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ABSTRACT

Subsidies and in-kind transfers give rise to negative fiscal externalities. However, internalizing negative fiscal externalities through taxation would undo the subsidy or in-kind transfer that caused them. Similarly, positive fiscal externalities cannot be internalized though government subsidies. This paper describes a mechanism that transfers fiscal externalities from the government to private parties. Such transfers generate incentives within the private sector to reduce inefficiencies caused by fiscal externalities. Thus, the paper offers a straightforward, but powerful, insight: transferring fiscal externalities to third parties extends the reach of the Coase Theorem to inefficiencies stemming from fiscal externalities.

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Fiscal externalities are pervasive. Any tax, subsidy, or in-kind transfer creates a fiscal externality. Unless it serves a Pigouvian function, the tax, subsidy, or in-kind transfer distorts behavior and leads to efficiency losses. These efficiency losses are substantial. Given that tax revenue accounts for about 20% to 40% of GDP in modern advanced economies, and estimates of the marginal excess burden are around 50% of revenue (Ballard, Shoven, and Whalley, 1985[3]; Kleven and Kreiner, 2006[9]), the deadweight loss from fiscal externalities created by taxation is around 5% to 10% of GDP.[1] Fiscal externalities from subsidies and in-kind transfers generate additional efficiency costs.

For environmental and other non-fiscal externalities, a negative externality can be internalized by imposing a tax equal to the marginal external effect. Once the externality is internalized, the behavior giving rise to the externality is no longer distorted. Similarly, positive externalities can be internalized by subsidizing the externality-causing behavior. Such Pigouvian taxes or subsidies are not a feasible instrument for internalizing fiscal externalities because they would undo the policy that led to the fiscal externality. Presumably, there are good reasons to have the policy that gave rise to the fiscal externality, and the associated efficiency losses, because otherwise the trivial solution would be to abolish this policy. For example, an earnings tax of 25% causes labor supply to have a positive fiscal externality of $25 per $100 in earnings. A Pigouvian subsidy of 25% on earnings would cause people to internalize this positive fiscal externality, but it would also be equivalent to abolishing the earnings tax.

Direct regulation of the externality-causing behavior, such as individuals' schooling choices or labor supply, can sometimes be used, but often faces limitations. For example, governments can make education compulsory until a certain age, but regulating how much individuals must work is not ethically feasible. More generally, the feasibility of using government regulations to get people to correctly internalize their fiscal externalities is limited due to formidable information requirements, given high heterogeneity in individuals' preferences, skills, and other circumstances.

The key contribution of this paper is a straightforward, but powerful, insight: if the government transfers an individual's fiscal externalities to a single private party, it is in the joint interest of the private party and that individual to engage in contracting that reduces the inefficiencies from the fiscal externality. Thus, the logic of Coase (1960)[6] applies to fiscal externalities, if those externalities are transferred to private parties. Moreover, introducing competition between these private parties creates incentives for them to invest in innovations that help reduce inefficiencies from fiscal externalities.

The general formulation of this insight invites several questions: How, specifically, are fiscal externalities transferred? Who are these "private parties"? How would these private parties con-

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[1]Because the marginal excess burden increases roughly linearly with revenue, the average excess burden is about half the marginal excess burden.

tract with individuals? How would they compete? What type of innovations might they make? Finally, why would they realize efficiency gains that the government could not achieve itself? The rest of the paper tries to answer these questions by sketching out a mechanism that transfers fiscal externalities to private parties and generates competition between them. The purpose of the sketch is to illustrate the main insight behind the mechanism, as well as its benefits and drawbacks, rather than to specify its exact implementation. The descriptions below are therefore best viewed as a thought experiment, rather than as a policy proposal.

In this thought experiment, the government's existing tax-and-transfer system operates as usual. However, each individual's fiscal externalities, both positive and negative, are transferred to a private party or "sponsor." Thus, the sponsor receives the tax revenue that the individual generates, while at the same time the sponsor must reimburse the government for any expenses incurred for this individual. The sponsor pays a predetermined sponsor fee (possibly negative) to the government that is equal to the individual's expected fiscal externalities. The sponsor has no coercive power over the individual. Individuals, if they choose, are free to ignore their sponsor.

Because the sponsor and the individual together receive any change in total surplus resulting from changes in the individual's behavior, it is in their joint interest to agree on behavior modifications that increase total surplus, and then to divide the increased surplus between them. Thus, individuals are better off if they have a sponsor, and sponsors are better off by sponsoring individuals. The behavior changes do not impact government revenue because the sponsor fee is predetermined.

