How Law Shapes Class Power Under Perfect Competition

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Abstract: This Article makes a set of contributions to legal institutionalism, a progressive scholarly approach instigated by American legal realists and economic institutionalists and further developed by contemporary movements like Law and Society, Critical Legal Studies, and Law and Political Economy. Legal institutionalists have long argued that legal rules like those of property, tort, and contract are key determinants of the distribution of income and bargaining power.

Yet, for all their rich output spanning a century, legal institutionalists have yet to explain exactly how law can shape bargaining power under competitive conditions. Conservative scholars have in the meanwhile built entire literatures arguing precisely that perfect competition eliminates any role for bargaining by making everyone "price-takers." In this influential view, legal rules can for the most part only redistribute income by cartelizing markets – as in labor laws fostering unionization – in a way that is inefficient *because* it deviates from the bargaining-free, perfectly competitive allocation of resources.

This Article provides a new model of the way in which legal rules can shape distribution even in a perfectly competitive market as commonly defined by economists, honing in on labor markets and the labor/capital relationship. It introduces a distinction between two kinds of legal rules – compulsory terms and pressure rules – that influence income distribution in different ways. The key novelty in the graphical analysis developed here is that of adding a bargaining move among the warring coalitions of the canonical "limit theorem" model of perfect competition. This addition to the limit theorem creates multiple possible perfectly competitive equilibria: one for each different set of legal rules that set the bargaining power of the social classes in the market.

While the contributions of this Article are in the realm of stylized legal and economic theory, they also do have many policy implications. It is well known that monopolies, including labor unions, can sometimes reach the outcome that *would* have obtained in a perfectly competitive setting. Showing that there are many possible perfectly competitive outcomes under different legal rules therefore reinforces the view that labor unions – and other similar forms of collective economic power – are best seen not as *distortions* but as vehicles for the regulatory reconfiguration of markets. This insight can surely strengthen the case for redistributive interventions to favor dispossessed social groups like low-wage workers.

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Introduction

The impact of laws and legal institutions on the distribution of income has long been a central theme in progressive scholarship. This has been true at least since Karl Marx, a lawyer by training and self-taught economist, made his famous argument that the plight of workers was due to the legal-institutional structure of the "relations of commodity production"[1] under capitalism and not to any physical or natural characteristic of labor and capital.[2]

In reaction to this charge, protagonists of the marginalist revolution in economics devoted much energy to showing that competitive markets can generate an income level that corresponds to the "part of the product of industry which is traceable to the [factor] itself" and that "assigns to every one what he has specifically produced."[3] In the formulation that eventually emerged as the core of contemporary welfare economics, competition gives to workers a wage equal to the value to employers of the last unit of labor bought. The notion that competition makes wages equal to the value of labor's product would seem to make it harder to claim that the resulting income distribution is unfair. It also seems to leave no room for bargaining or exploitation in the workings of a market economy.

The next important salvo after Marxism and early marginalism came from institutional economists and legal realists, who argued that legal rules and institutions shape distributive outcomes by protecting not property rights in the abstract but specific property *interests* over other, equally legally legitimate ones.[4] According to one memorable statement by Robert Hale, "[t]he market value […] of a service is merely a measure of the strength of the bargaining power of the person […] under the particular legal rights with which the law endows him, and the legal restrictions which it places on others."[5] John

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[1] KARL MARX, CAPITAL: A CRITIQUE OF POLITICAL ECONOMY Vol I, at 167 (1976, trans. Ben Fowkes) (1867). This juristic interpretation of Marx's thought owes much to Catherine Colliot-Thelene, *Afterword*, in ISAAK I. RUBIN, A HISTORY OF ECONOMIC THOUGHT (D. Filtzer, trans. 1979) 385, 428; Duncan Kennedy, *The Role of Law in Economic Thought: Essays on the Fetishism of Commodities*, 34 AMER. UNIV. L. REV. 939, 977-79 (1985); ALVIN W. GOULDNER, THE TWO MARXISMS 224-25 (1980).

[2] MARX, CAPITAL vol I, *id.* at 167.

