The Morality of Markets

Mathias Dewatripont

Université Libre de Bruxelles

Jean Tirole

Toulouse School of Economics and Institute for Advanced Study in Toulouse

Scholars and civil society have argued that competition erodes supplier morality. This paper establishes a robust irrelevance result, whereby intense market competition does not crowd out consequentialist ethics; it thereby issues a strong warning against the wholesale moral condemnation of markets and procompetitive institutions. Intense competition, while not altering the behavior of profitable suppliers, may, however, reduce the standards of highly ethical suppliers or not-for-profits, raising the potential need to protect the latter in the marketplace.

I. Introduction

Whether markets impede ethical behavior has always engendered a variety of views. Many eighteenth-century thinkers believed that such concerns are either irrelevant or mistaken. Adam Smith stressed that self-interest

This project received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (grant agreement 669217; ERC MARKLIM). Jean Tirole acknowledges funding from Agence Nationale de la Recherche under grant ANR-17-EURE-0010 (Investissements d'Avenir program) and financial support from the Chaire SCOR "Market Risks and Value Creation." We gratefully acknowledge comments from participants at conferences at University of Bonn, Chicago–London School of Economics, Competition and Regulation European Summer School (CRESSE), Foundation Getulio Vargas, Massachusetts Institute of Technology, Society for Institutional and Organizational Economics, and Toulouse School of Economics; seminars at Université Libre de Bruxelles, Reggio de Calabria, Harvard University, and Western

Electronically published June 10, 2024

Journal of Political Economy, volume 132, number 8, August 2024.

https://doi.org/10.1086/729445

could lead to socially optimal outcomes. Condorcet, Hume, Montesquieu (with his doux commerce), and Turgot viewed market institutions as creating trust among otherwise unrelated individuals; see Hirschman (1977) and the economic history work of McCloskey (2006) and Mokyr (2016).[1] A different tradition—dating back to Karl Marx and popular in today's public opinion and among social scientists, politicians, and religious leaders—argues in contrast that markets promote unethical behavior.[2] For instance, numerous prominent contemporary philosophers have warned against the religion of the marketplace, with a variety of viewpoints from the necessity to ban repugnant markets to the stance that a market economy is an unlikely path to a harmonious society (see Anderson 1993; Walzer 2008; Satz 2010; Sandel 2012). The critique that market competition obliterates our moral compass is the focus of this paper.[3]

The morality-based critique of competition often builds on the replacement logic narrative, the idea that if a supplier refuses to engage in an immoral trade, someone else will.[4] In that, the critique echoes widespread narratives. Firms and countries selling weapons to dictators or bribing officials to win a contract argue that their refraining to do so would not prevent dictators from having access to weapons and officials from receiving bribes. Similarly, the replacement narrative is used by banks selling toxic products or providing short-term incentives to talents they want to attract; by employees ingratiating themselves to their superiors in order to be promoted; by doctors overprescribing opioids, antibiotics, drugs used by professional athletes to defeat their competitors, or unwarranted sick-leave certificates; by farmers exploiting animals;[5]

Ontario Law; and Tim Besley, Emir Kamenica, Louis Kaplow, Paul-Henri Moisson, Charles Pébereau, François Salanié, Joel Sobel, Nicolas Treich, and four referees. This paper was edited by Emir Kamenica.

[1] In conformity with this view of markets, Dufwenberg et al. (2022) find experimental support for individuals having reciprocal preferences and for successful market interactions (interpreted as the efficient equilibrium outcome in a cooperative coordination game) triggering generosity in a dictator game. Our perspective is different in that we focus on how the nature of market interactions themselves affect players' own trade-offs between profits and ethical concerns. This being said, like Dufwenberg et al. (2022), we assume that market interactions do not change intrinsic preferences.

[2] We will use "ethics" and "morals" indifferently in this paper. For our purpose, it does not matter whether the social preferences of suppliers or stakeholders refer to rules provided by an external source or reflect an individual's own principles regarding right and wrong.

[3] To be certain, some of the critiques reflect a desire to move all the way to an economy consisting of only state-owned or democratically run firms. However, doubts about the morality of competitive markets are much more pervasive in society and often do not reflect such ulterior motives.

[4] In the policy debate, the replacement logic is sometimes called first-mover disadvantage: "If I reduce my carbon footprint, I will lose market share."

[5] Animal exploitation induces an externality/harm on other sentient beings and is considered by philosophers as morally problematic. The rhetoric of animal farmers is often

or by companies whitewashing their products' potential shortcomings (their brittleness or high fat and sugar content).

The replacement narrative has three premises:

1. Social preferences: suppliers have social preferences that, in a competitive marketplace, they cannot translate into ethical actions without losing market share.
2. Consequentialism: suppliers worry about the ultimate consequences of their behavior.
3. Demand for unethical supplier behavior: purchasers benefit from suppliers behaving unethically (as in the examples above). Put differently, unethical behavior must increase the supplier's demand. To contrast such purchasers with the more familiar concept of socially responsible consumers, whose demand increases with the moral content of the product (a much-studied case in the economics literature), we will call such consumers "unethical."

Our modeling takes the first two premises on board. We will say that the supplier is consequentialist if it internalizes the impact of a change in its own moral choice in proportion of the quantity it sells (say, it internalizes the social cost of 2 tons of carbon emissions as twice that of a single ton). We will show that the replacement narrative corresponds to the special case of broad bracketing or ethical welfare (say, the supplier internalizes the total amount of pollution or opioids and not only its own pollution of opioid sale). Our insights and results, however, apply to the much larger class of consequentialist social preferences: narrow bracketing (the supplier internalizes only its own pollution or prescription of opioids and so is indifferent as to whether its absence of trading curbs overall pollution or opioid consumption) as well as other notions of social welfare that further account for consumer net surplus or the misallocation of consumers to products (social preferences then reflect total welfare).

The third premise (purchasers are unethical) may result from three reasons. The first is the presence of externalities on others who are not party to the trade, as illustrated by officials asking for bribes or dictators buying weapons. Alternatively, the purchaser may be exposed to an internality: a consumer may suffer from present bias, as illustrated by the opioid case: overprescriptions of opioids raise sales but not consumer welfare. The third reason is that consumers may be ill-informed about what they purchase. Whether they are rational (and just uninformed), naive, or gullible, the failure to disclose flaws or the use of misleading advertising

based on the replacement effect: "We like animals, but if we did not put animals in cages, we would import cheaper and less ethical meat from competitors."

boosts demand at a cost to society whenever the consumer would not have purchased, absent the misrepresentation. Because of the variety of foundations for demand to increase with unethical supplier behavior, we will consider the broader class of UPI (unethical/present biased/influenceable) consumers. Again, our model is more general than that underlying the replacement narrative: we will also allow consumer demand to increase (ethical consumers) or remain constant (indifferent consumers) when the supplier's offering is more ethical.

The irrelevance result.—We ask: does the combination of unethical (or, more generally, UPI) consumers and of suppliers with consequentialist social preferences imply that moral behavior deteriorates under more intense competition? Our answer to this question is no. Indeed, under weak assumptions, the degree of competitive pressure is irrelevant to ethical behavior (moral choices are independent of demand functions) if prices are flexible.

The intuition behind the irrelevance result goes as follows: when a supplier faces more intense competition (a more elastic demand), raising ethical behavior has a bigger negative impact on the supplier's market share and is therefore costlier for the supplier; ceteris paribus, this makes suppliers cut ethical corners in reaction to the increase in competition, as indicated in the conventional wisdom. However, next to this first market share effect, there is a second reduced-stakes effect: a more intense competition reduces prices and markups, making supplier ethical concerns loom larger relative to material ones. We show that a sufficient condition for these two effects to exactly offset each other is that suppliers have consequentialist preferences and returns to scale are constant.

The irrelevance result, which applies as well to ethical or indifferent consumers, is important not only because it sheds light on the validity of the widespread concern about markets expressed by the public opinion, social scientists, politicians, and religious leaders but also because it affects our stance vis-à-vis key competition-enhancing public policies, such as the opening of borders to free trade, competition policy, and the deregulation of industries. The irrelevance result is also in stark contrast with earlier theoretical results on the irrelevance of social preferences in highly competitive environments, in particular, with Dufwenberg et al. (2011) and Sobel (2015): in our case, the social preferences of suppliers and of consumers matter regardless of the competitive pressure, and it is the intensity of competition that is irrelevant. The difference is driven in particular by the fact that in their settings, one can affect others' utilities only through one's impact on their quantities traded or the market price, an impact that vanishes under perfect competition. In our setting, an individual may want to change her action just because it is objectionable to herself or others, even if this does not affect their ability to trade, a feature that is widespread in the real world. See the literature review for a detailed comparison.

We then show that the irrelevance result is robust to various forms of competition. In particular, it holds under strategic substitutes as well, that is, when firms compete in capacities. There is then no replacement effect, as a supplier's increase in moral content does not affect their rivals' output; this result confirms that the irrelevance result is consistent with the replacement logic but by no means hinges on its existence. The result also accommodates a wide range of consequentialist preferences, from the case in which the suppliers care only about the moral consequences (e.g., the emissions) of their own production to that in which they care about overall welfare. Finally, the irrelevance result extends to imperfect consumer information, to some forms of nonlinear price discrimination, and to some environments with nonconstant returns to scale.

When does the irrelevance property fail?—As the reduced-stakes effect suggests, the clue lies in the rigidity of prices. Prices may be rigid for one of two reasons. First, prices may be exogenously set by either a regulator (taxis, notaries, doctors in some health systems) or a private party (apps and franchising environments). With regulated prices kept fixed, a more intense competition impedes moral behavior under UPI consumers (validating the common criticism of markets when competitors are constrained in their ability to lower price to gain market share) and fosters moral behavior when consumers are ethical.

Second, prices may be endogenously downward constrained by limited liability. Firms with different corporate forms—for-profits and not-for-profits—may coexist. Indeed, it is often suggested that in industries with strong moral overtones (health, education), the profit motive should be eliminated. The not-for-profits must align revenue with cost, and so their prices, while endogenous, are not fully flexible. Alternatively, when suppliers are all for-profits but differ in their social preferences, the more ethical suppliers' preferred policy may put them in the red when competition is sufficiently intense; this implies that they are de facto—although not de jure—not-for-profits. We show that with UPI consumers, moral choices of not-for-profits or highly ethical suppliers mimic those of less ethical ones, and so to make a difference, the former must be insulated from an intense competitive pressure from for-profits. This strategy is a better response than a weakening of competition policy enforcement to concerns about insufficient ethics in our market economy.

Road map.—This paper is organized as follows. Section II develops the baseline model. Suppliers operate in an imperfectly competitive industry and select two actions: a price and a moral action. The moral action affects demand and/or production cost. The product's consumers are defined as ethical, UPI, or indifferent depending on whether a more moral action increases, decreases, or does not affect the firm's demand.

Even though our focus is on suppliers, who operate the ethical choices and whose social preferences are the more novel part of the paper, we

consider a general model in which stakeholders—namely, consumers but workers and investors as well—are also driven by both a material motive and social preferences. We require stakeholders to be consequentialists as well, which accommodates, like for suppliers, a wide range of social preferences. For instance, the warm glow experienced by some investors when trading a brown security for an ESG (environmental, social, and governance) one is a form of narrow bracketing; in contrast, other investors exhibit broader bracketing when using the replacement excuse that "If I divest oil companies from my portfolio, someone else will buy the shares anyway." Similarly, accounting for the fact that my consuming green electricity from a hydroelectric dam with a fixed capacity displaces other consumers' purchases toward brown power implies broad bracketing, while my ignoring equilibrium (or leakage) effects reflects narrow bracketing.

A supplier's social preferences are most simply interpreted as either those of the manager in the case of an owner-managed firm (entrepreneur, doctor) or those of shareholders under shareholder value. Alternatively, they might reflect a mixture of the two, with different weights depending on the extent of agency. "Shareholders" stand for active investors, who exert voice to impact the firm's choice. In contrast, passive investors have no such impact but may accept a lower return when investing in an ethical firm (their influence will then be reflected in the cost function).

Section II develops the framework and discusses the three assumptions that are key to the irrelevance result: consequentialism, price flexibility, and constant returns to scale (returns need not be constant in output; rather, a supplier's marginal cost of raising the morality of her production is proportional to its output). Section III.A derives the basic irrelevance result, and section III.B performs the various extensions discussed above.

Section IV considers limits to price flexibility. Sections IV.A and IV.B study rigid prices. Section IV.A first shows that for given prices, moral choices are strategic complements under UPI consumers. Two reasons underlie this strategic complementarity: an elasticity effect and a social responsibility effect. Section IV.B then demonstrates that, as announced above, a more intense competition impedes (fosters) moral behavior when consumers are UPI (ethical). Finally, section IV.C analyzes competition between suppliers when corporate form or social preferences heterogeneity leads to a break-even concern; it demonstrates the interdependence among policies adopted by rival corporate forms and derives some policy implications.

Section V demonstrates the relevance of the analysis to shed light on current debates and the real world and, while emphasizing the need for more empirical work, discusses various forms of evidence supporting the theory. Section VI relates the paper to the existing literature. Section VII summarizes the main insights. Omitted proofs and more specific material are relegated to the appendix, available online.

II. Framework

Our baseline model is one of differentiated Bertrand competition. There are n suppliers, $i \in \{1, \ldots, n\}$, and a mass 1 of unit demand price-taking consumers. The outside option is indexed by 0; it can be interpreted as the absence of consumption or the consumption of a substitute good with fixed ethical implications. Suppliers compete in price and nonprice dimensions. Supplier i selects its price p_i as well as a moral or ethical choice a_i, both in $\mathbb{R}^+$. We will use formal assumptions to flag those driving the irrelevance result.