Consider, for example, the role a sponsor may have in human capital decisions. Deciding what human capital investments to make is challenging given the wide variety of possibilities: different types of preschool programs, various curricula for formal schooling, many forms of professional training by employers, choices of formative leisure activities, such as sports, music, and volunteering, and so on. Hence, determining which investments are optimal for a particular person with specific skills and preferences is tremendously difficult. Moreover, individuals do not bear the full costs and benefits of their human capital decisions. Take, for example, schooling: individuals do not bear the government's expenses for their schooling, but also do not receive all the benefits of additional human capital, such as higher tax revenue. Sponsors, however, would both bear these expenses and receive these benefits. Hence, sponsors have an incentive to determine which human capital investments would be most beneficial for a particular individual, and to offer the individual information about these investments or to provide positive financial incentives for them, such as a tuition subsidy.[2] Sponsors naturally vary in their ability to ascertain which investments are best

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[2]Regularly, tragic stories emerge of individuals whose troubles were known, but who nevertheless went on to destroy their own or others' lives. Examples include the heartbreaking stories of the Knapp siblings and other kids with whom Nicholas Kristof rode the school bus in rural Oregon in the 1970s (Kristof and WuDunn, 2020[13]), or of a fleeing suspect with a 200-page rap sheet who killed two siblings while he drove the wrong way to evade the

for which individuals, and to induce individuals to make these investments. Those sponsors that do this best will have greater returns. The procedure that matches individuals to sponsors ensures that sponsors with higher returns are matched to more individuals. This generates incentives for sponsors to invest in innovations that increase both their ability to select and tailor investments, and to encourage individuals to undertake them.

The role of sponsors is not limited to interventions in human capital investments. They could, for example, provide information about career opportunities, assist the unemployed in finding jobs, supplement pay, subsidize moving expenses to more lucrative labor markets, or offer incentives for behavior that reduces the risk of unemployment or disability. A sponsor has an interest in offering such interventions if the resulting behavior increases fiscal externalities (which the sponsor receives) by more than the cost of offering the intervention. In effect, the intervention leads individuals to internalize, at least partly, the fiscal externalities of their behavior. Which interventions to offer to which people, and how to structure each person's intervention, is a complex problem. Sponsors that find better solutions to this problem make more profit and outcompete others for sponsorship opportunities.

Couldn't the government itself do what sponsors are doing? In principle, if the government and sponsors are equally informed about individuals, and if the government sets its policies optimally for each individual, then there is nothing sponsors can do that pays for itself though the fiscal externalities generated. In practice, however, the government does not set its policies optimally and is not as good as the private sector in understanding individuals' preferences and skills, so there is a role for sponsors. A similar logic applies to the choice between central planning and a market economy for the production of goods and services. In principle, if the government solves the production planning problem optimally and has the same information as the private sector, central planning works as well as a market economy in producing goods and services. In practice, however, competition in markets leads to more innovation and efficiency gains than central planning. The insight of this paper is that the same mechanism – namely, competition in a market setting – that leads to efficiency gains and innovation in the production of goods and services, can be harnessed to create efficiency gains and innovation in the tax-and-transfer system, the social safety net, and the production and allocation of human capital.

In this thought experiment, the government performs two essential functions. First, its tax-and-transfer system and social policies determine a lowerbound on the distribution of utility, because they define the outside option for individuals who turn down their sponsor's incentives. Second, its procedure for matching sponsors to individuals must ensure effective competition between

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police (https://www.nytimes.com/2020/12/31/us/daytona-beach-police-chase.html). These stories raise the question of whether society could have prevented such tragic outcomes by investing more, or differently, in the human capital of individuals known to be facing trouble.

sponsors. Hence, anti-trust policy not only applies to markets for goods and services, but also to competition between sponsors.

Ultimately, it is an empirical question whether sponsors can identify incentives and information interventions that pay for themselves and make people better off. As explained in Section 5, a sponsorship system can be set up gradually, focussing first on population subgroups with more potential for successful interventions. Moreover, gradual implementation allows for a randomized evaluation that measures efficiency gains realized by sponsors.