[3] JOHN BATES CLARK, THE DISTRIBUTION OF WEALTH, at v (1899). On J.B. Clark's positioning vis-à-vis classical economists, see John F. Henry, *John Bates Clark and the Marginal Product: An Historical Inquiry into the Origins of Value-Free Economic Theory*, 15:3 HIST. POL. ECON. 375, 383-88 (1983).

[4] This is the idea of property – and freedom of contract – as "bundles of rights," in other words not rights with a single correct definition but groupings of vulnerabilities and privileges that can be arranged in many different ways. In this approach given canonical form by Wesley Hohfeld, the corollary of any freedom or right is the curtailment of some other freedom or right. For example, the security of employers' property and contractual rights is in zero-sum tension with workers' associational freedoms, just as the security of workers' property interests in their jobs is in zero-sum tension with employers' business freedoms, including the freedom to fire workers. The choice as to *which* harms are to be permitted is a question of "policy" – it cannot be made based on logical derivation from a general concept of right or freedom (for example, an employer's property right or freedom of contract). See Wesley N. Hohfeld, *Some Fundamental Legal Conceptions as Applied to Judicial Reasoning*, 23 YALE L.J. 16, 36–37 (1913); Walter Wheeler Cook, *Privileges of Labor Unions in the Struggle for Life*, 27 YALE L.J. 779, 790 (1917); KERRY RITTICH, RECHARACTERIZING RESTRUCTURING: LAW, DISTRIBUTION AND GENDER IN MARKET REFORM 150 (2002); Duncan Kennedy & Frank Michelman, *Are Property and Contract Efficient?*, 8 HOFSTRA L. REV. 711, 754–55 (1980); Margaret Jane Radin, *The Consequences of Conceptualism*, 41 U. MIAMI L. REV. 239, 240–41 (1986).

[5] Robert Hale, *Bargaining, Duress, and Economic Liberty*, 43 COLUM. L. REV. 603, 625 (1943). In a striking phrase that nicely complements the one quoted in the text accompanying this note, Hale states that "[t]he distribution of income depends on the relative power of coercion which the different members of the community can exert against one

Commons also produced a lastingly influential account of the "legal foundations of capitalism" as necessarily entailing the "collective control of transactions through associations and governments."[6]

The analyses were the inspiration for generations of scholars who argued that law makes market exchange amenable to many distributively different outcomes. I call this tradition of thought "legal institutionalism,"[7] a term which I use very broadly to refer to work that draws on both economic institutionalism and legal realism of the kind developed by Hale and Commons.[8] This line of analysis argues that "markets are based on and constituted by a structure of legal rules,"[9] and that "[t]he particular legal structure operating in the market at least partly determines a range of factors from the value of assets to the relative bargaining power of various actors."[10]

For all their varied contributions spanning a century, legal institutionalists have yet to explain exactly how legal rights can shape bargaining power under competitive conditions.[11] Perhaps this lacuna can be explained in part by a contemporary onslaught from mostly conservative scholars arguing that perfect competition deprives legal rules of any influence over income distribution. For instance, many scholars writing about the Coase Theorem[12] have argued that competition nullifies any gain created

another" and that "[i]ncome is the price paid for not using one's coercive weapons." Robert Hale, *Coercion and Distribution in a Supposedly Non-Coercive State*, 38 POL. SCI. Q. 470, 478 (1923).

6 JOHN COMMONS, LEGAL FOUNDATIONS OF CAPITALISM 6 (1924).

7 Simon Deakin, David Gindis, Geoffrey Hodgson, Huang Kainan & Katharina Pistor, *Legal Institutionalism: Capitalism and the Constitutive Role of Law*, 45 J. COMPAR. ECON. 188 (2017).

8 For two contemporary pieces of economic scholarship drawing respectively on Commons and Hale, see Bruce Kaufman, *Labor Law and Employment Regulation: Neoclassical and Institutional Perspectives*, *in* LABOR AND EMPLOYMENT LAW AND ECONOMICS 3, 44–45 (Kenneth G Dau-Schmidt, Seth D Harris & Orly Lobel eds., 2009); BARBARA FRIED, THE PROGRESSIVE ASSAULT ON LAISSEZ FAIRE: ROBERT HALE AND THE FIRST LAW AND ECONOMICS MOVEMENT 116–159 (1998). For contemporary legal institutionalist scholarship on labor markets, see SIMON DEAKIN & FRANK WILKINSON, THE LAW OF THE LABOUR MARKET: INDUSTRIALIZATION, EMPLOYMENT AND LEGAL EVOLUTION 275 (2005); Sanjukta Paul, *Charting the Reform Path*, 120 MICH. L. REV. 1265, 1271 (2022).