Impact of ethical choice.—Besides price p_i, supplier i picks a level of morality $a_i \in [0, \bar{a}_i]$, with $\bar{a}_i \leq +\infty$. Choice a_i has per-unit-of-output direct welfare impact $W_i(a_i)$, say, (minus) a per-unit externality cost. For example, a_i might be a choice of technology; a CO_2 emission rate of $\psi_i(a_i)$ per unit of output yields welfare $W_i(a_i) = -\psi_i(a_i)e$, where e is the social cost of carbon. A higher value of a_i indexes a more moral choice: $W_i'(a_i) > 0$ on $[0, \bar{a}_i]$ and $W_i'(\bar{a}_i) = 0$.[6] We assume that $W_i''(a_i) < 0$ for all a_i and $W_i'(0) = +\infty$. The outside option, "good 0," generates exogenous welfare impact $w_0 \equiv W_0(a_0)$. For example, the absence of purchase of conventional electricity generation might involve no pollution (energy sobriety) or else be highly polluting (return to coal or woodburning). Let $\boldsymbol{a} \equiv (a_1, \ldots, a_n)$ denote the vector of ethical choices. Ethical choices are observable unless otherwise indicated.[7] If we look ahead, the moral choice a_i will matter not only to suppliers, who will value both their material payoff and the morality of their behavior, and to consumers, whose demand will depend on a_i and p_i, but also to workers and investors, who will accept a lower wage or return for being associated with a more moral firm (the impact of supplier moral choices on workers and investors will operate on the cost rather than the demand side).

[6] $\bar{a}_i$ is finite in all examples provided as microfoundations in app. 1.

[7] The context may influence the stakeholders' social preferences. Suppose that the supplier first produces and then brings its production to the market; broad bracketing (the replacement excuse) then seems logical for consumers: "The animal was raised cruelly, whether the meat is eaten or not: my buying the meat does not alter this." In contrast, under "production only upon order," the animal is not raised cruelly if I choose not to consume meat. Then a_i does damage/benefit only when supplier i's good is purchased, and so narrow bracketing seems more logical. The contrast between the two is clear in a static model. Things would be more complex in a dynamic one: my buying a steak encourages future factory farming, as it displaces the suppliers' perception of the demand curve. So even in the more common case of production prior to sales, narrow bracketing might be more logical.

Importantly, the exact nature of stakeholders' social preferences is not essential to our analysis as long as they reflect the scale of the trade, and so we do not need to question whether they are logical. Put differently, while we find such consumer reasoning appealing, we are agnostic as to how it is formed as long as it is consequentialist. The results carry over to when it is not applied, e.g., when consumers remain guided by the impact of their own purchase when the supplier produces and then brings its production to the market.

Consumer attitudes.—Incentives for suppliers to choose a given action a_i will depend on consumer attitudes toward a_i. Consumers are parties who impact the demand side. These may be ordinary consumers of goods and services or an agent or purchaser selecting on behalf of them (officials selecting a contractor, current incarnation); we will generically use the term "consumer" to encompass each acceptance. The consumers' cost or benefit of the moral action is captured through its monetary equivalent $\phi_i(a_i)$ with $\phi_i'' \geq 0$ (to ensure the concavity of optimization programs), such that the consumers' demand for product i depends only on its net price $\hat{p}_i$ (and on the net prices charged by other suppliers):

$$\hat{p}_i \equiv p_i + \phi_i(a_i). \tag{1}$$

So we assume that the extent to which consumers care about a_i is independent of the price, in the same way we model the impact of a sales tax in econ 101. Note also that the consumers' cost or benefit of the moral action could be heterogeneous. The function $\phi_i(a_i)$ would then stand for the average cost or benefit (there is a formal equivalence for a linear demand system). The separability assumption seems reasonable, provided that the consumer's utility is separable in disposable income and accomplishment of one's moral duty.[8]

DEFINITION (Social responsibility). Consumers are

i. UPI (unethical/present biased/influenceable) when $\phi_i'(a_i) > 0$ (their demand decreases with the morality of the firm's offer);
ii. ethical when $\phi_i'(a_i) < 0$ (their demand increases with the morality of the firm's offer); and
iii. indifferent when $\phi_i'(a_i) = 0$.

All cases are relevant, even though they typically depict different contexts. Modeling ethical consumers' concern is straightforward: $-\phi_i(a_i)$ may be equated to $\alpha_C W_i(a_i)$, the benefit from feeling one is doing the right thing (α_C is the consumer's internalization coefficient), thereby boosting demand. Ethical consumers derive a psychological benefit from consuming carbon-free or fair-trade products.[9]

[8] It can be motivated by assuming that there are many goods and taking a linear approximation. Namely, the consumers could be consuming many such goods, indexed by x, and have utility $\xi(y - \int p_x 1_x dx, \int -\phi_x(a_x) 1_x dx, -\int \varepsilon_x 1_x dx)$, where ξ is increasing in the three arguments, y is the endowment, (p_x, a_x) are the price and morality of his choices of subbrand of good x, and ε_x is the hedonic benefit of his choice of subbrand to his preferred specification (ε_x is consumer idiosyncratic). 1_x is the characteristic function, equal to 1 if good x is consumed and to 0 otherwise. Taking a linear approximation yields the model studied in this paper.

[9] That the consumer internalizes the welfare associated with her choice does not imply a narrow internalization. To be certain, an alternative choice (say, firm j) would have welfare consequences that depend on a_j. However, this is taken into consideration by the consumer

More interesting for this paper are UPI consumers. As the terminology suggests, we provide three distinct rationales for the disconnect between the low moral standards desired by the purchasing agent and what is good for society (these are sketched here and detailed in app. 1). Two of them create a private benefit for the purchasing agent that is decreasing in the morality of the action. The first possible wedge (motivating the U) may stem from an externality (as when doctors deliver fake medical certificates to allow their client not to be vaccinated or to take sick leave, or when a firm supplies weapons to a dictator or bribes an official who awards a government contract; the client cynically benefits from the supplier's immoral behavior). The second wedge (motivating the P) may be traced to an internality (a doctor overprescribes opioids, which are attractive to the client's current self but—being addictive—detrimental to her long-term self, who is then the victim). A third possibility (motivating the I) arises when the moral action refers to the truthfulness of product disclosure. In this case, the consumers are victims when the supplier behaves less morally. For example, misleading advertising—the absence of disclosure of the product's flaws or limitations (a low a_i)—raises demand. A more complex case (but one covered by our framework) arises when the flaw is the necessity for the consumer to later purchase an unforeseen add-on from the supplier (as in the shrouded attributes literature initiated by Gabaix and Laibson 2006). The nondisclosure then not only increases demand but also generates for the supplier deferred profits, whose expectation is akin to a reduction in the supplier's marginal cost.

Finally, indifferent consumers are either of the homo economicus type (their preferences are purely material) or, more interestingly, they have social preferences but cannot express them in the marketplace, as they do not observe the suppliers' moral choices prior to their purchase and, furthermore, the realized moral choice does not affect their demand.[10]

Net prices and demands.—The vector (p_i, a_i) determines the net price $\hat{p}_i$ perceived by the consumers ($\hat{p}_0$ is the net price for the exogenous outside option). Supplier i faces demand function $q_i = D_i(\hat{\boldsymbol{p}})$, where $\hat{\boldsymbol{p}} \equiv (\hat{p}_1, \ldots, \hat{p}_n)$ denotes the vector of supplier net prices. We will also write firm i's demand as $D_i(\hat{p}_i, \hat{\boldsymbol{p}}_{-i})$, where $\hat{\boldsymbol{p}}_{-i}$ denotes the vector of net prices charged by supplier i's rivals. Firm i's demand is decreasing in its own (net) price. (In secs. IV.B and IV.C, we will specialize to the case of a fixed total demand [say, everyone needs a doctor or a school], with a mass 1 of

when selecting a supplier. If we let ε_{hk} denote the valuation of consumer h for good k, the consumer compares $\varepsilon_{hi} - [p_i - \alpha_C W_i(a_i)]$ with $\varepsilon_{hj} - [p_j - \alpha_C W_j(a_j)]$. That is, the consumer accounts for the welfare impact of alternative choices.

[10] In contrast with the disclosure examples just mentioned in which the consumer also does not observe the realization of the moral action, here the actual choice of this action does not affect demand (think of unobserved use of child labor or of pollution: the consumer's demand does not react to the realized choice of moral action).

unit demand consumers and $\Sigma_{i=1}^{n} D_i(\hat{\boldsymbol{p}}) = 1$ in the relevant range of net prices; we will then say that the market is covered.]

For instance, the demand function $D_i(\hat{\boldsymbol{p}})$ stems from a consumer discrete choice model: consumers have unit demands with valuations $\{\varepsilon_{hi}\}_{i\in\{0,\ldots,n\}}$ drawn from some smooth joint distribution. Consumer h therefore buys from supplier i if $\varepsilon_{hi} - \hat{p}_i > \max_{j\neq i;j\geq 0}\{\varepsilon_{hj} - \hat{p}_j\}$ and does not if the inequality is in the opposite direction. As we will later show that the irrelevance result extends to the Cournot model, we should note that the perfect substitutes demand function is a special case of the discrete choice model, with perfect correlation of the differential between the oligopolists' products and the outside option: $\varepsilon_{hi} - \varepsilon_{h0} = \varepsilon_{hj} - \varepsilon_{h0} = v$, where v is the valuation, distributed according to some cumulative distribution function $F(v)$.

Demand elasticity.—The suppliers are substitutes ($\partial D_i/\partial \hat{p}_i < 0 < \partial D_i/\partial \hat{p}_j$), and the profit function satisfies the standard assumptions. Supplier i's marginal revenue is decreasing in price, keeping the ethical action constant ($(p_i - c_i)D_i(\hat{\boldsymbol{p}})$ is concave in p_i). We will let $\eta_i(\hat{\boldsymbol{p}}) \equiv (-\partial D_i/\partial \hat{p}_i)/(D_i/p_i)$ denote the price elasticity of demand for supplier i's services (note that $\partial D_i/\partial \hat{p}_i$ is the price sensitivity of demand from [1]).[11] We assume that the goods are (local) strategic complements: Supplier i's elasticity of demand increases with competitive pressure:

$$\frac{\partial \eta_i}{\partial \hat{p}_j} < 0.$$

Costs.—We make the following assumption on the possible dependence of supplier i's cost on the ethical choice a_i:

ASSUMPTION 1 (Constant returns to scale). A supplier's marginal cost of raising the morality of her production is proportional to her output: her cost as a function of her output q_i and her moral choice a_i can be written as $C_i(q_i, a_i) = c_i(a_i)q_i + d_i(q_i)$, where $c_i'(a_i) \gtrless 0$ and $c_i''(a_i) > 0$ for all a_i.

Note that returns need not be constant with respect to output; instead, the marginal cost of moral behavior scales up with this output. The firm may use child labor or fossil fuel sources of energy in order to keep its cost low, in which case $c_i'(a_i) > 0$. Alternatively, the ethics-dependent cost function captures investor and worker social responsibility. The latter may be willing to forego some return or some wage to be associated with a more ethical enterprise. Suppose, for the sake of illustration, that investors (workers) are willing to accept a reduction in their return equal to $\alpha_I W_i(a_i)$ (in their wage equal to $\alpha_W W_i(a_i)$ to be associated with firm i. If we assume that 1 unit of output requires 1 unit of labor and 1 unit of

[11] In sec. IV, we will index η_i by a parameter $\sigma \in \mathbb{R}^+$ of intensity of competition. For instance, σ might be the inverse transportation cost in the Hotelling model, but there are many alternative interpretations.

investment and let $\gamma_i(a_i)$ denote firm i's operating cost (where γ_i' is typically weakly positive), then

$$c_i'(a_i) = \gamma_i'(a_i) - \alpha_I W_i'(a_i) - \alpha_W W_i'(a_i),$$

and the analysis carries over with $c_i' < 0$ if γ_i is constant. A moral action then reduces the cost of doing business. The sign of $c_i'(a_i)$ thus hinges on the context.

Under ethical or indifferent consumers, if $c_i'(a_i) \leq 0$, then a more moral behavior does not reduce demand, morally pleases the supplier, and does not increase cost: the optimal choice of firm i is a no-brainer.[12] To avoid mentioning such trivial corner solutions, we require that $c_i'(a_i) > 0$ when consumers are ethical and indifferent. More generally, we will rule out corner solutions for expositional simplicity.

Suppliers' objective functions.—Suppliers care about profit but have social preferences, as reflected in their internalization of welfare.[13] Supplier i's internalization of social welfare, $\mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a})$, depends on net prices and ethical choices. Let $\alpha_i \geq 0$ denote supplier i's (common knowledge) intrinsic ethics, that is, the weight on welfare relative to that on profit. Supplier i maximizes the sum of profit and internalized perceived social welfare; if we let $\alpha_i \geq 0$ denote the intensity of her social preferences,[14] her utility function is

$$V_i \equiv [p_i - c_i(a_i)]D_i(\hat{\boldsymbol{p}}) + \alpha_i \mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a}). \tag{2}$$

Note that in corporations that are run by managers, the relative weight suppliers put on profit and social welfare hinges on their compensation scheme. For example, the behavior of a supplier i who is an agent with social preferences α_i and receives a fraction ξ_i of the profit associated with their activity is indistinguishable from that of a residual claimant for the firm's profit with social preference parameter $\hat{\alpha}_i \equiv \alpha_i/\xi_i$. For example, private equity and leveraged buyouts are usually characterized by high-powered incentives (high ξ_i).[15]

We assume that suppliers care about the social impact of the industry's aggregate activity (broad bracketing)—for example, the resulting total

[12] For example, with $c_i'(a_i) = -(\alpha_I + \alpha_W)W_i'(a_i)$, then supplier i, when endowed with social preferences as described shortly, chooses $a_i = \bar{a}_i$.