This paper aims to contribute to what Kremer (2020)[11] refers to as institutions for innovation. Prominent contributions to this literature include a proposal for patent buyouts (Kremer, 1998[10]), and the proposal and subsequent implementation of advance market commitments for vaccines (Kremer and Glennerster, 2004[12]). More broadly, this paper relates to a literature that puts forward new institutions or contract forms for improving incentives related to public goods or other functions typically involving governments. Papers in this literature make a variety of proposals, including time-consistent health insurance (Cochrane, 1995[7]), age-dependent labor income taxation (Weinzierl, 2011[15]), voting rules that optimally take into account the strength of preferences (Lalley and Weyl, 2018[14]), a funding mechanism for decentralized provision of public goods (Buterin, Hitzig, and Weyl, 2019[4]), markets for regulatory services (Clark and Hadfield, 2019[5]), and the optimal structure of licenses for natural resources (Weyl and Zhang, 2022[16]).

1   Sponsor matching, payments, and actions

Sponsor matching.   The procedure that matches individuals to sponsors must provide sponsors with an incentive to innovate, and ensure that marginal sponsors do not receive rents. Efforts by sponsors to increase the likelihood of being matched to individuals with larger fiscal externalities have no social value. One way to eliminate cream skimming is to randomly match individuals, from a broadly defined group to sponsors interested in that demographic. Groups could be defined, for example, by birth cohorts and geographic regions. Matches are permanent, but a sponsor may transfer the sponsorship to another sponsor if both sponsors agree.

Sponsor payments.   A sponsor receives all positive fiscal externalities generated by individuals it sponsors. For example, taxes an individual pays to the government are transferred to their sponsor. Conversely, the sponsor needs to reimburse the government for any negative fiscal externalities. The net fiscal externality of individual i sponsored by sponsor j in period t is denoted by F_{ijt} and equals the observed sum of revenues the government receives from individual i minus its transfers to and expenses on individual i in period t. F_{ijt} can be positive or negative, and higher values of F_{ijt} mean individual i has a more positive (or less negative) effect on the government's budget. Each

period, the government pays F_{ijt} to sponsor j.

In return for receiving F_{ijt}, sponsor j pays the government a sponsor fee for each individual from demographic group g to whom the sponsor was matched. In period t, this sponsor fee is given by

$$T_{jgt} = \phi_g M_t + \left(\sum_{i \in \mathscr{I}_{-j}(g)} F_{ijt} \right) / \left(\sum_{i \in \mathscr{I}_{-j}(g)} 1 \right),$$

where ϕ_g is a parameter specific to the demographic group being matched, M_t is a price index that becomes zero after a predetermined number of years (e.g., based on the life expectancy of group g), and $\mathscr{I}_{-j}(g)$ denotes all individuals from group g that were randomly matched to sponsors *other than* sponsor j. The parameter ϕ_g is set by the government at the time group g is matched, such that the number of individuals that sponsors would like to sponsor from this group is equal to the number of individuals in this group. The sponsor must still pay the sponsor fee even if the sponsored individual is no longer alive. From the perspective of a sponsor, the sponsor fee is exogenous because it is not affected by actions of either the sponsor or the individual.

The sponsor fee equals the average fiscal externality of individuals in group g that were matched to *other* sponsors, plus a group-specific adjustment term, $\phi_g M_t$. Given that matching within each group is random, this formulation ensures that the sponsor fee plus the fiscal externalities the sponsor receives from the government are on average equal to the adjustment term $\phi_g M_t$ in a given year. This insulates sponsors from shocks that affect all individuals in a given group, such as changes in government policies (e.g., a tax increase), macroeconomic fluctuations, or life-cycle effects (if groups are defined by birth cohort). The adjustment term ensures that sponsors can pay for administrative costs and for the incentives they provide to their sponsored individuals.

Actions sponsors can and cannot take. Sponsors have no coercive power over the individuals they sponsor, but they can increase the fiscal externalities they receive from these individuals through various actions. For example, they can offer positive financial incentives for specific actions, such as human-capital investment undertaken or amount of labor supplied. Sponsors can invest in developing new methods of inducing individuals to adopt behaviors that increase fiscal externalities. For example, mentoring programs or tailored financial incentives. Finally, sponsors can provide information to individuals. For example, explaining the returns to a certain type of education or informing them about particular job opportunities. To prevent sponsors from gaining power over individuals through repeated and frequent contact, individuals may request to be left alone by their sponsor, in which case the sponsor is prohibited from any contact with this individual

for a given period of time (say, five years).[3]

