An idea from insurance history and behavioral economics could be used to entice low risks into the health insurance pool.

Tontines for the Young Invincibles

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Over a third of all uninsured adults below retirement age in the United States are between 19 and 29 years old. When young adults, especially men, age out of the dependent care coverage provided by their parents' employment benefits or public health insurance, they often go without, even when buying insurance is mandatory and sometimes even when that insurance is a low-cost employment benefit. In health policy parlance, these people are known as the "young invincibles" and are considered unreachable by ordinary health insurance. As these young adults grow older, most of them eventually join the health insurance pool. But some of them face serious medical needs during the uninsured period, and their lack of insurance for those needs imposes costs on others in society, not to mention the consequences for themselves.

Policymakers have suggested a number of ways to get this group into the health insurance pool. One obvious approach would be a universal health insurance program. Alternatives include requiring employers to increase the maximum age of children who may be covered under their parents' health care benefits, raising the maximum age for participation in state-based public insurance programs, or mandating that individuals carry insurance. All of these are costly and/or involve an element of coercion.

Instead of forcing them to buy something they do not want or making others subsidize that purchase, what about offering the young invincibles a product they would be more willing to pay for? Insurance history and behavioral decision research suggest that insurance is just like other consumer products or services — different people have different reasons for buying it (or not). Young adults in particular tend to feel "invincible," as if no serious harm could ever befall them. And of course, there is not much point in getting insurance that you believe you will not need, which in part explains why this group is reluctant to buy coverage. Whether or not their beliefs are rational, the invincibles are unlikely to be interested in insurance for classic prudential reasons. To reach them, we propose an idea that had great success in the 19th century life insurance market: tontines.

Tontine health insurance would pay a cash bonus to those who turn out to be right in their belief that they did not really "need" insurance after all. The simplest arrangement would award the bonus to those who did not consume more than a threshold value of medical care during a three-year period, potentially excluding preventive care. Tontine health insurance differs from ordinary health insurance or managed care in one main respect: Ordinary health insurance provides a tangible benefit only when you need health care. Tontine insurance pays a cash benefit when you *don't* use it, as well as covering your medical expenses when you do. As such, tontine insurance is structured to be maximally attractive to those who have an overly optimistic assessment of risk.

TONTINE INSURANCE

There are only a few current analogs to tontines — and nothing remotely like them in health insurance, as far as we know. But insurance products that pay off in both good and bad times were once incredibly successful in the life insurance market. They were so successful, in fact, that they fueled a massive inflow of funds into the coffers of life insurers, resulting in a major political backlash that shaped the overall architecture of the financial system in the early 20th century. That history is worth reviewing, because it reveals how attractive a bonus fea-