[13] See sec. III.B.4 for alternative moral imperatives.

[14] Were social preferences not common knowledge, suppliers might be reputation conscious, in which case the objective function below would have to be augmented with an image term, as in, e.g., Bénabou and Tirole (2006).

[15] Such reinterpretations must be kept in mind when thinking about the opioid scandal, as Purdue Pharma had access to the doctors' prescription data and could (and did) provide high-powered incentives to its sales representatives (see US General Accounting Office 2003; also discussed in sec. V.B).

pollution or opioid overuse—and so we can drop the subscript i for $\mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a})$. We define this ethical welfare as

$$\mathcal{W}(\hat{\boldsymbol{p}}, \boldsymbol{a}) = \mathcal{E}(\hat{\boldsymbol{p}}, \boldsymbol{a}) \equiv \Sigma_{j=0}^{n} W_j(a_j) D_j(\hat{\boldsymbol{p}}).$$

The frequent appeal to the replacement excuse in the policy debate justifies for expositional purposes this particular choice of internalization (which in proposition 3 will imply that for given prices, unethical behavior by other suppliers vindicates one's own unethical choice). However, section III.B.1 will show that consequentialism accommodates a large class of internalizations by the suppliers (namely, those for which $\partial \mathcal{W}_i / \partial a_i = \Gamma_i(a_i) D_i(\hat{\boldsymbol{p}})$ for some nonincreasing, nonnegative function $\Gamma_i(a_i)$; $\Gamma_i(a_i) = W_i'(a_i)$ in the special case of ethical welfare internalization). Namely, we make the more general assumption:

ASSUMPTION 2 (Consequentialism). A supplier internalizes the impact of a change in its own moral choice in proportion of the quantity it sells. Stakeholders' (consumers, workers, investors) perception of the social impact of their trade is proportional to the size of this trade.

Consequentialist preferences have been explicitly assumed for suppliers. They have been assumed more implicitly and mechanically for other players, as they transact only one unit of good, labor, or savings. However, the theory carries over to arbitrary trade sizes, as long as the internalized welfare impact of ethical choice scales with quantity (e.g., a consumer consuming q units from supplier i at tariff $T_i(q)$ internalizes net tariff $T_i(q) + \phi_i(a_i)q$).

Strategies and equilibrium.—We look at Nash equilibria of the industry game in which the suppliers select simultaneously their price and their ethical action and then consumers select their supplier or choose the outside option. An important assumption is as follows:

ASSUMPTION 3 (Flexible prices). Prices are (locally) flexible at equilibrium price configuration $\hat{\boldsymbol{p}}$. Namely, for equilibrium choices $(p_j, a_j)_{j=1,\ldots,n}$, any local change in ethical behavior δa_i can be offset by a price change $\delta p_i = -\phi_i'(a_i)\delta a_i$ so as to keep supplier i's net price $\hat{p}_i$ and therefore demand $D_i(\hat{\boldsymbol{p}})$ constant.

Flexible pricing is a central assumption in much of economics. While it is a natural leading assumption, it does not apply to every context. Prices are flexible at some price configuration $\hat{\boldsymbol{p}}$ if (1) price p_i is not locally constrained by a public or private regulation and (2) supplier i's corporate charter or limited liability constraint does not preclude it from increasing or decreasing its price. The second condition is violated if the supplier is not-for-profit, even though its price is then endogenous. It also fails to hold if supplier i were to lose money at its optimal choice. Therefore, assumption 3 will be made (and verified, as it is an endogenous assumption) in section III but not in section IV.

III. The Irrelevance Result

A. *Derivation*

We first derive the paper's main result.

PROPOSITION 1 (Irrelevance). Suppose that prices are flexible at an equilibrium $(\hat{\boldsymbol{p}}, \boldsymbol{a})$. Supplier i's ethical behavior $a_i^\dagger$ is then uniquely defined by

$$\alpha_i W_i'(a_i^\dagger) = c_i'(a_i^\dagger) + \phi_i'(a_i^\dagger). \tag{3}$$

It is therefore independent of the demand curve D_i faced by firm i and thus of the intensity of competition.

Proof of proposition 1. Using the definition of net prices, we can rewrite supplier i's objective function as

$$V_i = [\hat{p}_i - \phi_i(a_i) - c_i(a_i)]D_i(\hat{\boldsymbol{p}}) + \alpha_i \mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a}). \tag{4}$$

Because $\partial \mathcal{W}_i/\partial a_i = W_i'(a_i)D_i(\hat{\boldsymbol{p}})$ and (from the envelope theorem) $\partial V_i/\partial \hat{p}_i = 0$, supplier i's optimal ethical choice satisfies

$$\frac{\partial V_i}{\partial a_i} = 0 = [-\phi_i'(a_i) - c_i'(a_i) + \alpha_i W_i'(a_i)]D_i(\hat{\boldsymbol{p}}). \tag{5}$$

Hence, supplier i's ethical behavior a_i is independent of the demand function and so of the intensity of competition. The first-order condition with respect to a_i yields condition (3).[16]

The left-hand side of condition (3) (the supplier's marginal demand for ethical behavior) is decreasing in a_i, while the right-hand side (the generalized marginal cost) is increasing; furthermore, as a_i tends to $\bar{a}_i$ (0), the left-hand side goes to 0 ($+\infty$). So even though the sign of c_i' and ϕ_i' can be positive or negative as we discussed, given that $\alpha_i W_i - c_i - \phi_i$ is strictly concave, condition (3) defines a unique level of ethics $a_i^\dagger$.[17] QED

The simple but striking irrelevance result runs counter to the conventional wisdom that competition erodes firms' moral compass. It calls for four comments:

1. *Intuition.*—When facing UPI consumers, say, a more elastic demand increases the market share loss from ethical behavior and makes the supplier cut ethical corners, as suggested by the conventional wisdom. However, there is a second reduced-stakes effect: a more intense competition reduces prices and markups, making ethical concerns loom larger

[16] See app. 2 for the verification of the global second-order condition in the case of a covered market symmetric equilibrium.

[17] As stated earlier, we ignore corner solutions at $a_i = \bar{a}_i$. If $\alpha_i W_i'(\bar{a}_i) - \phi_i'(\bar{a}_i) - c_i'(\bar{a}_i) > 0$, then $a_i^\dagger$ is still unique and equal to $\bar{a}_i$. If overly prosocial actions ($W_i'(a_i) < 0$) were allowed, the optimum might again be interior. In any case, the equilibrium moral action remains (1) unique and (2) independent of the demand curve.

relative to material ones. These two effects exactly offset each other when suppliers have consequentialist preferences and returns to scale are constant.

Why the offset is complete can be grasped from the following cost minimization reinterpretation, in which the supplier wants to transfer utility to consumers as efficiently as possible. Rewrite the objective function V_i as

$$V_i = [\hat{p}_i - c_i(a_i) - \phi_i(a_i) + \alpha_i W_i(a_i)]D_i(\hat{\boldsymbol{p}}) + K(\hat{\boldsymbol{p}}, \hat{\boldsymbol{a}}_{-i}),$$

and so supplier i's unit cost is $c_i(a_i) + \phi_i(a_i) - \alpha_i W_i(a_i)$. Price flexibility, together with consequentialism and constant returns to scale, enables a decoupling between cost minimization and the choice of net price.[18]

2. *Role of price flexibility.*—The proof of proposition 1 relies solely on the first-order condition with respect to a_i when supplier i also picks the net price $\hat{p}_i$; the flexible price assumption then implies that the choice of a_i can be performed keeping the net price $\hat{p}_i$ and therefore demand D_i constant. Consider the first-order condition with respect to the ethical choice ($\partial V_i/\partial a_i = 0$) for given prices $\boldsymbol{p} = (p_1, \ldots, p_n)$. When prices are not flexible, there is no such possible adjustment in the net price, and so a change $\delta a_i = \varepsilon$ is accompanied with a change in the net price $\delta\hat{p}_i = \phi_i'(a_i)\varepsilon$. Thus, condition (5) now involves a total derivative, with $dV_i/da_i = \partial V_i/\partial a_i + \phi_i'(\partial V_i/\partial \hat{p}_i)$. Behaving more ethically (increasing a_i) has now three effects on supplier i's payoff function $V_i = [p_i - c_i(a_i)]D_i(\hat{\boldsymbol{p}}) + \alpha_i \mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a})$:

$$\frac{\partial V_i}{\partial a_i} = \underbrace{(p_i - c_i)\phi_i' \frac{\partial D_i}{\partial \hat{p}_i} - c_i' D_i}_{\text{impact on profit}} + \underbrace{\alpha_i W_i' D_i}_{\substack{\text{ethical impact} \\ \text{on supplier } i\text{'s} \\ \text{inframarginal} \\ \text{consumers}}} + \underbrace{\alpha_i \phi_i' \frac{\partial \mathcal{W}_i}{\partial \hat{p}_i}}_{\substack{\text{ethical impact} \\ \text{of gain/loss in} \\ \text{market share}}} = 0, \quad (6)$$

using

$$\frac{\partial D_i}{\partial a_i} = \phi_i' \frac{\partial D_i}{\partial \hat{p}_i} = \phi_i' \frac{\partial D_i}{\partial p_i}. \quad (7)$$

Sections IV.A and IV.B will study the case of fixed prices in detail. For example, in the case of a symmetric oligopoly with a covered market and uniform regulated price p, dropping subscripts, we will show that the equilibrium morality, a^*, is given by

[18] The same reasoning holds under Cournot competition, replacing the vector of net prices $\hat{\boldsymbol{p}}$ by that of quantities $\boldsymbol{q}$ (sec. III.B.2). It also holds for multiunit demand consumers when each supplier i offers a (possibly nonlinear) tariff $T_i(q_i)$, and demand is $D_i(\boldsymbol{T})$, where $\boldsymbol{T} \equiv (T_1(\cdot), \ldots, T_n(\cdot))$ (app. 3). Finally, regardless of whether competition is in price or quantity, one could add suppliers' choices of a dimension of quality that is devoid of moral connotation, again yielding the same demonstration of the irrelevance result.

$$\frac{\alpha W'(a^*) - c'(a^*)}{\phi'(a^*)} = \eta L,$$

where $L = (p - c)/p$, the Lerner index, is exogenously given for the firms. Moral choices then depend on the elasticity of demand η in a way that hinges on whether the consumers are UPI or ethical ($\phi' \gtrless 0$). (Price flexibility ensures that $L = 1/\eta$.)

3. *When are prices flexible?*—Consequentialism and constant returns to scale are embodied in the model. In contrast, the third key assumption—price flexibility—is an endogenous assumption to be verified ex post by looking at the putative equilibrium. Suppose that prices are unregulated but that the suppliers cannot lose money (supplier i's choices must satisfy $p_i - c_i(a_i) \geq 0$). Prices are indeed flexible if this break-even constraint is nonbinding.

DEFINITION (Social responsibility index). The social responsibility index S_i is defined as

$$S_i \equiv \Sigma_{j \neq i; j \geq 0} \sigma_{ij}(\hat{\boldsymbol{p}})[W_i(a_i) - W_j(a_j)],$$

where $\sigma_{ij}(\hat{\boldsymbol{p}}) \equiv [\partial D_j/\partial p_i]/[-\partial D_i/\partial p_i]$ (so $\Sigma_{j \neq i; j \geq 0} \sigma_{ij} = 1$) measures the fraction of the market share gain by supplier i that comes from supplier j's customers when supplier i lowers her price by one unit.

Note that $\partial S_i/\partial a_j < 0$ and that at a symmetric covered market equilibrium, $S_i = 0$.

PROPOSITION 2 (Flexible prices). Conditions that are individually sufficient for prices to be flexible at the putative equilibrium include the following:

- either the equilibrium is symmetric and covered;
- or the equilibrium is symmetric and $a^\dagger \leq a_0$, where a_0 is the morality of the outside option;
- or, ceteris paribus, ethical concerns α_i are small enough;
- or else competition, as measured by the semielasticities of individual demands, is not too strong.

Proof of proposition 2. The first-order condition corresponding to the maximization of V_i with respect to $\hat{p}_i$ yields a generalized Lerner formula:

$$\frac{p_i - c_i(a_i^\dagger) + \alpha_i S_i(\hat{\boldsymbol{p}}, \boldsymbol{a}^\dagger)}{p_i} = \frac{1}{\eta_i}. \tag{8}$$

Thus, prices are locally flexible if and only if $p_i \geq c_i(a_i^\dagger)$, or

$$\alpha_i S_i(\hat{\boldsymbol{p}}, \boldsymbol{a}^\dagger) \leq \frac{p_i}{\eta_i}. \tag{9}$$

Consider a symmetric equilibrium. Either the market is covered (all consumers purchase) and then $S_i(\hat{\boldsymbol{p}}, \boldsymbol{a}^\dagger)$ is equal to 0. Or the market is not covered, and in a symmetric equilibrium $a^\dagger$, $S_i(\hat{\boldsymbol{p}}, \boldsymbol{a}^\dagger) \leq 0$ if and only if $a^\dagger \leq a_0$. This case arises if the absence of trading by the industry yields a virtuous outcome (e.g., no pollution or no corruption).