2   Sources of efficiency gains

Status quo with passive sponsors.   When sponsors do not take any action, they do not affect individuals. The outcome for individuals would in that case be identical to the outcome for individuals in the absence of sponsors. Because individuals are not affected, their fiscal externalities are also not affected. If the adjustment term ϕ_g is zero, the payment the sponsor receives from the government for each sponsored individual (i.e., the fiscal externality from this individual) is equal in expectation to the sponsor fee it pays (i.e., the fiscal externality of the average individual sponsored by other sponsors). Hence, when all sponsors are passive, the expected surplus of sponsors is zero and the expected effect on the government budget is zero. Hence, if administrative costs are negligible and all sponsors are passive and risk neutral, having sponsors has no effects on individuals or social welfare.

Efficiency gains over the passive outcome.   If sponsors were passive, the status quo would be replicated. However, because the sponsor receives all fiscal externalities of a sponsored individual, Coase's (1960)[6] classic insight applies: the sponsor and the individual have incentives to reach more efficient outcomes through bilateral contracting. Any such contracting would, by definition, lead to a utility gain for the individual and an expected surplus gain for the sponsor; otherwise, both sides would not agree to the contract. In practice, the first-best outcome might not be reached due to, for example, information asymmetries, or because identifying the action leading to the first-best outcome is costly. Still, the logic of Coase's insight holds. Because the individual and the sponsor are jointly the residual claimants of any actions they undertake, identifying actions that improve efficiency is in their joint interest. In other words, any gains from trade that the sponsor and the individual realize represent efficiency gains, as long as non-fiscal externalities are priced or optimally regulated. Moreover, sponsors that discover innovations that allow them to better overcome obstacles to realizing efficiency gains (e.g., information asymmetries or hard-to-identify optimal actions) obtain a higher surplus than other sponsors. They are therefore willing to pay a higher sponsor fee than other sponsors, and are matched to more individuals as a result. Thus, competition between sponsors results in the growth of sponsors that realize greater efficiency gains.

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[3]Since the early 2010s, some government agencies have used social-impact bonds to induce private-sector parties to innovate how social services are provided, by paying these parties based on outcomes in the target population. Azemati, Belinsky, Gillette, Liebman, Sellman, and Wyse (2013)[2] describe the experiences, promises, and challenges of this approach. This paper's mechanism has parallels to social-impact bonds in that it pays private parties based on outcomes. However, it pays sponsors for *all* fiscal externalities (rather than paying based on a selection of outcome variables) and aims to address inefficiencies beyond those that can be addressed by providing social services.

Why can sponsors realize efficiency gains that the government cannot? The answer to this question is fundamentally the same as that of why decentralized market economies are more successful than centrally planned ones. In principle, assuming away any informational, legal, or bureaucratic constraints, a centrally planned economy should be able to achieve the same outcomes as a decentralized market economy. In practice, however, central planning does not yield as many innovations and is not as responsive to people's preferences as decentralized market economies. The same forces that make decentralized markets more successful in practice than central planning also allow sponsors to achieve efficiency gains in taxation, social policy, and human-capital investment. The drivers behind these forces are information advantages, competition, innovation, and private gains from socially beneficial decisions. The rest of the section gives examples of pathways by which efficiency gains may be realized.[4]

Efficiency gains from unexploited information. Hendren and Keyser (2020)[8] identify several programs that have an infinite marginal value of public funds, meaning these programs pay for themselves and benefit the recipients. Although these programs unambiguously increase social welfare, some of them are not universally adopted or could have been adopted earlier. The lack of earlier universal adoption indicates the existence of constraints on the government in exploiting available information. Sponsors might also face constraints that limit exploitation of available information, but operate in a competitive environment: if one sponsor finds a way around such constraints, this sponsor would make more surplus than other sponsors and gain market share. A lot of information about people (where they grew up, how old they are, their parents' socio-economic status, their school performance, etc.) could potentially be used to offer them incentives or programs that both make them better off and pay for themselves through their fiscal externalities. Determining how this information could be used to design programs or incentives is not a trivial problem, but experimentation by sponsors, along with competition between them, contributes to its solution: whether through luck, intuition, or research, sponsors that best manage to use this information to design interventions and incentives make more surplus and grow at other sponsors' expense.