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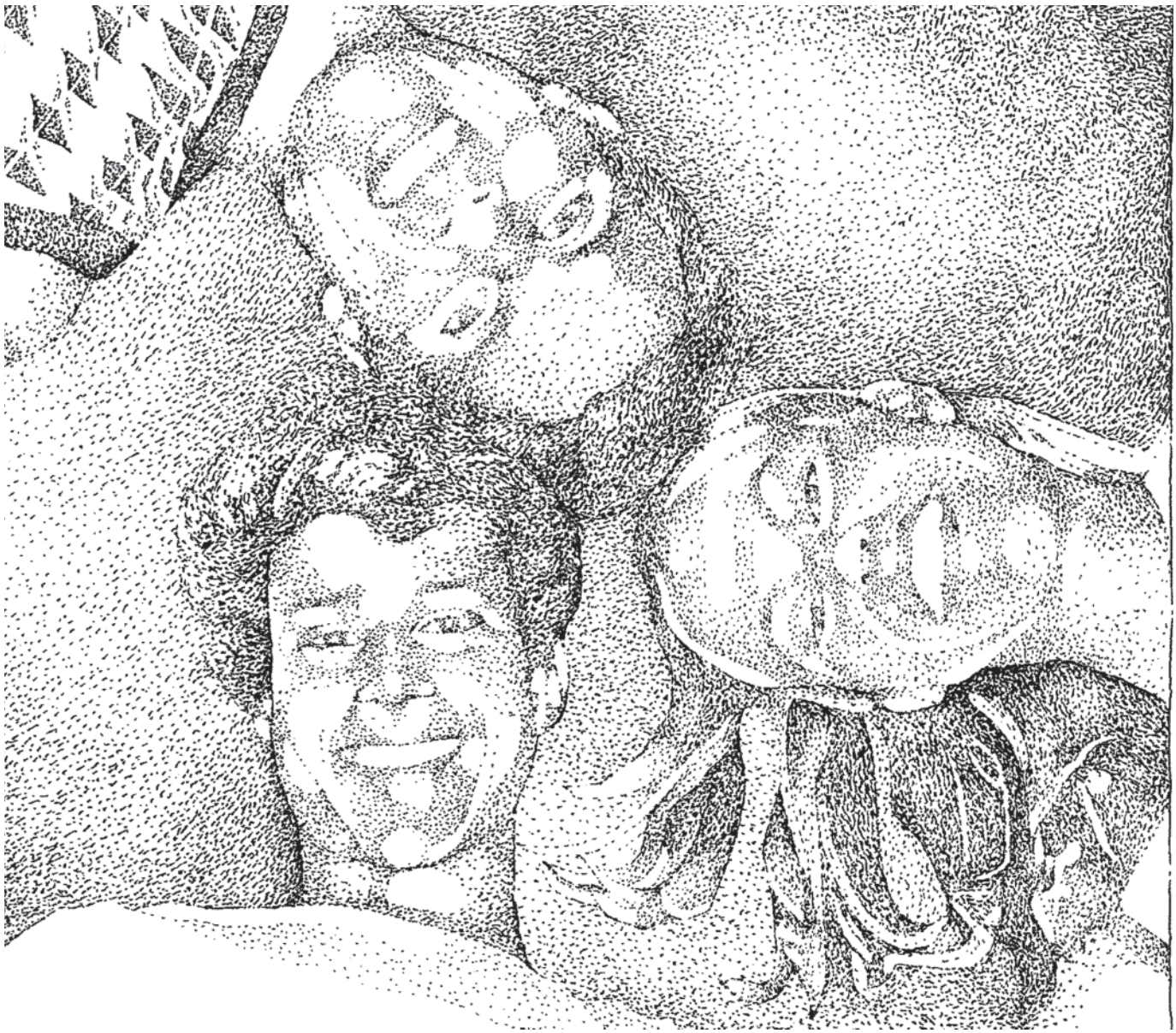
ture can be to those who are reluctant to purchase insurance.

Tontine life insurance emerged in the United States in the mid-19th century and became a resoundingly successful alternative to traditional life insurance. A tontine life insurance policy paid a deferred dividend to policyholders who timely paid their life insurance premiums for a specified period: 10, 15, or 20 years, depending on the policy that the applicant chose. People who died earlier would get the stated death benefit, but they would not receive any share of the dividends. The tontine, on the other hand, offered a cash benefit to customers who otherwise might think that they had lost their bet with the insurance company by "living too long."

Tontines were explicitly designed to appeal to non-standard motives for buying insurance. Historian Timothy Alborn quotes an early 20th century English insurer — discussing the "noble work" of selling life insurance — who suggested that "man is essentially a gambler, and it is in this feeling that he may score off the insurance companies ... that induces him to insure." One broker advised that customers who were "fond of excitement" could be induced to buy insurance by a bonus scheme that added "a zest to life compared to which Kaffir Ketchup is insipid."

Tontine life insurance was wildly popular and companies selling tontine policies became the largest financial institutions of their day. Unfortunately, the vast sums that the companies accumulated proved too tempting to some managers of the leading firms. The result was a scandal and investigation in 1905 that rocked the life insurance industry more profoundly than anything since. In the aftermath, tontine life insurance was outlawed — not because there was anything wrong with it per se, but rather because its success allowed the life companies to amass enormous reserves that led executives to public extravagance and gave them too much influence over other companies whose shares they purchased as investments with their reserves.