Finally, consider a family $\{\alpha_i = \lambda\alpha_i^1\}_i$; then one can show that for $\lambda \leq \bar{\lambda}$ for some $\bar{\lambda} > 0$, equilibrium prices exceed unit costs. As λ become small, $a_i^\dagger$ converges to the level that obtains for $\alpha_i = 0$ and $\alpha_i S_i(\hat{\boldsymbol{p}}, \boldsymbol{a}^\dagger)$ tends to 0. Moreover, when the semielasticity η_i/p_i is small, the right-hand side of (9) is large. QED

4. *What are the drivers of ethics under price flexibility*?—From equation (3), equilibrium ethics under flexible prices is independent of the degree of competition but is influenced by the ethical urges of the suppliers and stakeholders. Indeed, if we come back to our earlier characterization of $c_i'(a_i)$ as consisting of an operating cost $\gamma_i(a_i)$ minus a discount reflecting workers' and investors' social concerns, condition (3) can be rewritten as

$$(\alpha_i + \alpha_W + \alpha_I)W_i(a_i) - \phi_i'(a_i) = \gamma_i'(a_i). \tag{10}$$

When consumers are ethical, $-\phi_i'(a_i)$ becomes $+\alpha_C W_i(a_i)$ and equilibrium ethics then increases in $\alpha_i + \alpha_W + \alpha_I + \alpha_C$, the sum of the ethical urges of all stakeholders and supplier i. When consumers are indifferent, $-\phi_i'(a_i)$ disappears and equilibrium ethics increases in $\alpha_i + \alpha_W + \alpha_I$. And when they are UPI, equilibrium ethics still increases in $\alpha_i + \alpha_W + \alpha_I$—the sum of the ethical urges of suppliers, workers, and investors—but decreases when ϕ_i' increases.

B. Robustness

This section performs a few robustness checks. It focuses in turn on alternative forms of consequentialism, on other forms of competition (Cournot competition, tacit collusion), and on two of the three key assumptions: constant returns to scale and consequentialist preferences (the relaxation of price flexibility is found in sec. IV). Appendix 3 further shows that the irrelevance result remains valid under imperfect consumer information and under volume-based price discrimination. In contrast, the intensity of competition has an ambiguous impact on ethics under ethics-based price discrimination. The punch line is that the irrelevance result is pretty general, with the key exceptions being in section IV.

A reader wishing to move on to the study of nonflexible prices can skip this robustness section without loss of understanding.

1. Alternative Forms of Consequentialism

Suppliers.—We assumed that suppliers internalize ethical welfare $\mathcal{E} = \Sigma_j W_j(a_j)D_j(\hat{\boldsymbol{p}})$. More generally, the proof of proposition 1 shows that it still holds as long as marginal internalized welfare impacts scale with actual impacts, that is, are proportional to demands: there exists a nonnegative, nonincreasing function $\Gamma_i(a_i)$ such that $\lim_{a_i \to 0}\Gamma_i(a_i) = +\infty$ and $\lim_{a_i \to \bar{a}_i}\Gamma_i(a_i) = 0$, and

$$\frac{\partial \mathcal{W}_i}{\partial a_i} = \Gamma_i(a_i)D_i(\hat{\boldsymbol{p}}). \tag{11}$$

That $\partial \mathcal{W}_i/\partial a_i$ is proportional to demand D_i is required by consequentialism: ethical choices are uniform over supplier i's customers and so their impact on well-being is proportional to demand. The condition that Γ_i be nonincreasing simply expresses the idea that returns to the ethical choice are nonincreasing. This consequentialist internalization admits a wide variety of perceptions of social well-being.[19] Besides ethical welfare, condition (11) is in particular satisfied by the following:

Narrow ethical welfare.—Suppliers sometimes take a narrower view of ethical welfare, associated with the impact of their own production on well-being:[20]

$$\mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a}) = \mathcal{E}_i^n(\hat{\boldsymbol{p}}, \boldsymbol{a}) \equiv W_i(a_i)D_i(\hat{\boldsymbol{p}}).$$

Note that such narrow bracketing is not specific to suppliers and is also relevant for stakeholders when they experience a warm glow. As we noted in the introduction, our analysis just assumes consequentialist preferences for suppliers and stakeholders.

Broader internalization.—Conversely, what economists would call welfare usually encompasses other inefficiencies than those channeled through the choice of a_i. Appendix 3 shows that the analysis remains unchanged if suppliers internalize, on top of ethical welfare,

- consumer surplus (a drop in price reduces consumption distortions if the market is not covered); and

[19] Similarly, we assumed that workers and investors (partly) internalize $W_i(a_i)$. While this is natural, the irrelevance result does not hinge on this assumption. As for suppliers, one could assume that they internalize an arbitrary $\Lambda_i(a_i)$ per unit (with $\Lambda_i' > 0 > \Lambda_i''$; they could also have internalizations that differ across stakeholders).

[20] The distinction between ethical and narrow ethical welfares is reminiscent of Oehmke and Opp's (2023) distinction between broad and narrow mandates and Green and Roth's (2023) contrast between sophisticated and naive social investors (or impact and value investors).

- product misallocation (under asymmetric oligopoly or when net prices differ in a symmetric oligopoly, consumers are misallocated to products and thus do not necessarily consume their preferred product).

In both cases, suppliers' social preferences reflect inefficiencies that depend on only the vector of net prices. The efficiency-based foundation of irrelevance still holds.

2. Other Forms of Competition

i. *Strategic complements versus strategic substitutes (prices vs. quantities).*—Is the irrelevance property specific to the differentiated products Bertrand model? Consider the Cournot model with perfect substitutes.[21] Each supplier i first picks (q_i, a_i). The suppliers then bring their production to the market. Finally, a Walrasian auctioneer clears the market (which then has a fixed supply). Under Cournot competition and for total quantity $Q = \Sigma_{j=1}^{n} q_j$, all net prices are equalized in the market clearing process:[22]

$$P(Q) = p_i + \phi_i(a_i).$$

There is no replacement effect here, as an increase in a_i under UPI consumers does not induce an increase in q_j. Formally, $\sigma_{ij} = 0$ for $j \neq i, 0$ and $\sigma_{i0} = 1$. Supplier i's social responsibility index is therefore (up to a term that does not depend on $\{q_i, a_i\}$) $S_i(a_i) = W_i(a_i) - W_0(a_0)$. Supplier i solves

$$\max_{(q_i, a_i)} [P(\Sigma_{j=1}^{n} q_j) - c_i(a_i) - \phi_i(a_i)]q_i + \alpha_i S_i(a_i) q_i.$$

The first-order condition with respect to a_i yields the irrelevance result for strategic substitutes for the nonmoral choice:

$$a_i = a_i^{\dagger}, \text{ where } \alpha_i W_i'(a_i^{\dagger}) = c_i'(a_i^{\dagger}) + \phi_i'(a_i^{\dagger}).$$

The outcome in quantities is given by the Cournot outcome with unit cost:

$$\hat{c}_i \equiv c_i(a_i^{\dagger}) + \phi_i(a_i^{\dagger}) - \alpha_i[W_i(a_i^{\dagger}) - W_0(a_0)].$$

ii. *Tacit collusion.*—Consider a symmetric, perfect substitutes, n firm oligopoly with total demand function $D(\hat{p})$ (where $\hat{p}$ is the lowest price, the common price in a symmetric equilibrium), unit cost $c(a)$, and consumer internalization $\phi(a)$, with the assumptions made earlier. Suppliers' social

[21] This is only for conciseness. The following reasoning applies also to the differentiated products Cournot model.

[22] If $F(v)$ is the cumulative distribution of valuations, then the inverse demand function $P(Q)$ is given by $Q = 1 - F(P(Q) - \phi_0(a_0))$ (or $1 - F(P(Q) - p_0 - \phi_0(a_0))$ if the outside option has a nonzero price).

preferences exhibit narrow bracketing (broad bracketing raises difficult conceptual issues for cartels and tacit collusion, which are discussed in app. 3). Suppose that suppliers can collude tacitly, with reversal to Nash (the static outcome) in case of collusion breakdown; let V^{Nash} denote the per-period Nash payoff. Time is discrete: $t \in \{0, 1, 2\ldots\}$. The discount factor is δ. The per-firm payoff in a symmetric collusive outcome $\{\hat{p}, a\}$ is

$$V \equiv \max_{\{\hat{p},a\}} \left\{ [\hat{p} - \phi(a) - c(a)] \frac{D(\hat{p})}{n} + \alpha W(a) \frac{D(\hat{p})}{n} \right\}.$$

Sustainability requires that a supplier does not benefit from undercutting rivals:

$$\frac{V}{1-\delta} \geq \max_{\{a'\}} \left\{ [\hat{p} - \phi(a') - c(a') + \alpha W(a')] D(\hat{p}) + \delta \frac{V^{\text{Nash}}}{1-\delta} \right\}.$$

Thus, both the cartel's optimal policy and the optimal deviation adopt the cost-minimizing moral behavior (given by $\alpha W'(a^\dagger) = \phi'(a^\dagger) + c'(a^\dagger)$),[23] and so the irrelevance property holds.[24]

3. Nonconstant Returns to Scale

We listed constant returns to scale as a key assumption for the irrelevance result. To see why, consider an arbitrary cost function $C_i(q_i, a_i)$. The generalization of condition (3) is then

$$\frac{\partial C_i(q_i, a_i)/\partial a_i}{q_i} + \phi_i'(a_i) = \alpha_i W_i'(a_i). \tag{12}$$

There are interesting cases in which returns are not constant in quantity and yet competition is irrelevant for moral choices:

i. *Separability.*—Suppose (as we did earlier) that the moral action impacts cost proportionally to output while returns need not be constant: $C_i(q_i, a_i) = c_i(a_i)q_i + d_i(q_i)$. Condition (12) then implies the irrelevance property.[25]

[23] Note that it is not worth distorting the cartel's policy to deter deviations: undercutting always takes the form of a better offer $\hat{p} - \varepsilon$ to consumers, and given this better offer, cost minimization is optimal for the deviator.

[24] We do not need to derive V^{Nash}. But under Bertrand competition with perfect substitutes, then $p^* = c(a^\dagger) - \alpha W(a^\dagger)$, a limit case of condition (8) (with, say, $W(a^\dagger) = -\psi(a^\dagger)e$ in the externality interpretation). To see this, consider a supplier's deviation to $\{p, a\}$. To benefit the supplier, the deviation must attract consumers ($p^* + \phi(a^\dagger) > p + \phi(a)$) and benefit the supplier ($p - c(a) + \alpha W(a) > p^* - c(a^\dagger) + \alpha W(a^\dagger)$). This, however, contradicts the fact that $a^\dagger$ maximizes $\alpha W(a) - c(a) - \phi(a)$. Thus, $V^{\text{Nash}} = 0$. So the Nash payoff is also the minmax payoff.

[25] We have not undertaken a general study for nonconstant returns to scale. Let us just add that, besides these three irrelevance situations, competition makes the market more

An important example of separability arises when the moral incentive does not reside on the cost side (C_i depends only on q_i) but on the demand side, as is the case in the examples with UPI consumers mentioned in the introduction. Then (12) boils down to $\phi_i'(a_i) = \alpha_i W_i'(a_i)$, and so the irrelevance property holds regardless of the returns to scale.

ii. *Covered market.*—Suppose a symmetric covered market. Then equilibrium scale is invariant to competition ($q_i = 1/n$), and so is the moral action. Irrelevance holds again.

4. Nonconsequentialist Preferences

Last, focusing on supplier ethics, we compare the implications of consequentialism with those of the two main alternatives to consequentialism in moral philosophy: deontologism and categorical imperative. In the former, the supplier cares about her selected action rather than about its consequences; the impact of competition depends on the way in which it affects the profit stake of moral actions. In the latter, each supplier assumes that everybody will mimic her action choice, and so the suppliers' optimum always occurs. We thus obtain testable differences in the predictions of consequentialist and alternative moral criteria.

i. *Deontologism.*—Deontologism postulates that the morality of an action is based on whether the action is in itself right or wrong, irrespective of its scale and its consequences. Suppose therefore that supplier i values the act per se rather than its consequences. For instance, supplier i's payoff could be $V_i = [p_i - c_i(a_i)]D_i(\hat{\boldsymbol{p}}) + \alpha_i \mathcal{W}_i(a_i)$, where $\mathcal{W}_i(a_i)$ (satisfying $\mathcal{W}_i' > 0 > \mathcal{W}_i''$) is an increasing and concave function of a_i. Such preferences are only partly deontological, as they reflect a material component (unless α_i is large).[26] The first-order condition for the moral choice under flexible prices writes $(\phi_i'(a_i) + c_i'(a_i))/(\alpha_i \mathcal{W}_i'(a_i)) = 1/D_i(\hat{\boldsymbol{p}})$, and so the irrelevance property associated with consequentialist preferences in general does not hold.[27] If competition results in an expansion of the per-firm production (D_i increases), the profit motive is magnified relative to the ethical one and morality is eroded. A stricter enforcement of antitrust laws is an example in which increased competition is associated with an expansion of per-firm output. In contrast, if increased competition results from an

immoral in the symmetric multiplicative form: $C(q, a) = c(a)d(q)$, assuming that average cost (and so $d(q)/q$) is increasing in q.

[26] Such preferences exhibit Kahneman and Knetsch's (1992) embedding effect. Contingent valuations surveys tend to deliver stated willingnesses to pay that neglect scale.