Efficiency gains from uncontractible information. Much information about individuals (e.g., from job interviews or teachers' observations) is "soft" or non-contractible information. Governments are limited in their ability to use non-contractible information about individuals because of the associated risk of favoritism, that is, offering interventions based on non-contractible information for reasons other than improving fiscal externalities. By contrast, sponsors are better

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[4]Some of these pathways are modeled formally in the online appendix.

positioned to use non-contractible information. First, their surplus increases only if they use non-contractible information in a way that increases fiscal externalities. They thus have strong incentives to prevent favoritism. Second, they cannot force individuals to do anything. Therefore, individuals are protected from a sponsor possibly misusing non-contractible information because they are always free to ignore their sponsor. Those sponsors that best figure out how to effectively use non-contractible information receive the highest surplus and gain market share.

Efficiency gains from sponsor information provision. Sponsors can provide individuals with relevant information that allows them to make better decisions. Decisions on choice of educational institution, field of study, occupation, or sector of employment are challenging for individuals because these choices are (largely) one-time decisions for which outcomes are hard to observe and subject to uncertainty. Finding relevant information to inform them in making these choices is costly for individuals. Getting such information is cheaper for sponsors because they can exploit economies of scale. Moreover, sponsors may help people overcome behavioral biases or avoid common decision-making mistakes. Currently, many entities help people with such choices, including high-school counselors, specialized publications (e.g., college guides), and HR departments. Although these entities provide helpful information, none have the same strong incentives as sponsors for helping people make better choices.

Efficiency gains if an employer sponsors its employee. Sponsors are distinct from employers because individuals can choose their employer (provided the employer wants to hire them), but they cannot choose their sponsor (though they are free to ignore their sponsor). That said, an individual's employer may place more value on sponsorship than other potential sponsors, because the employer can better observe the individual, and therefore offer better-tailored information or incentive schedules. In addition, an employer-sponsor has access to additional tools that are unavailable to other sponsors. For example, incentive schedules that depend on different types of work tasks within the employment relationship. If the utility cost of work tasks varies by employee ability level conditional on a given income, conditioning incentive schedules on these tasks is efficiency enhancing (Akerlof, 1978[1]).[5] If the employer can realize greater efficiency gains than the original sponsor, it is in their joint interest to transfer the sponsorship for some side payment.

Efficiency gains from sponsor innovation. Sponsors can innovate in various ways. For example, they could develop new kinds of investments in human capital (e.g., new courses, new

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[5]The government could, in principle, also offer tax-and-transfer schedules that are conditioned on work task (or occupation or industry), but such schedules would give employers and employees incentives to manipulate the classification of tasks for tax reasons. No such incentives exist when the sponsor is the employer, because the sponsor bears the full cost of reclassifications that reduce tax liability.

interventions), or discover better ways to determine which investment has the highest return for which type of individual. They could find new sources of information on which to condition incentive schedules, or they could design more efficient ones. In all these cases, the sponsor would receive the increase in fiscal externalities. The sponsor, therefore, has an incentive to find such innovations as long as the expected cost of discovering and implementing them is less than the resulting expected increase in fiscal externalities.

The demand from sponsors for innovations that improve fiscal externalities could give rise to an ecosystem of firms that specialize in research and development of such innovations. A sponsor could hire such firms to provide their programs to its sponsored individuals, or these firms could license their programs to sponsors.

Currently, researchers, non-profits, and government employees are also innovating with respect to human-capital interventions. This effort has yielded many valuable new interventions. Sponsors, however, have stronger incentives to find innovations because they receive all fiscal externalities resulting from them.

Efficiency gains from streamlined administration.   The government incurs administrative costs when individuals interact with the tax-and-transfer system (including social policies). These administrative costs represent a negative fiscal externality, which the sponsor pays. If the sponsor finds a way to apply taxes and transfers in an administratively less costly way, the sponsor could incentivize the individual not to use the formal government-run tax-and-transfer program. As a result, the sponsor's surplus increases by the difference between the government's administrative costs on this individual and its own administrative cost. For example, rather than have an unemployed individual formally apply for unemployment insurance benefits, the sponsor could provide these benefits to the individual. This sponsor would then not be charged for the government's expenses, including administrative ones, of providing this individual with unemployment insurance.

Even if sponsors end up administering tax-and-transfer programs for the individuals they sponsor, individuals still need to have the option of using government-administered tax-and-transfer programs, because this ensures that sponsor-provided tax-and-transfers programs make individuals at least as well off as government-provided programs do.

