the risk of outliving one's retirement savings, or lowering the annual payments along the way to make them last, is unacceptable.

One way to make income last for life would be to buy an annuity from an insurance company, which is what Congress endorsed in SECURE and Secure 2.0. Another way is to join a tontine that pools longevity and uses the remaining accounts of pool members who die to provide income to survivors.

Doing the same mortgage-type calculation described above to the end of the assumed mortality table, except making each payment conditional on surviving to the time of payment, results in $7,857 of annual income for life, 6 percent more than the $7,414 without pooling that can be provided for 23 years only. The incremental income in terms of both annual amount and potential duration of payments is from longevity credits, i.e., the money left over from people who die, plus subsequent earnings thereon, allocated to the pool of survivors.

Table 1 summarizes the expected annual income for a group of pooled 65-year-old females, with an approximate life expectancy of 23 years, each investing $100,000 and reasonably expecting to earn 5 percent annually.

In a tontine providing lifetime income, the annual amount would be recalibrated each year to reflect the difference between the actual and assumed investment and mortality experience during the prior year and (possibly) changes in forward expectations.

Tontine pooling can be used to generate different payment patterns, such as benefits continuing until the possibly later death of a spouse. Longevity pools need not be uniform in terms of age and/or gender. Open pools with new entrants that exist indefinitely are

possible. Tontine longevity pooling could even be applied among people with different underlying investments, allowing each person in a longevity pool to express a personal investment risk/return preference.

Tontines vs. insured annuities / Insured income annuities pool longevity similarly to a tontine providing lifetime income. But there are important differences, and many of them support the use of tontines.

One major difference is what happens when mortality or investment returns differ from expectations. For example, if people in the longevity pool live longer than anticipated or investment returns fall short of expectations, insurance companies generally absorb those losses, and—conversely—benefit from the gains if experience is in the other direction. In a tontine providing retirement income, there are no such guarantees, and pool participants absorb variations in experience, good or bad, through adjustments to their income. Existing tontines often embrace a modicum of investment risk in the hope that income will increase over time.

The guarantees provided by insured annuities are expensive. Capital reserves must be maintained to back them. Non-mutual insurance companies have shareholders demanding profits. Insurance companies can have significant overhead. Depending on the product, hedging programs and complicated financial engineering may be involved. All else equal, in forgoing the guarantees provided by insurance contracts, tontines should provide higher lifetime income on average through the reduction of expenses.

Another difference between tontines and annuities is the latter's default risk. Discussions of the pros and cons of insured products rarely consider the risk that even highly rated insurers will be unable to make good on their guarantees. This implicit absolute faith in insurers may be overly presumptuous.

In the low interest rate environment of recent years, the insurance industry underwent a restructuring in a search for yield to fund their promises. Nontraditional (and risky) investments, the offloading of policy guarantees to offshore reinsurers to take advantage of more lenient regulatory regimes, and more complex forms of insurance company ownership structures and affiliations (often involving private equity firms) have almost surely increased policyholder risk. Because these developments are relatively recent, it remains to be seen how the industry and specific companies will fare in a challenging economic environment. State guarantee funds provide some protection to policyholders for insurer default, but it is limited.

Retirees receiving lifetime income associated with a 401(k) plan who suffer a loss from an insurer defaulting are unlikely to be successful holding the plan sponsor accountable, which is as Congress intended in SECURE. Tontines, being mutual pools without external guarantors, are not subject to default risk.

Existing tontines / In the United States, CREF (the College Retirement Equities Fund) is a $200+ billion multiple employer DC plan serving colleges, universities, research organizations, and other nonprofits. It was created in 1952 by the Teachers Insurance and Annuity Association of America (TIAA), an insurance company providing traditional insured annuities to the same groups, to give participants opportunities for higher retirement income associated with investing in riskier assets in exchange for bearing the market risk. Both TIAA and CREF are effectively nonprofits.

CREF's product is called a "variable annuity" (not to be confused with retail products with that name), but it is effectively a tontine. CREF longevity pools are open, with new entrants being added continuously. Participants can select and even change investments during retirement, although they cannot change the form of benefit once started; this prohibition is needed for fair longevity pooling.

There are also retirement plans sponsored by U.S. national umbrella church organizations that provide lifetime income through tontine-like pooling under Section 403(b)(9) of the Internal Revenue Code. However, these arrangements are not permissible in 401(k) plans.

Tontines are gaining traction in other countries. For example:

- The Longevity Pension Fund offered by Purpose Financial in Canada is essentially a tontine in the form of a mutual fund that launched in 2021.
- The University of British Columbia (UBC) Variable Payment Life Annuity (VPLA) is like CREF, on which it was modeled. Canadian income tax regulations were issued in June 2021 to facilitate the further development of VPLAs more broadly.
- In Australia, at least one of the "superannuation" funds that manage and administer mandatory retirement savings pools and accounts (as in a DC plan) launched a "LifeTime Pension" option. It is essentially an income tontine modeled on the UBC VPLA.

There is no reason from a retirement policy perspective that tontines should be permissible for church plans under IRC Section 403(b)(9)—as well as public sector plans not subject to most federal pension rules—but not for private-sector DC plans. There also is no reason from a technology perspective that tontines couldn't be used in many other contexts within and across plans and plan sponsors.

Now that policymakers are focused on lifetime retirement income, it's time for them to level the playing field and facilitate tontines having a place in the evolving U.S. DC-based private sector retirement system. *R*

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