TONTINES FOR HEALTH The payoff from this history lies in what life insurance tontines teach about the potential for insurance that allows people to "back their own lives" (or health). Rational economic actors understand that insurance is a way to reduce risk, and is thus valuable even when



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nothing goes wrong and it is not "used." But many people do not see insurance that way; rather, they view health insurance as a kind of bet against their own health, since it "pays off" only when they are sick and need to make a claim. Just as 19th century consumers found ordinary life insurance unattractive but rushed to buy a product that allowed them to bet on their own longevity, the tontine feature could change the equation for today's consumers. Tontine health insurance should be especially enticing to people who do not purchase coverage because they think they would "lose" the ordinary health insurance bet by being healthy — the invincibles.

A tontine health insurance policy would pay a deferred dividend to a policyholder who maintains his or her health insurance for a specified period — we suggest three years, but this is an arbitrary number that could easily be changed based on market research. Significantly, the amount of the dividend would depend on the extent to which a customer uses the insurance. The young invincibles who turn out not to use very much insurance would share the dividend, while those who use more would get their benefits from the policy exclusively in the form of the covered health care they received.

The simplest arrangement would condition eligibility for the dividend on the participant not having consumed an aggregate dollar value of medical care above a pre-set threshold amount over the relevant period, perhaps with the cost of preventive care not counting against the threshold (in order to encourage preventive care). More complicated plans might require participants to receive preventive care to be eligible for the dividend and, instead of a single three-year period, there might be annual or even quarterly periods, each subject to lower thresholds, offering participants the ability to lock in some dividend rights as long as they did not exceed the threshold during the shorter periods. In addition, the program might offer periodic lottery-like prizes to eligible participants to help address the problem of excessive discounting of the future to which many young adults seem prone.

WHO LACKS HEALTH INSURANCE, AND WHY?

According to estimates based on the Current Population Survey, some 47 million Americans went without health insurance for some period in 2008. (There are some criticisms of this estimate, but they do not bear on this discussion.) Economist Jonathan Gruber notes that roughly 32 million of the uninsured were in families with incomes below twice the poverty line. Those people may be too poor to buy health insurance and are not the targets of our proposal, although some of them might nevertheless respond positively to it. Our chief audience is the remaining 15 million uninsured who are not poor or near-poor.

Rather than looking at the uninsured by income, we can look by age. One third of the non-elderly uninsured (those less than 65 years old) are between the ages of 18 and 24, and just under one-third are between 19 and 29. Of this group, roughly half have incomes greater than 200 percent of the poverty line. They are the special focus of our proposal.

As Figure 1 illustrates, 80 percent of people have insurance at age 18 (presumably through their parents or through Medicaid), and nearly the same share have insurance at age 30, but in the intervening years, the proportion drops to just over 60 percent.

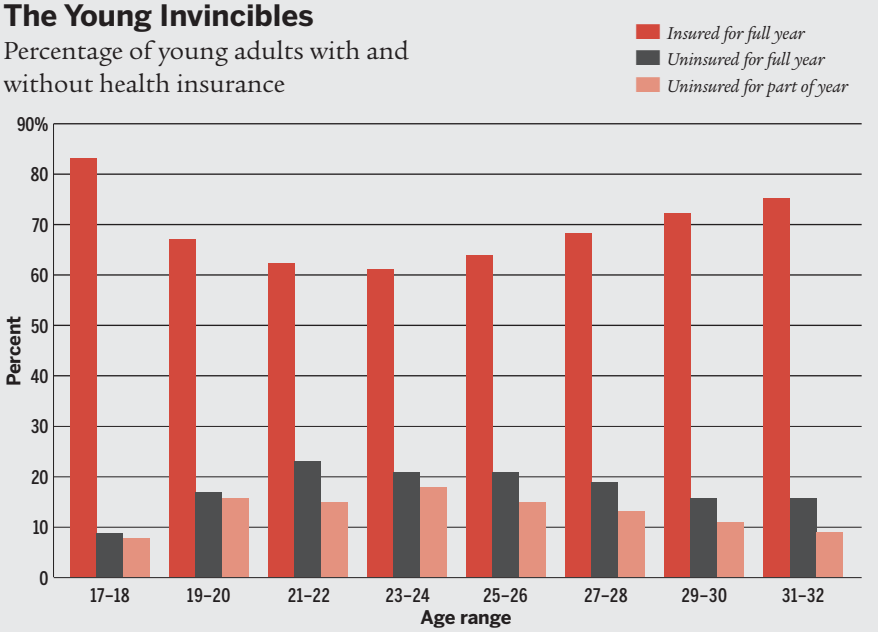
TOO EXPENSIVE? Many of the uninsured cannot get insurance from their employer, and much health insurance available on the individual market is quite expensive. One plausible story is that the uninsured are making rational comparisons between the cost of insurance and their risk of illness, and when they find that insurance is over-priced — given their risk aversion and a realistic assessment of their own risk of illness — they choose to forgo it.