[27] The irrelevance property still holds when the market is symmetric and covered ($D_i = 1/n$) and the increase in competition comes from an increase in substitutability, keeping the number of firms constant; in contrast, if the market is covered but the increase in competition comes from entry of new firms (n increases), the increase in competition fosters moral behavior: competition limits financial stakes and makes it more appealing to "do the right thing."

increase in the number of licenses (an increase in n) and the market is covered, more competition is associated with a decline in per-firm output D_i; in this case, competition boosts the ethical behavior of firms with deontological preferences.

ii. *Categorical imperative.*—Suppose that suppliers follow Kant's categorical imperative. If the market is covered,[28] then each supplier—behaving as if her choice was to be mimicked by other suppliers—selects the socially optimal action (assuming symmetry, otherwise it is not clear what the categorical imperative means). Suppliers behave fully ethically (as if $\alpha_i = +\infty$) regardless of the intensity of competition and so raise no moral concerns.

In conclusion, not only does the model accommodate a range of variations on the moral criterion but also the irrelevance result is valid under the categorical imperative criterion, although with a highly moral outcome. As for deontologism, the impact of the intensity of competition is nonzero, but it is ambiguous and depends on the precise driver of the increase in competition.

IV. Limits to Price Flexibility

Is the widespread opinion that competition erodes morality groundless? Proposition 1 suggests answers to this question. An impact of competition on (consequentialist) moral behavior may be related to prices not being flexible. If so, should we expect market morality to increase or decrease with the intensity of competition?

A. Determinants of Moral Choices for Given Prices

Assuming that suppliers wage differentiated product price competition (as we will do in the rest of sec. IV) and that internalized welfare is ethical welfare, this section shows that ethical choices are strategic complements for two reasons: an elasticity effect (which is inherited from the strategic complementarity in the price space) and, in the case of UPI consumers, a social responsibility effect (an increase in rivals' ethical behavior makes it less desirable to steal market share away from them by cutting ethical corners). Furthermore, while the equilibrium ethical behaviors are uniquely determined when prices are flexible, they may not be when prices are not flexible, which requires either making assumptions guaranteeing equilibrium uniqueness (which we will do) or pursuing monotone comparative statics. Appendix 4 shows that similar but differentiated results hold for

[28] We are agnostic as to the meaning of the categorical imperative in the presence of outside options, as the latter have no reason to obey the imperative and align the moral content with the suppliers' moral choice.

other forms of consequentialist internalization (e.g., for narrow internalization, strategic complementarity is driven by the sole elasticity effect).

PROPOSITION 3 (Sufficient conditions for strategic complementarity).

i. For given prices, ethical choices are strategic complements if (*a*) consumers are UPI or (*b*) suppliers do not internalize the social impact of their ethical choices too much.[29]
ii. While the equilibrium moral actions are unique under price flexibility, there may be multiple equilibrium moral actions for fixed prices.

We provide only the intuition for the proof of proposition 3 here (see app. 4 for a formal proof). The maximization of $V_i = [p_i - c_i(a_i)]D_i(\hat{\boldsymbol{p}}) + \alpha_i \mathcal{W}_i(\hat{\boldsymbol{p}}, \boldsymbol{a})$ with respect to a_i (taking the total derivative, as explained in sec. III.A) yields

$$\frac{\alpha_i W_i'(a_i) - c_i'(a_i)}{\phi_i'(a_i)} = \eta_i \frac{p_i - (c_i - \alpha_i S_i)}{p_i}. \tag{13}$$

The left-hand side of (13) is the per-unit-of-output benefit for the supplier of behaving more morally (expressed in monetary terms through the division by $\phi_i'(a_i)$). Our assumptions imply that it is locally decreasing in a_i (independent of the sign of ϕ_i') and is independent of the competitive pressure. The right-hand side of (13) is the familiar product of the elasticity of demand by the firm's Lerner index, except that the marginal cost c_i is corrected for supplier i's social responsibility index. Condition (13) points at two factors of strategic complementarity (how a_j affects the choice of a_i):

- Elasticity effect: because price and moral choices jointly determine the net price ($\hat{p}_i = p_i + \phi_i(a_i)$), a strategic complementarity of moral choices is inherited from the strategic complementarity in the price domain.
- Social responsibility effect: because $\partial S_i/\partial a_j < 0$ (stealing market share away from a moral supplier j is less morally attractive) under UPI consumers, a higher a_j increases the incentive to raise a_i, creating a second source of strategic complementarity.

Given strategic complementarity, it is straightforward to construct examples with multiple equilibria in the choice of actions (even symmetric ones; see app. 4). For this reason, the following analysis requires conditions ensuring the existence of a unique equilibrium (alternatively, we could obtain monotone comparative statics).

[29] This can be captured by scaling the internalization parameters by some λ: $\lambda\alpha_i$. Then for $\lambda \leq \bar{\lambda}$ for some $\bar{\lambda} > 0$, ethical choices are strategic complements.

B. Regulated Prices in Symmetric Oligopoly

DEFINITION (Symmetric oligopoly). The oligopolistic market is symmetric if

i. the functions ϕ, c, and W are the same for all firms;
ii. suppliers have symmetric demand functions ($D_i(\hat{p}_i, \hat{\boldsymbol{p}}_{-i})$ is invariant to permutations of $\hat{\boldsymbol{p}}_{-i}$ and $D_j(\hat{p}_i, \hat{\boldsymbol{p}}_{-i}) = D_i(\hat{p}_i, \hat{\boldsymbol{p}}_{-i})$ for all $(\hat{p}_i, \hat{\boldsymbol{p}}_{-i})$) and the same social preferences ($\alpha_i = \alpha$ for all i); and
iii. the market is covered.[30]

Suppose that prices are regulated at the same level p. By "symmetric equilibrium," we will mean an equilibrium in which all suppliers pick $a_i = a^*$ for some a^*, and the market is covered. The strategic complementarity between moral choices (proposition 3) that always obtains under UPI consumers and may obtain under ethical consumers makes multiple equilibrium moral norms common. Appendix 5 establishes assumptions that guarantee equilibrium uniqueness and allow us to prove the comparative statics stated in the following proposition. For the purpose of proposition 4, we will assume that on $[0, \bar{a}]$, the function $\alpha W'(a) - c'(a) - \phi'(a)[\eta(p, a)L(p)]$ is decreasing in a; this assumption results from our previous assumptions under flexible prices (which guarantee that $\eta L \equiv 1$) but must be added to obtain a unique solution when prices are regulated.

PROPOSITION 4 (Impact of competition on ethics under regulated prices). Consider a symmetric covered market oligopoly equilibrium. The symmetric equilibrium level of ethics is given by

$$\frac{\alpha W'(a^*) - c'(a^*)}{\phi'(a^*)} = \eta(p, a^*)L(p), \tag{14}$$

where $L(p) \equiv (p - c)/p$.

i. (Elasticity of demand). Suppose that an exogenous parameter $\sigma \in (0, \infty)$ (e.g., a substitutability parameter or the number of firms)[31] moves the elasticity $\eta(p, a^*; \sigma)$, with $\partial\eta/\partial\sigma > 0$ and $\lim_{\sigma \to \infty}\eta = +\infty$. Then, with UPI (ethical) consumers, the equilibrium level of ethics a^* is decreasing (increasing) in the intensity of competition (σ).

[30] A covered market combined with the symmetry among the n suppliers will imply that the firm's social responsibility index is equal to 0 in equilibrium. In contrast, if the outside option has positive market share, there is no reason why the associated welfare, w_0, be equal to the welfare generated by the suppliers, w^*, and that $S_i = 0$ in equilibrium. In general, there cannot be symmetry between the options chosen by the consumers if the outside option has positive market share.

[31] Suppose, e.g., a linear demand system: $D_i = (1/n) - \sigma[\hat{p}_i - (\Sigma_{j \neq i}\hat{p}_j/(n-1))]$. Then, at a symmetric equilibrium, $\eta(p, a^*)L(p) = [\sigma np][(p - c)/p] = \sigma n(p - c)$. So the substitutability parameter σ and the number of firms n are alternative measures of how competitive the industry is.

ii. (Regulated price level). Under the (weak) condition that $\partial(\eta(p, a)L(p))/\partial p > 0$, the equilibrium level of ethics a^* with UPI (ethical) consumers is decreasing (increasing) in the fixed price (p).[32]

Proof of proposition 4. Differentiating equation (14) yields

$$\frac{\partial}{\partial a}[\alpha W'(a) - c'(a) - \phi'(a)\eta(p, a)L(p)]da - \frac{\partial}{\partial p}[\eta(p, a)L(p)]dp$$

$$- \frac{\partial}{\partial \sigma}[\eta(p, a)L(p)]d\sigma + W'(a)d\alpha = 0.$$

The comparative statics then follow. QED

Proposition 4 demonstrates the sharp contrast between the case of UPI consumers (for which an increase in competition or in price makes the market less moral) and that of ethical consumers (where they make the market more moral). Intuitively, a supplier who cannot lower price is left with a single margin: the only margin the supplier can use to compete for customers is to reduce the morality of the offering when facing UPI consumers. When competition becomes more intense, the morality of offerings therefore declines. Market outcomes are also likely to be immoral when profit opportunities are sizeable, that is, when the regulated price p is high. When the market is almost perfectly competitive, the only possibility for a supplier to keep market share is to select the most immoral action to attract some UPI consumers.

C. *Asymmetries and Financial Viability*

Regulation is only one reason why a firm's price may not be flexible. A break-even constraint may prevent the supplier from cutting price below cost. Such a downward price rigidity may in turn originate from an asymmetry in preferences (say, a firm is more virtuous than its rivals and may lose money) or in corporate charter (say, the firm may have the nonprofit status). Regarding the latter possibility, it is often argued that industries that are highly exposed to ethical choices, such as health and education, are particularly suited to the nonprofit paradigm.[33] Is this so? Should we expect not-for-profit hospitals or schools to behave differently when in competition with for-profit entities? Furthermore, one would want to

[32] With ethical consumers, when $p = c$, we also have the socially efficient level of ethics $\bar{a}$. With higher prices, a^* can thus only go down, but for very high prices, raising a_i is very attractive, since it is the only way to gain market share. Thus, there is an incentive to go all the way to $\bar{a}$. Of course, for very large p, the assumption that the market is covered becomes much less plausible.

[33] Indeed, many health and school providers around the world are not-for-profit entities when not state owned.

understand how competition among for-profits with different ethical objectives plays out. To contrast it with section IV.B, we assume in the entire section that prices are unregulated.

To encompass both forms of asymmetry within a single framework, we allow suppliers to differ in their corporate forms and/or their ethical values. To avoid compounding multiple sources of heterogeneity, we assume that the suppliers face symmetric demand and cost functions. Suppliers $i \in \{1, \ldots, n_1\}$ are for-profit suppliers ranked by the intensity of their social preferences:[34]

$$0 < \alpha_1 \leq \alpha_2 \leq \cdots \leq \alpha_{n_1}.$$

We keep assuming ethical welfare internalization (even though the results are much more general). As earlier, we denote by $a_i^\dagger$ the supplier-specific level of morality given by condition (3) $(\alpha_i W'(a_i^\dagger) \equiv c'(a_i^\dagger) + \phi'(a_i^\dagger))$, with $a_1^\dagger \leq \cdots \leq a_{n_1}^\dagger$. Suppliers $i \in \{n_1 + 1, \ldots, n\}$ are not-for-profits; note that the absence of profit motive implies that their objective function is $\alpha_i \mathcal{W}_i$, and so their social preferences do not matter whenever $\alpha_i > 0$, which we will assume.[35]

To handle such asymmetric environments, we further strengthen our assumptions:

ASSUMPTION 4 (Linear demand system, covered market). In the relevant prices range, the demand system is $D_i = (1/n) - \sigma[\hat{p}_i - (\Sigma_{j \neq i} \hat{p}_j / (n-1))]$, and so the market is covered.

An important property of this linear demand system is that firm i's change of behavior impacts other suppliers symmetrically.[36] Indeed, if we let $\bar{w}_{-i} \equiv \Sigma_{j \neq i} w_j / (n-1)$ denote the average welfare footprint of i's rivals, the social responsibility index is

[34] $\alpha_1 = 0$ is allowed as well (taking the limit as $\alpha_1 \to 0$). We assume $\alpha_1 > 0$ for expositional simplicity.

[35] We could assume that firms with different corporate status attract employees with different social preferences (see, e.g., Besley and Ghatak 2005; Prendergast 2007; Brekke and Nyborg 2008; Kosfeld and von Siemens 2011; Lazear, Malmendier, and Weber 2012; Barigozzi and Burani 2019; for field experiments on sorting and prosociality, see Ashraf et al. (2020 and references therein). A motivation for this assumption on the empirical side is assortative matching (not-for-profits attract more ethical employees), although it is not clear that working for a not-for-profit is necessarily the moral thing to do for someone who wants to have a strong ethical impact (Singer 2015). The same holds for entry decisions into an industry. It may well be that entering an immoral industry in which one can make a difference is more moral than entering an ethical one (Moisson [2020] shows that the moral pecking order is highly context specific; a known example of this general point concerns socially responsible investment, for which best in class strategy may have a bigger impact than the exclusion of sin stocks; see also Green and Roth [2023]).

Of course, there may be no such thing as a pure not-for-profit. Insiders may manage to convert profits into private benefits; private benefits are an inefficient currency, but more to the point, such conversion of profits would reinstate a role for the not-for-profit suppliers' exact level of altruism.