3   Possible refinements

Incentives for longevity.   Societies care about their members staying alive. Although an individual being alive is not in itself a fiscal externality, the government can incentivize sponsors to help the individuals they sponsor stay alive by counting each year an individual is alive as a positive fiscal externality of a given amount. The size of this amount is a policy choice; for example, it

could be set equal to the value of a statistical life year (about $100,000 in the US). In that case, a sponsor would receive $100,000 from the government every year for each sponsored individual, as long as the individual is alive. Because the sponsor fee is equal to the average fiscal externalities of individuals sponsored by other sponsors, assigning a positive fiscal externality to life years also increases the sponsor fee. If a sponsor's individuals have the same average longevity as others, the assignment of a fiscal externality to life years does not affect the sponsor's surplus. However, a sponsor whose individuals have above-average longevity obtains more surplus. This generates incentives for sponsors to increase the longevity of their individuals.

Limits on sponsor liability. The government may want to impose a limit on the size of the negative fiscal externality for which a sponsor can be held liable. For example, if this limit is less than the value of the positive fiscal externality assigned to the sponsored individual being alive, a sponsor has an incentive to increase the longevity of each sponsored individual. Given that sponsors may be quite sophisticated, it is reassuring if no sponsor would be better off if any of their individuals died. The drawback of limiting sponsor downside liability is that it reduces sponsors' incentives to implement interventions that reduce the risk of very large negative fiscal externalities.

Sponsor responsibility for non-fiscal externalities. When non-fiscal externalities are correctly priced through Pigouvian taxes or subsidies, no net externality exists. These externalities are priced already, and therefore don't need to be assigned to a sponsor. For example, if the excise tax on gasoline is equal to the marginal environmental externality of burning gasoline, then, on net, the individual does not exert an externality when burning gasoline, because the negative environmental externality is exactly offset by the payment of the excise tax. Pigouvian taxes and subsidies are therefore excluded from fiscal externalities transferred to sponsors, F_{ijt}.

Negative externalities that are small relative to the level of an individual's consumption can be internalized by Pigouvian taxes. For example, an excise tax on fossil fuels causes individuals to internalize the environmental damage caused from burning that fuel. Hence, there is no clear reason to charge the sponsor for such externalities instead of charging the individual directly. However, what a government can charge an individual for a negative externality is limited, given that many individuals have limited income. When this limit binds, the government could instead charge the sponsor for the external effect. This would induce the sponsor offer interventions to the individual that reduce this negative externality. For example, many crimes impose negative externalities on their victims, and the size of such externalities is often much larger than the criminal's ability to pay. The government could enact a policy that makes a sponsor also responsible for negative non-fiscal externalities from crimes committed by individuals it sponsors (in addition to fiscal externalities from the crime, such as the cost of incarceration). Assigning such non-fiscal

externalities to sponsors incentivizes them to develop programs and interventions that reduce the likelihood that their sponsored individuals engage in crime.

Positive non-fiscal externalities can, in principle, all be priced through Pigouvian subsidies to individuals, because constraints on individuals' ability to pay are not relevant here. However, given that individuals are risk averse, they value a small probability of a large payment less than receiving the expected value of the payment for sure. Thus, if certain actions increase the probability of a large positive externality, then paying the sponsor for the large positive externality, and letting the sponsor determine the best way to incentivize individual actions that increase the probability of this large positive externality, may be more efficient.

4 Limitations and possible concerns

Unsophisticated individuals versus sophisticated sponsors. Sponsors, especially ones that survive the competition with other sponsors, are likely quite sophisticated in their decision-making. This sophistication can be used to find innovations that increase social welfare, but it could also be used to exploit individuals' behavioral biases. For example, sponsors may use marketing techniques to induce people to focus on the material rewards of working harder, to the point that people become worse off – that is, when the extra earnings from the harder work do not compensate for the foregone leisure.[6] Various mechanisms may help limit the extent to which sophisticated sponsors take advantage of individuals' decision-making biases.

First, reputational concerns may induce a sponsor not to exploit biases of the individuals it sponsors. Because individuals are free to ignore their sponsor, if a sponsor obtains a reputation for taking advantage of the individuals it sponsors, individuals may decide that severing contact with their sponsor is in their best interest. This decision would also prevent the sponsor from realizing efficiency gains from interventions and incentive schedules that make the individual better off.