But there is a problem with that story: there are low-cost health insurance policies for young people that appear quite affordable. For example, Tonik is a health insurance plan available in a half-dozen states that is marketed explicitly to the young (with a website featuring "hip" graphics, funky typefaces, and slang) and sold directly to individuals. It offers a plan with a $5,000 deductible, $20 co-pays for four in-network office visits per year (which are not subject to the deductible), and some benefits for prescriptions and vision expenses (also not subject to the deductible). The premium for California and Georgia residents is quoted as being "as low as $70 per month." That represents an annual premium of $840, only 3.7

Figure 1

The Young Invincibles

Percentage of young adults with and without health insurance



SOURCE: *"Health Insurance across Vulnerable Ages: Patterns and Disparities From Adolescence to the Early 30s," by Sally H. Adams et al.* Pediatrics, *Vol. 119 (2007).* NOTE: *Figure is based on data from 48,800 responses to the National Health Interview Survey.*

percent of the annual income of a single person earning twice the poverty line, and less than the cost of auto insurance in many jurisdictions.

Of course, whether Tonik is a good buy depends on one's degree of risk aversion, one's likelihood of needing various types of medical treatment, the coverage Tonik provides, and the possibility of alternative (free) care for those whose medical bills exceed their assets. Nevertheless, at least as a first approximation, the existence of such policies suggests that at least some portion of the uninsurance problem for young adults remains unexplained by conventional economics.

BEHAVIORAL FOIBLES A second possibility is that the young uninsured are not making rational judgments in the face of excessively high prices, but are instead reacting irrationally. A simple but appealing story is that they underestimate the probability that they will get sick and need health insurance. This is a kind of optimism bias that has been well documented in many other contexts, and is especially common among young people. Simply put, many young people tend to have an unfounded belief that bad things will not happen to them. Such a belief, whether mistaken or not, obviously makes insurance less attractive — why pay to cover losses that you "know" you will not experience?

Psychological research suggests an important reason why the young should be especially likely to experience optimism bias — they tend to lack relevant experience with negative outcomes. As a 2004 paper in the journal *Psychological Science in the Public Interest* put it,

> Experience matters.... Drivers who have been hospitalized after a road accident are not as optimistic as drivers who have not had this experience. Similarly, middle-aged and older adults are less optimistic about developing medical conditions than their younger counterparts are, presumably because older persons have had more exposure to health problems and aging. Acutely ill college students (approached at a student health center) perceive themselves to be at greater risk for future health problems than do healthy students, indicating that risk perceptions can be "debiased" if the person has a relevant health problem. Acutely ill students, however, continue to be unrealistically optimistic about problems that do not involve physical health.

Companies trying to market basic health insurance to young people found that such buyers were often uninterested in plans that offer bare-bones (major medical) coverage for premiums of $50 to $100 a month. "What came through loud and clear in focus groups," noted a 2005 *Wall Street Journal* article, "was that people didn't see value in a [catastrophic coverage] plan with just a high deductible," apparently because they viewed such a plan as paying for something they would probably never use.