[36] For example, one can construct strongly asymmetric linear demand systems for which proposition 5 does not hold.

$$S_i = \sigma(w_i - \bar{w}_{-i}).$$

ASSUMPTION 5 (Financial viability) Suppliers must be financially viable: $p_i \geq c(a_i)$ for all i.

To illustrate the rationale for assumption 5 in the case of for-profits, consider an otherwise symmetrical duopoly situation in which one supplier is more ethical than its rival, prices are flexible, cutting ethical corners boosts demand (UPI consumers) and not cost ($c(a_i) = c$ for all a_i), and there exists an interior welfare-maximizing action $\bar{a}$ (such that $W'(\bar{a}) = 0$).[37] Supplier 1 is selfish ($\alpha_1 = 0$) and therefore selects $a_1 = 0$; supplier 2 is a saint ($\alpha_2 = +\infty$) and therefore, in the absence of financial constraint, selects $a_2 = \bar{a}$ and is willing to set any price that will take market share away from firm 1: a deep-pocket, very ethical supplier would lose money when facing a much less ethical rival.[38]

Returning to the general n firm model, assumption 5 deserves a couple of further comments. First, ignoring the issue of access to capital, assumption 5 is irrelevant when differentials in social preferences are not too large; what this exactly means depends on the intensity of competition.[39] Second, assumption 5 is innocuous in the absence of investors who have strong social preferences and are willing to foot the bill for virtuous actions. To be certain, one can think of undertakings that are financed by such investors (like some big nongovernmental organizations or foundations), but the thrust of the debate on market morality is on firms that must at the very least break even (whether for-profits or not-for-profits). Third, we distinguish three groups when describing equilibrium behavior. Unconstrained for-profits select a positive markup ($p_i > c(a_i)$). Proposition 1 then implies that $a_i = a_i^\dagger$. For these suppliers, $w_i \equiv W(a_i^\dagger)$. Constrained for-profits have no markup ($p_i = c(a_i)$) and therefore behave like suppliers in the third group, the not-for-profits. We gather the latter two groups under the heading "constrained suppliers."

We will say that there is a *race to the supplier ethical bottom* if

$$\lim_{\sigma \to +\infty} a_i = a_1^\dagger \text{ for all } i.$$

In particular, in the limit in which one of the suppliers is a pure profit maximizer, a race to the supplier ethical bottom implies that competition prevents any prosocial behavior originating from supplier social preferences; $a_1^\dagger$ still reflects the stakeholders' social preferences though, and therefore ethical behavior need not converge to 0.

[37] $\bar{a}_i$ is finite in all examples provided as microfoundations in app. 1.

[38] For perfect substitutes, supplier 2 loses $\phi(\bar{a}) - \phi(0) > 0$.

[39] For example, for a duopoly (with $\alpha_2 > \alpha_1$) and demand-based benefits from unethical behavior (UPI consumers), a sufficient condition for the financial constraint not to bind is $1 \geq 2\sigma\alpha_2(w_2 - w_1)$, where $\alpha_i W'(a_i) = \phi'(a_i)$ and $w_i \equiv W(a_i)$.

PROPOSITION 5 (Behavioral convergence and race to the supplier ethical bottom). Assume n_1 for-profits with social preferences $\alpha_1 \leq \alpha_2 \leq \cdots \leq \alpha_{n_1}$, $n_2 = n - n_1$ not-for-profits, and flexible prices. Under assumptions 4 and 5:

i. Not-for-profits behave more ethically than for-profits (there exists a^* such that $a_i = a^* \geq a_j$ if $i > n_1 \geq j$). Furthermore, there exists $1 < m \leq n_1$ such that $a_i = a_i^\dagger$ for $i \leq m$ and $p_i = c(a_i)$ and $a_i = a^*$ for $i > m$. That is, constrained suppliers (all not-for-profits and those for-profits who are financially constrained) adopt the same moral behavior and are more virtuous than the financially unconstrained for-profits.

Assume UPI consumers. Then:

ii. The behaviors of all suppliers converge when competition (as indexed by σ) is intense: the for-profits mimic the not-for-profits' low price ($p_i \to c(a_i)$ for all i as $\sigma \to +\infty$), while the latter behave no more ethically than for-profits: there is a race to the supplier ethical bottom: $a_i \to a_1^\dagger$ for all i as $\sigma \to +\infty$.
iii. Suppose that initially there are only not-for-profits. Under intense competition, the entry of a single for-profit changes the not-for-profits' moral behavior from the socially optimal level $\bar{a}$ to the low level $a_1^\dagger$ (and maintains the price close to marginal cost).

Part i of proposition 5 (proved in app. 6) says that the more virtuous among the for-profits are financially constrained and therefore behave like not-for-profits. Their scruples makes them less attractive (in the case of demand-based benefits of unethical behavior) or face a cost disadvantage (for cost-based benefits), making it more difficult to compete for market share and even to break even. This holds for any intensity of competition σ. Part ii looks at intense competition. Under intense competition for consumers, suppliers end up charging similar net prices. The for-profits must lower their markup toward 0 to not lose all demand, while with UPI consumers, the not-for-profits must pander at (approximately) level $a_1^\dagger$ for the same reason. Competition homogenizes behavior across corporate forms and ethical preferences. Convergence happens toward the low-price, low-ethics anchor ($p = c(a_1^\dagger)$, $a = a_1^\dagger$). Thus, not-for-profits have no influence on the market when competition is intense.

Does intense competition crowd out moral behavior?—Proposition 5 indicates that intense competition for UPI consumers crowds out supplier ethics. If firms are all for-profit, formula (10) derived in the absence of financial constraint in section III.A for each supplier i,

$$(\alpha_i + \alpha_W + \alpha_I)W_i'(a_i) - \phi_i'(a_i) = \gamma_i'(a_i),$$

under financial viability becomes in the limit as competition becomes very intense:

$$(\alpha_1 + \alpha_W + \alpha_I)W_i'(a_i) - \phi_i'(a_i) = \gamma_i'(a_i).$$

While intense competition for UPI consumers crowds out supplier ethics, it does not do so for the ethical impact of stakeholders.

Should we expect α_1 to be close to zero when competition in the market is intense? In many countries, shareholder value has become the key force determining firm behavior (with top management being largely paid in stocks and stock options). But, as argued by Broccardo, Hart, and Zingales (2022), this need not imply a pure for-profit behavior without any ethical consideration, since shareholders may have social preferences too. Moreover, the emergence of very large asset managers voting "on behalf of" diversified shareholders and owning stakes in many big players of key markets in the economy is a trend that could reduce the variance of supplier altruism.

Finally, appendix 7 analyzes when competition for UPI consumers should be expected to weed out suppliers with high ethical standards or a nonprofit status (Gresham's law).

V. Relevance

A. *Welfare*

Whether markets increase or decrease ethical behavior is a positive question. For a normative analysis, we must remember that the drivers of the intensity of competition (industry structure and public policy) have effects of their own, even in an homo economicus, no-social-preferences world. Moreover, taking a welfare stance in an environment with social preferences requires making some further assumptions as to how these preferences are accounted for in the social welfare function.

Appendix 8 discusses these choices in detail and derives several insights, assuming as usual that social welfare accounts for consumer welfare as well as (with a smaller weight) supplier profit. In propositions 4 and 5, the intensity of competition changes equilibrium ethics and therefore welfare. But what about proposition 1? The following intuitions and associated results are robust.

First, when suppliers are identical and the market is covered,[40] proposition 1 implies that the optimal public policies (e.g., merger reviews,

[40] When the set of suppliers expand in reaction to the policy (we here have in mind a trade opening) and the new suppliers may face different policy environments—think

trade arrangements, transparency requirements, antitrust oversight) remain unchanged under flexible prices, as the intensity of competition is irrelevant to moral behavior. Put differently, there is no need for revisiting our economics corpus of knowledge to account for social preferences. Second, when the market is not covered, a new effect is at play: whether the outside option is more or less moral than the competing offers. As we noted for energy consumption, the alternative may be energy sobriety (more moral regarding CO_2 emissions) or the use of coal or deforestation (less moral). Appendix 8 obtains the following intuitive result: ceteris paribus, a procompetitive policy that increases welfare in the absence of social preferences ($\alpha_i = 0$ for all $i \geq 1$) a fortiori increases welfare whenever the outside option is no more moral than the market ones (e.g., $a_0 \leq a^\dagger$ if the equilibrium is symmetric). In contrast, when the outside option is more moral than the market ones (e.g., $a_0 > a^\dagger$ if the equilibrium is symmetric), then the analysis is ambiguous: unless social preferences are weak, a procompetitive policy that increases welfare in the absence of social preferences may decrease welfare in their presence.

B. Connection to Real-World Markets

While the broad question of the morality of markets is ancient, it has been prominent in some recent policy discussions.

First, in the matter of antitrust policy: the Biden administration's heads of the Department of Justice and the Federal Trade Commission and the White House advisor on competition policy have pledged to crack down on buyout groups and their "buy, strip, and flip model." Targeting private equity firms as deal sponsors is new territory, as it departs from the antitrust focus on conducts and transactions. This debate on private equity and antitrust would be meaningless if all private entities were pure profit maximizers, as is assumed in much industrial organization. Instead, the underlying view here is that some entities are more assertive profit maximizers, which may create more collateral damages for some stakeholders. Proposals for the revision of the 2011 antitrust guidelines in Europe have also put moral issues at the center stage.[41]

Our theory sheds light on the link between the intensity of competition and equilibrium ethics in a world where intrinsic ethical urges (the α's, which among other things reflect the [inverse] power of the individual

about greenhouse gas emissions or child labor—then a policy maker with their own social preferences may revisit this general principle.

[41] They "aim to make it easier for undertakings to cooperate in ways which are economically desirable and thereby, for example, contribute to the green and digital transitions and to fostering the resilience of the internal market" (European Commission 2023). This statement is directly connected with what the social responsibility of business should be. See also the sustainability chapter (European Commission 2023, chap. 9).

supplier's incentives) can vary. However our irrelevance result shows that reducing competition per se is unlikely to solve the problem. In fact, proposition 1 suggests that competition authorities can safely push for more competition without having to fear negative ethical consequences, at least as long as its actors do not significantly differ in terms of greed.

Ethical debates linked to the intensity of the pursuit of profit are, unsurprisingly, ubiquitous in the healthcare sector, an area where ethical stakes are very high, as patients are often ill-informed.

Scholars have studied the competition between not-for-profit and for-profit hospitals. Proposition 5 is consistent with evidence on the hospital sector. As argued in classic work by Weisbrod (1988) and Hansmann (1996), not-for-profits have historically been an important commitment device against excesses associated with the profit motive (see also Besley and Ghatak 2005). In recent decades, though, for-profit hospitals have made inroads in the sector and, unsurprisingly, have been shown to put more emphasis on profit-related managerial compensation (Ballou and Weisbrod 2003) in comparison with their not-for-profit peers, consistently with part i of proposition 5. In support of part ii of proposition 5, Arnould, Bertrand, and Hallock (2005) show that more competition from for-profit hospitals leads to a higher importance of the profit motive (i.e., net financial income) among not-for-profit ones in terms of both the structure of managerial compensation and managerial turnover decisions (and this is understood by donors, who reduce their contribution as a result of this weakening of the not-for-profit mission).

Observers have also contrasted the ethical performances of for-profit entities in the pharmaceutical industry differing in their governance. For example, US generics drug maker Impax's sale in 2015 of its US rights to the Daraprim brand to privately held Turing Pharmaceuticals was blamed for the 56-fold increase in the price of this antiparasitic drug, hurting patients. Another spectacular example is Purdue Pharma, a privately held family firm that became hugely profitable through aggressive and deceptive marketing.[42] In conformity with propositions 3 and 5, the strategy of Purdue Pharma, the undisputed leader in the opioid crisis, had a strong contamination effect on other players in the industry.

Observers have more broadly expressed concerns about private equity (PE) groups' impressive indent into the US hospital sector.[43] In this

[42] Downplaying the addiction risk of its blockbuster OxyContin, tying half of the compensation of its representatives to the prescription behavior of "their" medical doctors, and offering OxyContin samples that would be free only for a limited time periods. These various practices were already discussed in a 2003 official report (see US General Accounting Office 2003).

[43] Ethical concerns were, e.g., relayed by Robeznieks (2022), who summarizes the conclusions of a recent American Medical Association (AMA) roundtable as follows: "PE funds can help spur innovations or provide stable funding for workers' pensions, but investor expectations for a quick return on investment may clash with a medical practice's long-term

respect, the study on the nursing home sector by Gupta et al. (2021) concludes, "PE ownership increases the short-term mortality of Medicare patients by 10%, implying 20,150 lives lost due to PE ownership over our twelve-year sample period. This is accompanied by declines in other measures of patient well-being, such as lower mobility, while taxpayer spending per patient episode increases by 11%. We observe operational changes that help to explain these effects, including declines in nursing staff and compliance with standards. Finally, we document a systematic shift in operating costs post-acquisition toward non-patient care items such as monitoring fees, interest, and lease payments."

Our model indicates that the governance of suppliers matters. While it is difficult to observe the moral preferences of managers, our theory indicates that high-powered incentive schemes tend to reduce market morality, consistent with Gupta et al. (2021), and that the existence of for-profit suppliers may be ethically dominant in that not-for-profit suppliers may have to mimic for-profits' low-ethics choices if consumers are UPI and competition is intense, consistent with Arnould, Bertrand, and Hallock (2005). On a more positive note, the ethical urges of other stakeholders (responsible consumers, workers, and investors) will not be hampered under such circumstances and can be encouraged, for example, by the transparency of supplier ethical choices.