Second, the government can regulate how sponsors may interact with individuals, similar to the way it currently regulates the financial sector to prevent it from taking advantage of people's decision-making biases. This regulation could specify how certain information is presented, forbid sponsors from knowingly providing false or misleading information, require that individuals get time to carefully consider certain decisions, or enable individuals to block their sponsor from contacting them in any way for a given period of time.

Third, the government could allow only non-profit organizations to serve as sponsors. The social goals of nonprofits would likely limit the extent to which they would take advantage of

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[6]Of course, similar issues arise with existing private-sector firms engaging in marketing. While marketing may inform people about products, it may also get them to focus on the rewards of material consumption. This focus on material consumption can induce suboptimal decisions on how much to work, because individuals focus too much on the increase in material consumption relative to the cost of foregone leisure.

individuals' decision-making biases. However, socials goals may also provide weaker incentives than profit motives for finding innovations that would increase fiscal externalities.

Finally, the government could temper the sponsors' incentives by making them responsible for only a fraction of the externalities caused by the individual. The obvious downside of this option is that it limits the sponsors' incentives and opportunities to engage in actions that increase social welfare. Still, it may allow sponsors sufficient incentives to eliminate the largest inefficiencies, but not incentivize them to the point that they take advantage of individuals' decision-making biases.

Political power of sponsors.   The set formula that determines sponsor compensation – namely, a given adjustment term plus the difference in the fiscal externalities of individuals sponsored by a given sponsor and those of individuals sponsored by other sponsors – limits incentives for political interference in the determination of fiscal externalities. Of course, many policy choices affect the level of fiscal externalities. For example, the generosity of social insurance programs or the methodology used to measure fiscal externalities. However, because such policy choices affect the fiscal externalities of both the individuals sponsored by the sponsor in question and those sponsored by others, the net effect on a sponsor's compensation is zero on average. Thus, although specific sponsors may favor or oppose a particular choice, sponsors as a whole have no incentive to lobby for policies that increase or decrease fiscal externalities.

Of greater concern is possible sponsor political influence on the rules by which individuals are matched to sponsors. The matching mechanism needs to ensure that competition between sponsors is sufficiently high to limit sponsor rents from market power. Naturally, sponsors have incentives to lobby policymakers to change these rules such that they gain market power. These incentives are similar to incentives of regular firms in opposing anti-trust action in their industry. Thus, although sponsor political influence is clearly an important concern, it is no different from those about political influence in other sectors of the economy.

Sponsor bankruptcy and capital requirements.   Sponsors can go bankrupt, just like other private-sector organizations. Because the value of sponsors comes from innovation, sponsors that turn out to be more successful at innovation must be able to grow at the expense of those that are not. Therefore, mechanisms need to be in place for less successful sponsors to exit. One way a sponsor can exit is to reassign its sponsored individuals to a different sponsor for a mutually agreed payment. Another path is through bankruptcy. In that case, the government would need to find new sponsors for the individuals whose sponsor went bankrupt.

The government can prevent strategic bankruptcy by imposing capital requirements on sponsors, similar to current regulations for banking and insurance firms. These capital requirements would prevent sponsors that happened to be matched to individuals with low or negative fiscal

externalities from using bankruptcy to avoid their liability for these fiscal externalities.

5   Gradual implementation and evaluation

A system with sponsors does not need to be perfect to be worth implementing, just like market economies are not perfect but still bring great benefits and generate much innovation. Moreover, a system with sponsors can be implemented gradually, and refined along the way, as possible unintended consequences become apparent. Gradual implementation would also give sponsors time to build their organizations and determine which interventions work well and which do not. This section describes some options for gradual implementation.

Randomized evaluation and sponsor incentives for entry.   During the start-up phase of a system with sponsors, the sponsor fee and the matching procedure can be modified to increase incentives for sponsor entry, focus on individuals with the largest potential gains from sponsor intervention, and allow for a randomized evaluation of the welfare gains from the system.

In this modification, sponsors can submit proposals that define groups of individuals to be considered for their sponsorship. If the government accepts a proposal, only a randomly assigned fraction (say half) of the proposed group gets matched to sponsors. Individuals not matched to a sponsor form the control group, which serves two purposes. First, it provides the control group for a randomized evaluation of the welfare benefits of the sponsors' interventions. Second, it is used to calculate the modified sponsor fee that sponsors pay the government for each sponsored individual: the average fiscal externality of individuals in the control group plus a charge that covers the government's administrative expenses for the proposal.