WHY TONTINES SHOULD BE ATTRACTIVE

It is easy to see why optimism bias makes insurance less attractive. Young invincibles do not appreciate the need for insurance, precisely because their subjective assessment of the probability of loss is too low. For example, imagine a loss of $100 that occurs with an objective probability, call it p, of 10 percent. But suppose a potential insured optimistically believes that the probability of loss is really only 5 percent. We can call this subjective (and incorrect) probability q. The objective expected loss and the fair premium are each $10, but an optimist would conclude that he is being asked to pay twice his subjective expected loss ($5) for coverage of this risk, making it an unattractive proposition unless he is extremely risk-averse.

Now imagine not an insurance policy, but a "prize" that is given out whenever, based on the previous example, the loss does *not* occur. The prize pays $25 with a 90 percent probability $(1 - p)$ and nothing with a probability of 10 percent. Of course, an invincible optimistically believes that his probability of winning the prize is $(1 - q =)$ 95 percent. Consider bundling this prize with insurance against the $100 loss described earlier. Of course, the insurer has to charge a premium to cover the cost of the prize, but if it charged $32.50 ($10 for the insurance plus $22.50 for the prize), it could do so and still break even. Although the insurance contract by itself will be unattractive to some invincibles, the perceived subsidy from bundling a prize should induce some of them to sign up for the prize/insurance combination. The reason is that the optimist's under-assessment of the probability of loss is at least partially matched by his over-assessment of the probability of gain. The availability of the tontine "prize" balances out the young invincibles' unwarranted undervaluation of the insurance. In fact, tontine health insurance has a kind of "ju-jitsu" element to it, because it uses consumers' very irrationality to induce them to make welfare-enhancing choices they would otherwise forgo.

It is important to be clear that adding the prize is only guaranteed to work if the wrongly perceived "extra" value of the prize is as large as the wrongly perceived "discounted" value of the insurance bundled with it. But there are several reasons to think that, in practice, the prize/insurance bundle might be more attractive than this. The first reason is history. The prize/insurance bundle was tremendously successful in the life insurance context, despite the fact that the rationally expected prizes were small. The second reason is that real insurance is not complete (most significantly because of deductibles) and not fairly priced because of loading charges, both of which reduce the wrongly assessed value of the insurance that the prize needs to offset. Third, it is plausible that optimists may be loss-averse as well as overly optimistic. They misperceive the risk but they are still willing to pay some amount above the actuarially fair price of the risk that they do perceive, further reducing the discount that the optimist places on the value of the insurance; and they may even prefer risk for small gambles, which of course makes the prize more attractive than it would be on purely actuarial grounds.

Finally, the fact that insurance is socially desirable to purchase increases its perceived value even to an optimist, who presumably is just as motivated to do socially acceptable things as everyone else. So, for example, a young man might be willing to pay significantly more than what he perceives to be the actuarially fair price for health insurance, not only because he

is risk averse, but also because that will make his mother happy and make him feel responsible. He is not willing to buy the insurance as it exists today because the price is just too far from what he thinks the insurance is worth, even considering risk aversion and social expectation, but the gap between the price and the willingness to pay is smaller than his optimism alone would predict. These other factors should not substantially affect the prize side of the equation. The loading charge for adding a prize element to health insurance should be close to trivial. Risk aversion does not appear to be symmetric, as research suggests that people actually have a taste for gambling as long as the stakes are not too large. Finally, his mother is not likely to care very much that he chose the insurance policy with a prize, especially if it is called something more socially acceptable than "prize" or "tontine." We will call the prize a deferred dividend and market tontine health insurance as a tool that helps young people save for the future. His mother will like that and, we predict, so will he.

Given the political economy of health care and the widespread belief that we will need to publicly subsidize insurance for the currently uninsured, one legitimate concern for public policy is the size of such subsidies and the extent to which they are directed toward those who currently lack insurance, rather than just making health insurance cheaper for those who already have it. Finding a way to make insurance more attractive to the uninsured, without "wasting" funds by making it cheaper for those who are already insured, is thus a difficult institutional design issue. At every income level, most people are insured. Basing subsidies for health insurance on income would thus result in spending considerable sums on those who are already insured, while netting relatively few uninsured. Tontine health insurance can help to mitigate this problem. Allowing private insurers to bundle prizes with health insurance requires no governmental outlay at all. At least from a budgetary perspective, this is a zero-cost strategy for reducing uninsurance.