Overall, our model stresses that for markets where ethical worries are significant (because of externalities, internalities, or incomplete information) and hard to regulate away, there is value in mitigating the pursuit of profit, a concern of the by now large corporate social responsibility (CSR)/ESG literature. Our value added here is to say that policy instruments on this dimension—from transparency to board composition to the choice of legal form (like that of a benefit corporation, which protects managers in case they diverge from pure profit maximization to pursue predefined societal objectives)—should be the focus of attention rather than trying to weaken product market competition.

C. Experiments

Although not initially designed for this purpose, the evidence on the replacement effect can be related to our theoretical framework. Bartling, Weber, and Yao (2015) run experiments in settings similar to our case of ethical consumers/cost benefits from cutting ethical corners/flexible

sustainability and physicians' ethical demands." He adds that in this roundtable, the immediate past chair of the AMA Private Practice Physicians Section Governing Council noted that "this group, more than others, is not anti-profit given that section members often view themselves as—among other things—small business owners. But the problem is if the profit is a beginning and an end to itself, added an AMA member. It has no empathy, sympathy or engagement with the consumer . . . which is the patient."

prices. Sellers have two margins: they set both prices and a production technology, and they choose between a costly and clean good and a cheap and polluting one. Bartling, Weber, and Yao (2015) ask, will the cheapest polluting good be delivered in a competitive market, as the replacement effect would suggest? They find, to the contrary, that "increased competition does not diminish the degree of concern exhibited toward externality-bearing parties outside of the market" (Bartling, Weber, and Yao 2015, 222), consistent with proposition 1.

Falk, Neuber, and Szech (2020), in a one-margin environment, show that (the perception of) pivotality is key to sustaining moral behavior. Their baseline experiment has full pivotality, with a single subject deciding between killing a mouse (not saving a surplus mouse) and forgoing €10. In the treatment, each subject can choose between unconditionally forgoing €10 and giving the mouse a chance to survive, which will happen only if all seven other subjects also abandon €10 (which is unlikely). Many more choose to keep the €10 than in a dictator game. This experiment points at consequentialist preferences rather than deontological ones and at the potency of the replacement effect.[44] The Falk, Neuber, and Szech experiment is not set as a market but has the same features that (1) an unethical behavior boosts profit; (2) subjects have a single margin, their ethical choice, as in the fixed-price environment; (3) ethical behavior is less appealing to the supplier if others also behave unethically (strategic complementarity/proposition 4); and (4) the probability that one's morally correct action delivers the morally right outcome decreases with the number of decision makers.[45] Their result is thus reminiscent of the forces at play in our proposition 4.

[44] Bartling and Özdemir (2023) demonstrate that the replacement effect is less prevalent when there is a strong social norm.

[45] Let $a_i \in \{0, 1\}$ denote subject i's moral action and $a_{-i} \equiv X_{j \neq i} a_j$. If we let v denote the value of a mouse's life, subject i's payoff is the sum of a material payoff and social preferences: $(-10 + \alpha_i v a_{-i}) a_i$. Note that a_i and a_{-i} are complements in the nonmaterial payoff term. Note also that this expression shows that an increase in the number of subjects (which induces a reduction in a_{-i}) is similar to an increase in the subject's power of incentive scheme.

This impact of pivotality, which decreases with a higher number of competitors, on ethics is also discussed in the context of voting models. Feddersen, Gailmard, and Sandroni (2009) find that ethically expressive motives become more important relative to material self-interest in larger populations. In contrast, Kamenica and Egan Brad (2014) make a distinction between two nonmaterial self-interest forms of preferences: (1) the benefits of outcome-based ideology/social preferences (I care about my ideology being implemented, i.e., being voted for by a majority of voters) and (2) the expressive utility brought about by the match between my vote and my ideology (a form of warm-glow). While the former as well as material preferences matter only if the voter is pivotal, the latter does not. Kamenica and Egan Bard (2014) find that it is the former rather than the latter that matters, so that pivotality does not really affect the trade-off between self-interest and ethics in their experiment.

VI. Related Literature

Dufwenberg et al. (2011) and Sobel (2015), like us, assume nonstandard preferences and then derive conclusions regarding the nature of market outcomes. Both papers derive conditions under which other-regarding preferences (ORPs) make no behavioral difference relative to selfish preferences. In both papers, the absence of market power is key to the result. In Dufwenberg et al. (2011), which allows for only consumer and not producer ORPs, this is in the context of a Walrasian setting, while in Sobel perfect competition emerges as the limit of a standard double auction (with one good and money) with anonymous trading in large economies. Sobel also extends the analysis to the existence of market power and identifies conditions under which ORPs do not make a difference either.

At first glance, our results may seem to be drastically at odds with those in Dufwenberg et al. (2011) and Sobel (2015). With flexible prices, our firms adopt the same behavior regardless of the intensity of competition: in many circumstances, a monopolist behaves as morally as firms under intense competition; what is irrelevant for moral behavior in our model is the intensity of competition, not social preferences like in these two papers. The difference in conclusions naturally can be traced to the different assumptions.

Dufwenberg et al. (2011) and Sobel (2015) assume that one can affect others' utilities only through one's impact on others' quantities traded or the set of market price. Dufwenberg et al. (2011) study a standard multigood Walrasian setting. Indeed, next to a separability assumption (consumers' ordering over feasible consumptions is independent of other's choices, an assumption we also make), they assume that consumer i's preferences can be represented by a utility function $V_i(m_i(x_i), x_{-i}, B)$, where $m_i(x_i)$ is the material utility from consumption vector x_i, x_{-i} is the vector of consumptions by others, and B are the agents' budget sets. This framework allows for externalities as well as inequality aversion (Velez 2017), but they exclude some key consequentialist internalizations: in particular, they do not consider as an ORP the fact that an individual may want to change her consumption basket just because it is objectionable to others, even if this does not affect their ability to trade. Another difference with their framework is that decisions are interdependent in ours: a supplier's moral action conditions the support of its stakeholders and therefore affects the supplier indirectly as well as directly. Finally, the additional assumption on preferences that guarantees irrelevance of ORPs is that individuals prefer to make a desirable trade themselves rather than let another individual make exactly the same trade, an assumption that we also make but is not consequential in our framework.

Next to our general irrelevance result, we provide a precise identification of environments in which the intensity of competition makes

markets more or less moral. While in the limit supplier ethics may be crowded out fully (i.e., only the lowest α_i matters), stakeholders' ethical urges remain relevant even under these circumstances.

The paper also has a strong connection with the CSR literature.[46] A prominent view of CSR equates it with delegated philanthropy. The firm is a channel for the expression of citizen values; as in our model, consumers may be willing to pay a bit more for fair coffee,[47] investors may accept getting a smaller return from green funds, and workers may take a wage cut when employed by a nongovernmental organization. A profit-maximizing company then maximizes profit as it passes through the higher cost or the lower return to the stakeholders. This view is embraced in Bagnoli and Watts (2003), Kotchen (2006), Besley and Ghatak (2007), Barigozzi and Tedeschi (2015, 2019), Besley and Persson (2020), Landier and Lovo (2020), Moisson (2020), Aghion et al. (2023), Green and Roth (2023), Oehmke and Opp (2023), and Weber and Zhang (2023). Weber and Zhang (2023) find experimental support for our result that when consumers are willing to pay more when the supplier stands for their values, competition fosters ethical behavior; they show that the suppliers react by incurring costs to express support to the causes that are favored by the buyers. Aghion et al. (2023) show, theoretically and empirically, that competition pushes profit-maximizing suppliers toward greener innovation. The latter result does not contradict proposition 1, as it is based on an industrial organization mechanism (escaping competition effect) and not on the crowding out of supplier morality (in their model, only consumers have social preferences).

An alternative view of CSR is insider-initiated corporate philanthropy, namely, philanthropy that clashes with profit maximization.[48] This is the

[46] See, e.g., the taxonomy in Bénabou and Tirole (2010). The suppliers' role in shaping the morality of markets is in line with Henderson's (2020) view of managers as key engines for reimagining capitalism. That economic agents in general may behave altruistically has received support in experimental economics and is a common assumption in the theoretical literature on social responsibility (see, e.g., Hart and Zingales 2017; Besley and Ghatak 2018; Landier and Lovo 2020; Broccardo, Hart, and Zingales 2022; Green and Roth 2023; Oehmke and Opp 2023).

[47] Conversely, ethical consumers can boycott firms that behave unethically, in the tradition of Baron (2001) and subsequent papers of his and Egorov and Harstad (2017) in a dynamic context. Feddersen and Gilligan (2001) show that activist intermediaries—who are better informed than consumers about supplier behavior—can help coordinate such boycott strategies and thereby push supplier actions towards more ethical behavior.

[48] Even leaving aside the agency literature, there is of course a long tradition of analyses of nonprofit maximization goals: Beckerian discrimination theory, labor-managed firms, and so on. Becker (1957) made the point that (perfect) market competition weeds out those suppliers that have a preference for discrimination. There is a complementarity with our results, since he considers situations where suppliers enjoy an immoral behavior that raises the cost of business, namely, the wage bill. He also argues that purely profit-maximizing (and thus unprejudiced) suppliers will cater to the prejudices of consumers. This is consistent with the results derived from limit results of our model when $\alpha_i = 0$.

approach taken in Hart and Zingales (2017) and Broccardo, Hart, and Zingales (2022), where shareholders compare their monetary gains with the ethical impact of their actions. This trade-off has bite when they vote at the general assembly or board of directors, since both impacts are nonzero only if their vote is pivotal. By contrast, this leads them to focus solely on monetary gains when they buy shares (there is no socially responsible investment), since they rationally expect not to be pivotal and therefore affect the company's future actions only with a tiny probability, a leakage that is also present in Moisson (2020) and Green and Roth (2023). Broccardo, Hart, and Zingales (2022) extend the analysis in a model where they endogenize investor divestments and consumer boycotts (which they call exit mechanisms), where individual investors and consumers internalize their (nonzero) impact on firm behavior on aggregate social surplus. In their model, under social preference parameters consistent with experimental evidence, divestments and boycotts are insufficient, and shareholder engagement through voting (voice) is socially preferable.[49] This insider-initiated corporate philanthropy literature can be seen as an input to our model in that it focuses on how institutions shape suppliers' ethical urges, that is, their α_i's, where we then look at how equilibrium ethics results from the α_i's and the intensity of competition.

To sum up, our paper belongs to these two literatures, as we allow both the supplier and the stakeholders to have social preferences and allow ethical choices to maximize corporate profits or to reduce them. Its unique focus is on the impact of the intensity of competition on market morality and on the predictions of heterogeneity in preferences and corporate form for moral behavior.

Finally, we have a model with two strategic variables, p (or q) and a, and we look at the interplay between the two as a function of the intensity of competition. Some models in the literature similarly have effort or quality instead of a. The multitask incentive literature (e.g., Holmström and Milgrom 1991) stresses that high-powered incentives by a principal may compromise the agent's provision of noncontractable quality.[50] Relatedly, the paper connects to the literature on not-for-profit firms. This

[49] Oehmke and Opp (2023) also emphasize the benefits of voice exerted by socially responsible investors; in their paper, the latter relax the firm's borrowing constraint conditional on choosing a clean production process. A recent paper by Herweg and Schmidt (2022) makes the point that managers' ability to express their social responsibility depends on the institutions designed by the state. They compare cap-and-trade mechanisms and carbon taxes as alternatives for putting a price on carbon. Consequentialist managers behave solely in function of their material interests under a cap-and-trade as total pollution is fixed.

[50] Where quality here is viewed from the principal's standpoint. In Lazear (1989), two workers are engaged in a tournament. The relative performance determines individual pay raises, which is conducive to sabotaging. Itoh (1991) studies optimal incentives for team workers who have individual performance measures but help each other.

literature emphasizes that the absence of profit motive reduces the incentive to cut on unobservable quality (Hansmann 1980; Glaeser and Shleifer 2001; Bubb and Kaufman 2013; Besley and Malcomson 2018).[51] Our paper is complementary: it mostly assumes by contrast that the quality assessed by consumers is observable (directly or through word of mouth or reputation) but not necessarily socially desirable, and it looks at a different set of issues (e.g., the convergence of behavior of for-profit and not-for-profit firms as a function of the degree of competition).[52]

VII. Summing Up

Critics of market economies have long emphasized that the institutional context may frame our ethical choices. Does that mean that competition—understood as an increase in the number of competitors or in their substitutability or a decrease in search costs—may strengthen incentives to cut ethical corners in order to please the consumer or to cut costs? The paper develops theoretical foundations for this concern, providing its rationale, the reasons why moral choices are often strategic complements, and an exact identification of the environments in which intense competition affects ethical choices.

The paper embodies two main contributions. First, and importantly for the public debate and public policies, it offers a strong warning against a sweeping condemnation of the market based on the ground that it promotes immoral behavior. Indeed, our central irrelevance result robustly shows that the intensity of competition does not affect behavior as long as (1) suppliers and stakeholders are consequentialists; (2) prices are flexible, an assumption that describes well many markets; and (3) technology

[51] For instance, Besley and Malcomson (2018) posit that not-for-profits internalize the benefits of various dimensions of quality, although maybe in a paternalistic fashion. Their focus is on the ease of entry by a nonprofit facing a for-profit incumbent—and variations thereof—to match the observations on entry in the school and hospitals sectors. Bubb and Kaufman (2013) show how ownership of the firm by its customers as well as nonprofit status can prevent firms from using contractual terms that take advantage of consumer biases in consumer financial services.