In this modified design, all proposals made by sponsors would make everyone weakly better off in expectation, and thus result in a welfare gain. In particular, sponsors are better off because they would only submit proposals that give them positive expected surplus. Individuals sponsored under the proposal are weakly better off because they can decline interventions that would make them worse off. Moreover, by definition, individuals in the control group are not affected. Finally, by construction of the modified sponsor fee, the government receives the same net revenue from individuals matched to sponsors as from those in the control group, and the government is reimbursed for its administrative costs. Hence, government spending and revenue are not affected in expectation.

This modified design guarantees that the system of sponsorship yields expected welfare gains even in the presence of administrative costs and even if sponsors are risk averse. However, it has two drawbacks that make its use undesirable in the longer term. Because a control group is necessary, sponsors generate efficiency gains only for those individuals who are not part of

the control group. This drawback is not relevant in the start-up phase, when not all individuals could be matched to sponsors anyways, but it becomes relevant as the system grows. Second, in the modified system, sponsors earn rents. Earning rents may be desirable in the start-up phase, when these rents encourage entry and can finance sponsor growth and start-up costs. Having a large number of entrants early on is beneficial, because it allows for a subsequent selection of the most successful sponsors from a large set of sponsors who attempted to find efficiency-enhancing interventions.

Limiting included fiscal externalities during the start-up phase. During the start-up phase, the government could limit the types of fiscal externalities for which sponsors are responsible, and set a low limit on the maximum absolute size of these externalities. Doing so enables sponsors to better forecast the size of the externalities for which they are responsible, and limits their possible liability. The resulting reduction in uncertainty and exposure to downside risk allows for lower capital requirements, and thus reduces barriers for entry. The downside to not holding sponsors responsible for all fiscal externalities, and to limiting the size of the externalities, is that sponsors may potentially offer interventions that have negative externalities for which they not responsible, but positive externalities from which they benefit. In short, incentives for sponsors are distorted and some interventions could be profitable for sponsors but, nevertheless, welfare reducing. Consequently, policymakers need to make a practical tradeoff between the benefits of reduced entry barriers and the cost of having some sponsors potentially engage in welfare-reducing actions.

In the start-up phase, the government can monitor the degree to which sponsor actions are, on net, welfare improving, by comparing all the fiscal externalities of sponsored individuals with the fiscal externalities of individuals in the control group. For this comparison, all fiscal externalities would need to be measured without limits on size, not just those externalities for which sponsors are held responsible. As long as the fiscal externalities of sponsored individuals exceed the fiscal externalities of those in the control group, the net welfare effect of sponsor actions is positive.

6   Conclusion

This paper considers a thought experiment in which an individual's fiscal externalities are transferred to a sponsor that, in return, pays the government a set fee. The rationale behind this transfer is to ensure that it is in the joint interest of the individual and their sponsor to reduce existing inefficiencies resulting from the individual's behavior, including their labor supply, educational decisions, or use of safety-net programs. By the logic of the Coase Theorem, the transfer incentivizes the sponsor to induce the individual to internalize the fiscal externalities of their behavior.

Sponsors likely have advantages over the government in inducing individuals to internalize

their fiscal externalities, for many of the same reasons that private-sector firms have an advantage over the government in the production of goods and services: sponsors can better observe individual preferences and abilities, sponsors can better use non-contractible information, and sponsor experimentation and competition results in an increased market share for those sponsors best able to reduce inefficiencies by getting their individuals to internalize their fiscal externalities. Decisions on the degree of income redistribution, the extent of social insurance, and the generosity of the social safety net remain in the hands of the government. However, the tradeoff between fairness and efficiency that these decisions involve becomes less sharp as innovations by sponsors reduce the efficiency losses associated with these programs.

A system with sponsors can be introduced gradually into the existing economic system, and it can be structured such that it operates and grows only if it creates welfare gains. Individuals cannot be made worse off, because sponsors cannot compel individuals to do anything; instead, sponsors can only offer individuals new opportunities. During the start-up phase, the mechanism keeps government revenue and spending constant. Hence, sponsors are willing to participate only if they can find interventions that create efficiency gains, and their surplus comes from these efficiency gains. After the start-up phase is completed, competition between sponsors transfers sponsor rents to the government, which can use this extra revenue to further increase individuals' standard of living.

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