9 Karl Klare, *Workplace Democracy & Market Reconstruction: An Agenda for Legal Reform*, 38 CATH. U. L. REV. 1, 17 (1988).

10 RITTICH, *supra* note 4 at 134.

11 One important flaw is that institutionalists have tended to focus their accounts of the distributive impact of law on the mere fact of protecting property rights. *See, e.g.*, JOHN COMMONS, THE DISTRIBUTION OF WEALTH 111 (1965) (1893); Thorstein Veblen, *On The Nature of Capital: Investment, Intangible Assets, and Pecuniary Magnate*, 23 Q. J. ECON. 104, 108 (1908). Robert Hale sometimes also reduces the coercive impact of legal rules to "property rights" enabling for instance a seller to "threaten not to sell [and] coerce the customer into paying him money," to which Hale adds that it is doubtful that "the customer, however much he needs the goods, can be compelled to pay appreciably more than some competitor charges." ROBERT HALE, FREEDOM THROUGH LAW: PUBLIC CONTROL OF PRIVATE GOVERNING POWER viii-ix (1952). This point is of course fully reconcilable with the conventional economics of perfectly competitive equilibrium, where initial endowments change the Pareto-efficient allocation of resources that will obtain. *See* Part II.B, below. That said, Hale is the institutionalist economist who has produced some of the most interesting analyses of the way in which *different configurations* of legal rules affect income distribution. See the following publications where Hale argues that there needs to be and already are many instances where (1) positive duties to act are imposed under "freedom of contract" legal rules and (2) threats to perform acts that are otherwise themselves lawful are found to constitute duress. Hale, *Coercion and Distribution*, *supra* note 5, at 476; Hale, *Bargaining, Duress*, *supra* note 5, at 608; Robert Hale, *Prima Facie Torts, Combination, and Non-Feasance*, 46 COLUM. L. REV. 196, 212 (1946); HALE, FREEDOM THROUGH LAW, *id.* at 92. Nevertheless, Hale ultimately does not clearly articulate how the coercive bargaining power created by these legal rules can exist within competitive markets.

12 The Coase Theorem famously states that, if transaction costs are low enough, the allocation of resources, and perhaps also the distribution of income, is unaffected by the changing of legal rules that set permissions to harm. *See* Ronald H. Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1, 7 (1960).

by shifting legal rules to favor one group,[13] with some of these analyses pertaining specifically to employment laws like those giving workers a right to a safe workplace and to job security.[14] There is also of course the aforementioned canonical model of perfect competition as eliminating any scope for "bargaining," on the basis of legal rules or otherwise, by making everyone "price-takers."[15]

In this mostly conservative perspective, it is usually accepted that, while competition prevents legal rules from altering income distribution, legal rules in monopolized – i.e. non-competitive – markets *can* redistribute income, albeit in a socially undesirable way. A monopoly or cartel (for example a labor union) can redistribute wealth but does so by contracting output and employment in a way that is inefficient and harms some of the intended beneficiaries, i.e. workers.[16] Richard Epstein's critique of Robert Hale, for example, takes up both sides of this conservative argument; Epstein charges Hale with not considering the "possibility that competitive markets constrain the degree of coercion by allowing for new entry"[17] and with not assessing the efficiency effects of the labor unions Hale wanted to empower to redistribute income.[18]

The fact that legal institutionalists have been met with these conservative objections may be one reason why they have not clearly described how legal rules create bargaining power under competitive conditions.[19] Another possible explanation has to do with the legal institutionalist left's own aesthetic and intellectual commitments. The conventional model of perfect competition – and of imperfect competition or monopoly, for that matter – is *static*. That is, it holds constant variables such as technology, tastes, and aggregate demand to map prices and quantities actors would want to gravitate towards over the relevant period taken as a whole. Moreover, the analysis assumes a certain form of actor rationality and excludes market failures like public goods, asset specificity, and imperfect information.