[52] The IO literature on competition and incentives does stress the role of product market competition on firms' nonprice behavior. In that literature, a firm's manager picks an effort under profit-based compensation, in the same way our suppliers pick a moral action and not solely a price. The principal of the IO literature corresponds to the stakeholders in our model, who demand a higher moral action, but there is no counterpart in the IO literature to our UPI consumers, who play a key role in the replacement effect literature. Besides the rather distinct motivations, the mechanisms described in the literature whereby competition may enhance effort (or not) are different from those in our paper: e.g., the information or benchmarking route in Hart (1983) and the desire to avert bankruptcy in Schmidt (1997), which both positively link competition and effort, and the scale effect, the idea that effort is a fixed cost which is less valuable under lower market share, which does the opposite in Raith (2003).

is characterized by constant returns to scale (understood as the marginal cost of ethical choices being proportional to output). What determines equilibrium ethics in a market is then the set of ethical urges of the players, not the intensity of competition. Overall, the presumption should be that competition, unlike the values of the players, cannot be the overriding source of moral problems in trade; at the very least, it is ill-advised to blame the market for immoral behavior and to question the appropriateness of competition policy, antibottleneck regulation, competitive procurement, and competition though trade without specifying in detail the nature of competition.

The second contribution is to analyze environments where price flexibility does not apply, either because of regulation or because of corner solutions due to a zero-profit constraint linked with asymmetric competition or a not-for-profit status. When prices are fixed by regulation and consumers are UPI, critics of the market are vindicated: more competition among symmetric suppliers fosters immoral behavior. In contrast, an increase in competition fosters moral behavior under fixed prices and ethical consumers.

When suppliers differ in their ethics either intrinsically or because of their corporate mission (with some actors' prices being de facto—although not de jure—constrained, as they must equate revenue with cost), competition can also erode equilibrium ethics. Not-for-profits behave more ethically than for-profit suppliers, and among the latter, more ethical suppliers tend to behave more ethically than less ethical ones. But the key lesson is that intense competition in a UPI consumers market leads to a race to the for-profit-supplier ethical bottom (without, however, changing the impact of stakeholders' ethical urges on equilibrium ethics). This suggests, in particular, not mixing corporate forms within the same competitive markets if the goal is to encourage moral behavior.

We saw that the competitive pressure may leave morality unaffected, reduce it, or increase it. Does anything go, or is the theory testable? The answer is that it is testable, because it makes clear predictions within each situational context. Under consequentialism and flexible prices, we should expect little relation between ethics and the intensity of competition. Under regulated prices and ethics-contingent demand, consumer attitudes will instead be crucial. Take fair trade, for example: rich-world consumers enjoy no direct gain from poor farmers' getting a higher income. Their demand is entirely driven by social responsibility, and so the prediction is that competition will improve moral behavior by empowering morally conscious consumers. In contrast, in the bribing, performance-enhancing drug, unneeded prescription of opioids or sick days, or product misrepresentation examples, immoral behavior boosts demand. The context offers a clue as to the relevant prediction; this also provides guidance for experimental work on ethical behavior.

References

Aghion, Philippe, Roland Bénabou, Ralf Martin, and Alexandra Roulet. 2023. "Environmental Preferences and Technological Choices: Is Market Competition Clean or Dirty?" *A.E.R. Insights* 5 (1): 1–20.

Anderson, Elizabeth. 1993. *Value in Ethics and Economics*. Cambridge, MA: Harvard Univ. Press.

Arnould, Richard, Marianne Bertrand, and Kevin F. Hallock. 2005. "Does Managed Care Change the Mission of Nonprofit Hospitals? Evidence from the Managerial Labor Market." *Indus. and Labor Relations Rev.* 58:494–514.

Ashraf, Nava, Oriana Bandiera, Edward Davenport, and Scott Lee. 2020. "Losing Prosociality in the Quest for Talent? Sorting, Selection, and Productivity in the Delivery of Public Services." *A.E.R.* 110 (5): 1355–94.

Bagnoli, Marc, and Susan G. Watts. 2003. "Selling to Socially Responsible Consumers: Competition and the Private Provision of Public Goods." *J. Econ. Management and Strategy* 12 (3): 419–45.

Ballou, Jeffrey P., and Burton A. Weisbrod. 2003. "Managerial Rewards and the Behavior of For-Profit, Governmental, and Nonprofit Organizations: Evidence from the Hospital Industry." *J. Public Econ.* 87:1895–920.

Barigozzi, Francesca, and Nadia Burani. 2019. "Competition for Talent When Firms' Mission Matters." *Games and Econ. Behavior* 116:128–51.

Barigozzi, Francesca, and Piero Tedeschi. 2015. "Credit Markets with Ethical Banks and Motivated Borrowers." *Rev. Finance* 19 (3): 1223–79.

———. 2019. "On the Credibility of Ethical Banking." *J. Econ. Behavior and Org.* 166 (C): 381–402.

Baron, David P. 2001. "Private Politics, Corporate Social Responsibility, and Integrated Strategy." *J. Econ. and Management Strategy* 10 (1): 7–45.

Bartling, Björn, and Yagiz Özdemir. 2023. "The Limits to Moral Erosion in Markets: Social Norms and the Replacement Excuse." *Games and Econ. Behavior* 138:143–60.

Bartling, Björn, Roberto Weber, and Lan Yao. 2015. "Do Markets Erode Social Responsibility?" *Q.J.E.* 130 (1): 219–66.

Becker, Gary S. 1957. *The Economics of Discrimination*. Chicago: Univ. Chicago Press.

Bénabou, Roland, and Jean Tirole. 2006. "Incentives and Prosocial Behavior." *A.E.R.* 96 (5): 1652–78.

———. 2010. "Individual and Corporate Social Responsibility." *Economica* 77:1–19.

Besley, Timothy, and Maitreesh Ghatak. 2005. "Competition and Incentives with Motivated Agents." *A.E.R.* 95 (3): 616–36.

———. 2007. "Retailing Public Goods: The Economics of Corporate Social Responsibility." *J. Public Econ.* 91 (9): 1645–63.

———. 2018. "Prosocial Motivation and Incentives." *Annual Rev. Econ.* 10:411–38.

Besley, Timothy, and James M. Malcomson. 2018. "Competition in Public Service Provision: The Role of Not-for-Profit Providers." *J. Public Econ.* 162:158–72.

Besley, Timothy, and Torsten Persson. 2020. "Escaping the Climate Trap? Values, Technology and Politics." Working paper.

Brekke, Kjell Arne, and Karine Nyborg. 2008. "Attracting Responsible Employees: Green Production as Labor Market Screening." *Res. and Energy Econ.* 30 (4): 509–26.

Broccardo, Eleonora, Oliver Hart, and Luigi Zingales. 2022. "Exit versus Voice." *J.P.E.* 130 (12): 3101–45.

Bubb, Ryan, and Alex Kaufman. 2013. "Consumer Biases and Mutual Ownership." *J. Public Econ.* 105:39–57.

Dufwenberg, Martin, Paul Heidhues, Georg Kirchsteiger, Frank Riedel, and Joel Sobel. 2011. "Other-Regarding Preferences in General Equilibrium." *Rev. Econ. Studies* 78 (2): 613–39.

Dufwenberg, Martin, Olof Johansson-Stenman, Michael Kirchler, Florian Lindner, and Rene Schwaiger. 2022. "Mean Markets or Kind Commerce?" *J. Public Econ.* 209:104648.

Egorov, Georgy, and Bard Harstad. 2017. "Private Politics and Public Regulation." *Rev. Econ. Studies* 84 (4): 1652–82.

European Commission. 2023. *Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements.* Brussels: European Commission.

Falk, Armin, Thomas Neuber, and Nora Szech. 2020. "Diffusion of Being Pivotal and Immoral Outcomes." *Rev. Econ. Studies* 87 (5): 2205–29.

Feddersen, Timothy, Sean Gailmard, and Alvaro Sandroni. 2009. "Moral Bias in Large Elections: Theory and Experimental Evidence." *American Polit. Sci. Rev.* 103 (2): 175–92.

Feddersen, Timothy, and Thomas W. Gilligan. 2001. "Saints and Markets: Activists and the Supply of Credence Goods." *J. Econ. and Management Strategy* 10 (1): 149–71.

Gabaix, Xavier, and David Laibson. 2006. "Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets." *Q.J.E.* 121 (2): 505–40.

Glaeser, Edward L., and Andrei Shleifer. 2001. "Not-for-Profit Entrepreneurs." *J. Public Econ.* 81 (1): 99–115.

Green, Daniel, and Benjamin N. Roth. 2023. "The Allocation of Socially Responsible Capital." Working paper, Harvard Bus. School.

Gupta, Atul, Sabrina T. Howell, Constantine Yannelis, and Abhinav Gupta. 2021. "Does Private Equity Investment in Healthcare Benefit Patients? Evidence from Nursing Homes." Working Paper no. 2021-20, Becker Friedman Inst. Econ., Chicago.

Hansmann, Henry. 1980. "The Role of Nonprofit Enterprise." *Yale Law J.* 89 (5): 835–901.

———. 1996. *The Ownership of Enterprise.* Cambridge, MA: Belknap.

Hart, Oliver. 1983. "The Market Mechanism as an Incentive Scheme." *Bell J. Econ.* 14 (2): 366–82.

Hart, Oliver, and Luigi Zingales. 2017. "Companies Should Maximize Shareholder Welfare Not Market Value." *J. Law, Finance, and Accounting* 2 (2): 247–75.

Henderson, Rebecca. 2020. *Reimagining Capitalism in a World on Fire.* New York: Public Affairs.

Herweg, Fabian, and Klaus M. Schmidt. 2022. "How to Regulate Carbon Emissions with Climate-Conscious Consumers." *Econ. J.* 132 (648): 2992–3019.

Hirschman, Albert O. 1977. *The Passions and the Interests: Political Arguments for Capitalism before Its Triumph.* Princeton, NJ: Princeton Univ. Press.

Holmström, Bengt, and Paul Milgrom. 1991. "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design." *J. Law, Econ., and Org.* 7:24–52.

Itoh, Hideshi. 1991. "Incentives to Help in Multi-Agent Situations." *Econometrica* 59 (3): 611–36.

Kahneman, Daniel, and Jack Knetsch. 1992. "Valuing Public Goods: The Purchase of Moral Satisfaction." *J. Environmental Econ. and Management* 22 (1): 57–70.

Kamenica, Emir, and Louisa Egan Brad. 2014. "Voters, Dictators, and Peons: Expressive Voting and Pivotality." *Public Choice* 159 (1/2): 159–76.
Kosfeld, Michael, and Ferdinand A. von Siemens. 2011. "Competition, Cooperation and Corporate Culture." *RAND J. Econ.* 42 (1): 23–43.
Kotchen, Matthew J. 2006. "Green Markets and Private Provision of Public Goods." *J.P.E.* 114 (4): 816–34.
Landier, Augustin, and Stefano Lovo. 2020. "ESG Investing: How to Optimize Impact?" Working paper.
Lazear, Edward P. 1989. "Pay Equality and Industrial Politics." *J.P.E.* 97 (3): 561–80.
Lazear, Edward P., Ulrike Malmendier, and Roberto A. Weber. 2012. "Sorting in Experiments with Application to Social Preferences." *American Econ. J. Appl. Econ.* 4 (1): 136–63.
McCloskey, Deirdre N. 2006. *The Bourgeois Virtues: Ethics for an Age of Commerce*. Chicago: Univ. Chicago Press.
Moisson, Paul-Henri. 2020. "Ethics and Impact Investment." Working paper.
Mokyr, Joel. 2016. *A Culture of Growth: The Origins of the Modern Economy*. Princeton, NJ: Princeton Univ. Press.
Oehmke, Martin, and Marcus Opp. 2023. "A Theory of Socially Responsible Investment." *Rev. Econ. Studies*, rdae048.
Prendergast, Canice. 2007. "The Motivation and Bias of Bureaucrats." *A.E.R.* 97 (1): 180–96.
Raith, Michael. 2003. "Competition, Risk, and Managerial Incentives." *A.E.R.* 93 (4): 1425–36.
Robeznieks, Andis. 2022. "Physicians Warned of the Pitfalls behind Private Equity Promises." American Medical Assoc., Chicago. https://www.ama-assn.org/practice-management/private-practices/physicians-warned-pitfalls-behind-private-equity-promises.
Sandel, Michael J. 2012. *What Money Can't Buy: The Moral Limits of Markets*. New York: Macmillan.
Satz, Debra. 2010. *Why Some Things Should Not Be for Sale: The Moral Limits of Markets*. Oxford: Oxford Univ. Press.
Schmidt, Klaus M. 1997. "Managerial Incentives and Product Market Competition." *Rev. Econ. Studies* 64 (2): 191–213.
Singer, Peter. 2015. *The Most Good You Can Do*. New Haven, CT: Yale Univ. Press.
Sobel, Joel. 2015. "Do Markets Make People Selfish?" Working paper.
US General Accounting Office. 2003. "OxyContin Abuse and Diversion and Efforts to Address the Problem." Washington, DC: US General Accounting Office.
Velez, Rodrigo A. 2017. "Inequity-Averse Preferences in General Equilibrium." *J. Math. Econ.* 70:166–75.
Walzer, Michael. 2008. *The Free Market and Morality*. https://www.youtube.com.
Weber, Roberto, and Sili Zhang. 2023. "What Money Can Buy: How Market Exchange Promotes Values." Working paper.
Weisbrod, Burton. 1988. *The Nonprofit Economy*. Cambridge, MA: Harvard Univ. Press.