DESIGN OPTIONS If we are to be true to the tontine idea, then the payoff in the good state of the world should be a deferred dividend paid to people who did not otherwise use their insurance, rather than a monthly prize or other lottery for which all policyholders are eligible. An actual tontine health insurance product would obviously require extensive consumer research, for which our discussion is no substitute. Instead, our goal here is to describe some of the ways that a tontine health insurance product could be designed and to highlight some of the more important choices involved in the design process.

Analytically, the components of a tontine policy are the eligibility threshold (what it takes to qualify for the prize), the size of the prize itself, the duration of the eligibility period, and the size of the premium. Of course, these are not completely independent parameters; for example, the choice of a threshold and a prize amount will determine the premium the insurer must charge to break even.

In this section, we consider a back-of-the-envelope empirical implementation of a tontine health insurance policy. We envision the tontine element bundled with an ordinary health insurance policy (as sold on the individual market), rather than being priced separately. Our calculations are meant to give a rough sense of how much the tontine add-on might be expected to raise premiums and what kind of "prizes" could be offered. We rely on the Medical Expenditure Panel Survey data for 2006 to calibrate the relevant parameters. We divide the population of uninsured 18- to 29-year-olds by gender, but do not attempt to differentiate them any further. We assume a tontine period of three years and further assume that the rate of return on invested premiums is just equal to the load factor, allowing us to ignore those issues. In addition, we assume that individuals' health care expenditures are independent across years. This is a conservative assumption that, if relaxed, would in most cases allow us to offer larger tontine prizes at the end of the period.

Our tontine policy can be described by four parameters, of which any three can be chosen by the insurer. They are:

- the size of the tontine prize at the end of three years
- the amount of monthly premium collected to support the prize
- the threshold for spending over the previous three years that defines eligibility for the tontine prize
- the share of all insureds who are eligible for the prize (i.e., they spend less than the threshold amount)

If we assume the insurance market is competitive, the expected prize has to be equal to the premium, so that insurers earn neither a profit nor a loss providing the prize.

According to a report by America's Health Insurance Plans, the average monthly health insurance premium of 18- to 29-year-olds in the individually insured market was about $120 in 2006–2007. We consider additional monthly premiums for the tontine prize of $10, $25, and $50, and eligibility thresholds of $250, $500, $750, and $2,000. This yields a 3 * 4 matrix of possible prizes that could be offered, consistent with the insurer's breakeven constraint, which we display in Table 1.

To see how the table works, consider an additional monthly premium for the tontine prize of $10 in the first row. Imagine that we awarded a prize to any male who, after three years, had spent less than $250 in covered medical costs. In that case, we

Table 1

Reward for Good Health

Size of tontine prize for various monthly premiums and spending thresholds *(Insured 18- to 29-year-old men only)*

Monthly Tontine Premium	Three-Year Spending Threshold			
	$250	$500	$750	$2,000
$10	$878	$720	$643	$493
$25	$2,195	$1,800	$1,607	$1,223
$50	$4,390	$3,600	$3,214	$2,466

SOURCE: *Authors' calculations based on MEPS data for N=1,376 men ages 18–29, for 2006.*
NOTE: *"Premium" is for the tontine element only, and excludes the premium for insurance itself.*

could give a prize of $878 to those who qualified and still have the operation break even. The key fact that underlies Table 1 is the relatively low health care utilization rate of 18- to 29-year-old men. For example, 41 percent of insured 18- to 29-year-old men reported spending less than $83 on medical care in 2006 (less than $250 over three years, on our assumptions). This means that the prize that can be awarded for spending less than $250 over three years is only (1 ÷ 0.41 =) 2.4 times the total premium collected. As the threshold gets larger, the percentage of participants qualifying for the prize necessarily increases, so a $10 per month premium can only support a $493 prize if the three-year spending threshold is $2,000. (Women are more likely to use health care than men, so the corresponding prizes for women are larger by a substantial degree; at the $250 threshold, for example, the prizes for women are almost twice as large as for men.)

Suppose instead that we want to award a prize of $5,000. Similar calculations reveal that a monthly premium of $10 could only support an expenditure threshold of $0, and even then, only one-third of those who met the threshold would be able to collect.