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[13] Harold Demsetz, *When Does the Rule of Liability Matter?*, 1 J. LEGAL STUD. 13, 24 (1972); Robert Cooter *The Cost of Coase,* 11 J. LEGAL STUD. 1, 16 (1982); George J. Stigler, *Two Notes on the Coase Theorem*, 99 YALE LJ. 631, 632 (1989); Stewart J. Schwab, *Collective Bargaining and the Coase Theorem*, 72 CORNELL L. REV. 245, 263-65 (1987).

[14] See Schwab, *id.* at 263-265; Harold Demsetz, *Wealth Distribution and the Ownership of Rights*, 1 J. LEGAL STUD. 223, 225 (1972).

[15] See *infra* part II.

[16] Albert Rees, *The Effects of Unions on Resource Allocation*, 6 J.L. & ECON. 69, 70 (1963); Richard Epstein, *A Common Law for Labor Relations: A Critique of the New Deal Labor Legislation*, 92 YALE L.J. 1357, 1362 (1983); Barry Hirsch, *Firm Investment Behavior and Collective Bargaining Strategy*, 31 INDUS. RELS. 95, 95 (1992); Milton Friedman, *Some Comments on the Significance of Labor Unions for Economic Policy*, *in* THE IMPACT OF THE UNION 204, 215–16 (David McCord Wright ed., 1951); John A. Litwinski, *Regulation of Labor Market Monopsony*, 22 BERKELEY J. EMP. & LAB. L. 49, 84–86 (2001); Henry C. Simons, *Some Reflections on Syndicalism*, 52 J. POL. ECON. 1, 15 (1944).

[17] Richard A. Epstein, *The Assault that Failed: The Progressive Critique of Laissez Faire*, 97 MICH. L. REV. 1697, 1703 (1999) (reviewing BARBARA H. FRIED, THE PROGRESSIVE ASSAULT ON LAISSEZ FAIRE: ROBERT HALE AND THE FIRST LAW AND ECONOMICS MOVEMENT (1998)).

[18] *Id.*

[19] Elsewhere, I have provided a fuller review and commentary of legal institutionalist analyses that describe the distribution of coercive bargaining power by legal rules but do not fully contest or engage with the orthodox economics of competition and its polar opposite, monopoly. Pascal McDougall, *The Institutionalist Law and Economics of Labor Union Renewal*, 44:1 BERKELEY J. EMP. & LAB. L. 55 (2023).

By contrast, institutionalist and other heterodox legal economists have long tended to advocate the complete replacement of static analysis with the study of change and dynamics,[20] to emphasize market failures,[21] to document deviations from rationality,[22] and more generally to try to find logical flaws that thoroughly invalidate static microeconomics.[23] Whatever the merits of these criticisms, it seems to me that their frequent framing as fatal objections rather than constructive qualifiers to static economics has contributed to institutionalists' lack of engagement with the details of the conventional analysis of perfect competition.[24]

This Article proposes a new modelization of the way in which legal rules can shape distribution even in a perfectly competitive market as commonly defined by economists, honing in on labor markets and the labor/capital relationship. It introduces a distinction between two kinds of legal rules, compulsory terms and pressure rules, that affect income distribution in different ways. Pressure rules

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[20] *See* Walton Hamilton, *The Institutional Approach to Economic Theory*, 9 AM. ECON. REV. 309, 314–15 (1919); Thorstein Veblen, *Why Is Economics Not an Evolutionary Science?*, 12 Q. J. ECON. 373, 393 (1898).