From a policy perspective, it might make sense to exempt preventive care expenditures from counting against the tontine threshold as a way to encourage investments in vaccinations, routine checkups, and so on. If we adopt a crude definition of "preventive care" as everything except emergency room and in-patient hospital expenses, we can examine the effects of excluding such expenses from counting against the eligibility threshold. Since men use less "non-preventive" care than total care, the prize that can be offered for a given premium and threshold is smaller when "preventive" care does not count toward eligibility. We find that the prizes that can be offered to men for a given premium are about 50–75 percent as large as in Table 1 if we exclude everything but emergency room and in-patient expenses from counting toward the threshold. Excluding "preventive" care substantially lowers the size of the prize available to women, cutting the amount by more than two-thirds for the lowest threshold.

SO WHERE ARE THEY?

A natural response to our proposal is to ask why we do not see tontines in today's health insurance market if they make such good economic sense. A short answer to this question is that something very like a health tontine is already being marketed in China. There, the Ping An Life Insurance Company recently began selling "policies that combine life, accident, hospitalization, critical disease, endowment and dividend features," as described in a recent paper by Cheris Shun-ching Chan. Like insurance companies in other developing countries — including the United States in the 19th century and Japan in the mid-20th century — Chinese insurers have found that deferred dividends appeal to the insurance-resistant.

A longer and admittedly more speculative answer revolves around the longstanding effort to separate insurance from gambling, a related commitment among insurance practitioners to an understanding of insurance that leaves little room for "spicy" insurance products, the self-conscious transformation of health insurance companies into health care companies, and lingering (but misplaced) concerns about the legality of tontines.

GAMBLING Until Parliament passed the Gambling Act in 1774, it was possible and indeed common to purchase insurance on a stranger's life in Great Britain. Such insurance came to be condemned as gambling, and the Gambling Act was part of an effort to separate insurance from undesirable speculation. All U.S. states adopted the Gambling Act's prohibition on the purchase of insurance for anything in which the purchaser did not have a legitimate interest.

When early 20th century reformers sought to pacify the powerful mutual life insurance companies that profited from tontine life insurance, they used all the rhetorical tools at their disposal — including the conceptual link between tontines and gambling. With their success in 1906, tontine life insurance was banned. To this day, the fact that some life insurance companies did not participate in the "tontine affair" of the late 19th-century life insurance industry remains a point of pride among their employees. Tontines' largely undeserved bad reputation helps to explain why deferred dividend health insurance has not been offered in this country.

RISK MANAGEMENT U.S. health insurers are committed to a particular view of insurance as a risk management device. The Blue Cross and Blue Shield plans grew out of efforts by doctors to provide financing for hospital care, and their leadership always resisted being considered part of the insurance industry at all. Although the big commercial U.S. health insurers like Aetna and CIGNA mostly grew out of the life insurance business, the primary connection between the life and health businesses in those companies was a shared commitment to selling group policies to large corporate customers. Group life insurance, like group health insurance, is marketed in the United States exclusively as a risk-management product, not as a way to accumulate savings.

Aside from this shared marketing, the life and health divisions in a commercial insurance company have little to do with each other, and the designers of the health insurance products do not think of themselves as being in the same business as more "spicy" asset accumulation life insurance products that explicitly promote insurance as a savings vehicle. Accordingly, both the Blues and the commercial insurers share an understanding of health insurance as a health risk-management and risk-spreading product, not an instrument of wealth accumulation.

HEALTH INSURANCE AS HEALTH CARE The transformation of the traditional indemnity health insurance product into the plethora of managed care products that dominate the health insurance market today has made a health insurance tontine even less thinkable for an executive at an Aetna, CIGNA, United Health, or a Blue. Today, health *insurance* is about the administration of health *care*, and many people in the industry would deny that they are in the insurance business at all. The more health insurance becomes a business of delivering

and managing health care, the less plausible the tontine feature will seem to a health insurance company executive. Indeed, the tontine feature highlights the messy, morally ambiguous history of the insurance business, just the kind of thing that the health care financing industry MBAs and MDs are running away from as quickly as they can.