[21] Devin Penner, *Monopoly and Crisis in the Era of the "Giant Corporation": Neo-Marxist versus Radical Institutionalist Approaches*, 75 SCI. & SOC'Y 180, 183–86 (2011); COMMONS, LEGAL FOUNDATIONS OF CAPITALISM, *supra* note 6, at 363–64; RICHARD FREEMAN & JAMES MEDOFF, WHAT DO UNIONS DO? 14 (1984); Katherine Stone, *Green Shoots in the Labor Market: A Cornucopia of Social Experiments*, 36 COMPAR. LAB. L. & POL'Y J. 293, 318–19 (2015). One strand of legal institutionalist scholarship has long focused on the existence of corporations and firms as creating bargaining power. See Oliver Wendell Holmes, Jr., *Privilege, Malice, and Intent*, 8 HARV. L. REV. 1, 8 (1894); Hale, *Bargaining, Duress, supra* note 5, at 608; Hale, *Prima Facie Torts*, *supra* note 11, at 210. Sanjukta Paul has recently produced a masterful development of this analysis. Paul frames her argument as a contestation of antitrust's "firm exemption," which entails the granting of a "very specific exception to the competitive order" by allowing the "hierarchically organized business firm" to set prices and coordinate production internally while "horizontal coordination beyond firm boundaries, democratic public market coordination, and labor coordination" are more often illegal. Sanjukta Paul, *Antitrust as Allocator of Coordination Rights*, 67 UCLA L. REV. 378, 414 (2020). Because Holmes, Hale, and Paul do not clearly differentiate the impact of production unit size on bargaining power from the impact of legal rules that would shape the bargaining power of even many small employers, their analysis is difficult to distinguish from labor market monopsony – a market failure. These analyses therefore strike me as being of little use for the specific purpose of developing the legal institutionalist theory of competition and contesting the notion that competition eliminates any role for bargaining.

[22] Erkki Kilpinen, *What Is Rationality? A New Reading of Veblen's Critique of Utilitarian Hedonism*, 13:2 INT'L J. POL., CULTURE & SOC'Y 187 (1999); Mark Kelman, *Choice and Utility*, 1979 WIS. L. REV. 769, 789-93 (1979); Luke Herrine, *What is Consumer Protection For?,* LOY. CONSUMER L. REV. (forthcoming, 2023).

[23] Bruce Kaufman, *The Non-Existence of the Labor Demand/Supply Diagram, and Other Theorems of Institutional Economics*, 29 J. LAB. RSCH. 285, 293 (2008); Christine Desan, *The Key to Value: The Debate over Commensurability in Neoclassical and Credit Approaches to Money*, 83 LAW AND CONTEMPORARY PROBLEMS 1 (2020); FREDERIC S. LEE, POST KEYNESIAN PRICE THEORY 227–31 (1998).

[24] A statement like this would call for many qualifications that could add dozens of pages to this Article. To give just one example, Warren Samuels, in an interpretive essay on Hale, does provide an interesting account of legal coercive power within competition. Samuels ascribes to Hale the view that "[c]ompetition […] has to do with market structure and demand and supply and not […] with the power structure within which the market, even when competitive, operates." Warren J. Samuels, *The Economy as a System of Power and its Legal Bases: The Legal Economics of Robert Lee Hale*, 27 U. MIAMI L. REV. 261, 317 (1973). Samuels adds that "power, in Hale's view, exists not only in noncompetitive markets, but also governs the relative participation of buyers and sellers in all markets." *Id.* Even under competition, "[t]hose with 'contractual and property rights of great magnitude' are able to work through the market, even unconcertedly, to more readily effectuate the conditions which they prefer to impose upon others." *Id.* at 317-18. The precise ways in which different property and contract rights operate "through" a competitive market are not explained in detail. I know of no writing by Hale – and Samuels does not specifically cite any – in which he developed these insights in ways that differ from the analytical moves mentioned *supra* note 11. For cites to other useful although incomplete legal institutionalist engagement with the theory of competition, see *infra* note 26.

– rules that determine what bargaining tactics parties can use in concluding employment contracts – are at the heart of the revised model of perfect competition I develop.

The key novelty here is that I add a bargaining move in the interaction among the warring coalitions that force undercutting down to the perfectly competitive outcome in the canonical "limit theorem."[25] In my model, perfect competition – the adding of an infinite number of competitors on both sides of the market – does narrow down the number of possible labor market outcomes to one. But the outcome that turns out to be the perfectly competitive one is different depending on how the legal rules that shape bargaining power are structured. There are many possible perfectly competitive outcomes; one for each set of legal rules.[26]

The contribution of this Article, as I have just articulated it and as I will develop it below, is *very* theoretical in the sense that it is situated in a setting we cannot expect to encounter in the real world. Like much stylized economic and indeed legal theory, my analysis can yield insights that are only truly apparent in an environment that is simplified for expository purposes. But there is a more direct link between my model of perfect competition and the imperfectly competitive real world: the perfectly competitive outcome is one we can expect a monopoly or cartel to sometimes gravitate towards. A labor union, for example, may well want to raise wages while obtaining the highest level of employment – i.e. the highest labor quantity – employers can afford given consumer wants and production technology; that labor quantity may well be the one that would obtain under perfect competition. This simple notion has long been recognized as being true of monopolies in general;[27] it has also inspired a body of work on "price-quantity collective bargaining" whereby labor unions bargain on both wages and labor quantity and avoid the conventional inefficient output-reducing outcome.[28]

Therefore, after having developed a model of perfect competition whereby a great number of workers and employers bargain with one another on the basis of legal rules and pressure tactics, I connect that

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[25] See *infra* Part II.

[26] This point develops the legal institutionalist notion that "[p]rices are in part a function of the structure of rights, and all profit-making proceeds in terms of particular regulatory backgrounds, to the result that profit-making is indistinguishable from rent." RITTICH, *supra* note 4, at 150. As will become clearer below, my analysis has parties appropriating *inframarginal* rents at different perfectly competitive equilibria. The following passage by Duncan Kennedy is probably the existing piece of writing that is closest to my argument:

> [F]or any given specification of tastes, natural resources, and factor endowments in a perfectly competitive economy, there will be not one but many possible outcomes -- indeed one outcome for each possible legal regime that meets the formal criteria of commodification and free exchange. These will differ both as to the allocation of resources (the product mix) and as to the distribution of income.
>
> The reason for this is that the bundle of legal rights that goes along with an abstract "factor endowment" has a powerful impact on how much that endowment is worth in the competitive struggle. Different legal regimes will generate "wealth effects" on the allocation of resources because legal rules are a constitutive dimension of the wealth that factor endowments define.

Kennedy, *The Role of Law, supra* note 1, at 961.

[27] Roger D. Blair, David L. Kaserman & Richard E. Romano, *A Pedagogical Treatment of Bilateral Monopoly*, 55 S. ECON. J. 831 (1989).

[28] See *infra* Part IV.

model to price-quantity collective bargaining. Though one setting involves perfect competition and the other a monopoly, both have workers bargaining along a "contract curve" that is distinct from the labor demand curve. The graphical parallels between the two settings evidence that the model of perfect competition developed here is not a mere theoretical nicety but has implications for the theory and practice of income redistribution. The model lends support to the notion that state regulation through vehicles like labor unions can amount not to a distortion but to a mere reconfiguration of markets, with no necessary adverse economic effects.

The Article proceeds as follows. Part I introduces the distinction between compulsory terms and pressure rules, emphasizing their different distributive effects. It briefly summarizes the established (and sound) economic analysis of compulsory terms and then describes pressure rules, the economic analysis of which has yet to be worked out in a competitive setting. Part II presents the "limit theorem" – the conventional analysis of perfect competition – and the "second welfare theorem," whereby markets can reach different competitive outcomes when endowments or income is redistributed. Part III then amends the conventional analysis to make room for bargaining power created by pressure rules *within* perfect competition. Next, Part IV is devoted to making parallels between the impact of pressure rules under competition and price-quantity collective bargaining, whereby labor unions obtain wage gains without necessarily reducing output or employment. The conclusion then provides some further theoretical grounding for this Article's careful and selective embrace of "neoclassical" analytics usually rejected by institutionalist and/or heterodox legal economists.

I. The Distinction Between Compulsory Terms and Pressure Rules

In this Part, I contrast compulsory terms (I.A) and pressure rules (I.B). This distinction is prefigured in some legal institutionalist work, albeit with no extensive analysis of the different economic impact of the two kinds of rules.[29] I will argue that pressure rules are the important ones for my purpose of establishing the existence of multiple equilibria even in competitive markets.