The recent efforts that some health insurance companies have made to develop new products that would be more appealing to young invincibles provides a useful illustration of the disconnect between the invincibles' preferences and the health insurance industry's assessments. As Tonik demonstrates, the marketing materials for the new policies reflect the need for some kind of "spice": there are snappy graphics, fast cuts on websites, and slang drawn from extreme sports. But the products are just stripped-down managed care policies that offer less coverage for a lower price. Those bland products may appeal to people who are not buying traditional health insurance because they need the money to pay the rent, but they are not going to appeal to people who do not think that they need health insurance at all. The invincibles will reason — correctly — that they are even less likely to "collect" under the stripped-down policies.

LEGALITY We have identified three potential legal concerns about insurance tontines, none of which would apply to a properly designed health tontine.

First, state insurance codes commonly prohibit insurance rebating, which is the practice of refunding to customers some or all of their premiums or providing some other benefit to them (other than insurance) in return for their premiums. This is not a serious problem, however, because the statutes explicitly permit rebating that is "plainly expressed in the insurance contract."

Second, New York and many other states passed legislation immediately after the 1905 Armstrong investigation that prohibited life insurance tontines. Significantly, this legislation applies only to "life insurance companies" and not to health insurance companies (which did not exist at the time of the 1907 legislation). Moreover, the primary objective of this anti-life-tontine statute was to prevent life insurance companies from using the deferred dividends to accumulate large surpluses over long periods, tempting insurers to engage in financial manipulation, a concern that would not apply to a health insurance tontine.

Third, states closely regulate games of chance and gambling, and there might be some concern in light of insurance history that tontine health insurance could be characterized as being in part a game of chance or a lottery. In our judgment, those laws would not apply to health tontines any more than similar laws would have applied to life insurance tontines. A health tontine is not a true lottery or game of chance. The participants' right to the dividend would depend on their own health experience: precisely the sort of legally permissible contingency that lies behind traditional health and life insurance, albeit in an opposite direction. And the amount of individuals' dividends would depend on the health experience of the group as a whole: precisely the sort of legally permissible contingency that lies behind traditional mutual insurance dividends.

CONCLUSION

Our positive thesis is that there is a significant and identifiable group of individuals — the young invincibles — who do not buy health insurance they can afford and "should" want. They wrongly believe that the insurance is not worthwhile because they optimistically believe that nothing bad will happen to them. Our normative recommendation is that health insurance should be reformulated so as to make it more attractive to the invincibles by taking advantage of their optimism. By bundling health insurance with a deferred dividend or "prize," insurers should be able to entice this group to buy coverage they would not otherwise choose to purchase. Prizes have historically been used to sell life insurance in much the same way, with great success.

But is this a good thing? Why should we "trick" people into buying insurance they would not otherwise want? We think that the case for doing so is actually quite strong, although we recognize not everyone will be convinced. First, there are possible externalities at play when the uninsured fail to secure care for communicable diseases, although efforts to quantify them suggest that their magnitude is probably small. The uninsured also rely heavily on the public fisc to pay for the care they do receive, but the amount of uncompensated care is also small compared to total health care expenditures, so the fiscal externality is not large. The strongest argument comes from the evidence that a significant number of young adults who lack insurance are hampered in their ability to seek medical care relative to those who are insured. So there is a plausible paternalistic rationale for getting the young invincibles enrolled in health care for their own good. As noted earlier, moreover, our proposal only works because it appeals to the invincibles' optimism bias. Anyone who is rational and immune to the bias should not find tontine health insurance attractive. Thus, we can be fairly confident that whoever is "tricked" into buying under our proposal suffers from a cognitive illusion that impairs his potential claim to be the best judge of his own interests.

Tontine health insurance has an additional advantage over other plans to cover the young invincibles: it would be much less coercive than insurance mandates and much less costly than subsidizing insurance to make it cheap enough to be attractive. Even those who disagree with the idea of extending coverage to the invincibles would presumably agree that whatever coverage we do provide should be done as cheaply and as light-handedly as possible. Tontine health insurance meets those objectives. R

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