A. A Few Examples of Compulsory Terms

With the expression "compulsory terms," I mean to refer to contractual conditions imposed by law. I start my presentation with two examples, to be complemented by a fuller list below. The rules of the Occupational Safety and Health Act[30] are one example of a series of compulsory terms. Job security, e.g. in the form of a just cause requirement for termination or the right to a paid notice period before termination, is my other example.[31]

The specific rules adopted under these two broad umbrellas force the parties to conclude employment contracts on terms that are by hypothesis different than what would obtain without the legal compulsion. The terms that are changed do not have to do with labor price or quantity, however. Moreover, each rule usually has a cost to the employer and some value in the eyes of the workers. For instance, a safer workplace is more costly to put in place and is appreciated by the workers who avoid accidents, and job security deprives the employer of some flexibility but spares the workers the risk of

[29] See e.g. Klare, *Workplace Democracy*, *supra* note 9, at 28 (distinguishing rules that "structure bargaining behavior" and rules that "operate directly on bargaining content").
[30] Occupational Safety and Health Act of 1970, 29 USC § 651-78.
[31] *See infra* notes 48-52 and accompanying text.

being fired easily and quickly. These costs and benefits of a contractual term made mandatory, combined with the crucial fact that the relevant legal rules themselves entail no restriction or bargaining on the price or quantity of labor, are the defining characteristics of compulsory terms for my purposes here.

I now present a summary of the basic economic analysis of compulsory terms.[32] This economic analysis, which I rehearse in detail elsewhere,[33] models the way in which compulsory terms affect income redistribution. When we impose, say, more job security, the entire labor supply and demand curves are envisioned to move by the amount of the costs and benefits to each side. If the term favors workers, as it does in the examples of more job security and occupational health and safety, the employers' labor demand curve will contract (move to the left) by the amount of the cost the term imposes on the employer per unit of labor. This represents decreased willingness to hire workers for any given wage. The workers' labor supply curve, conversely, expands (moves to the right) by the amount of the value placed on the term for each unit of labor. This represents increased willingness to work for any given wage. The distributive effect of compulsory terms is a function of the combined movements of the supply and demand curves.

If workers value job security more than it costs employers, the wage drop will be larger than the costs incurred by the employers but smaller than the value placed on job security by the workers.[34] Workers are therefore getting a term for less than they would be willing to "pay" for it. Employers also gain from the imposition of the term as wages drop by more than the cost increase. If all parties gain from this term, its absence from the relevant employment contracts (and the need to make it compulsory through a legal rule) is a puzzle that can be explained by the presence of significant transaction costs, imperfect information, or coordination problems that prevent parties from autonomously bargaining for the inclusion of the relevant term.

Let us now look at a term that is valued by the workers less than its costs employers. We can for instance imagine that workers really do not care much for job security because many other similar jobs are available to them. Or, it could be that workers are too poor to be willing to "pay" for job security in the form of lower wages. Whatever the reason, a contractual term valued at less than its cost reduces employment, as production costs rise by more than the wage drops. The workers who keep their jobs are also made worse off, as they incur a wage reduction that is higher than the value they place on the term. The conclusion to be drawn from this economic analysis is that, in general, a compulsory term will benefit workers only if they value it at more than it costs employers.[35]

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[32] The following treatment draws heavily on Christine Jolls, *Accommodation Mandates*, 53 STAN. L. REV. 223, 236 (2000); Lawrence H. Summers, *Some Simple Economics of Mandated Benefits*, 79:2 AM. ECON. REV. 177, 180 (1989); Richard Craswell, *Passing on the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships*, 43 STAN. L. REV. 361, 370-71 (1991); Duncan Kennedy, *Distributive and Paternalist Motives in Contract and Tort Law, with Special Reference to Compulsory Terms and Unequal Bargaining Power*, 41 MARYLAND L. REV. 563, 655-57 (1982).

[33] See Pascal McDougall, *Worker Power and Antimonopoly Revisited*, unpublished draft (2023).

[34] See the sources cited *supra* note 32.

[35] Many refinements have been made to this simple model. For instance, it has been shown that if, contrary to what my in-text discussion assumes, different workers – who in turn provide different units of labor – place a different value on the term, it no longer follows that workers are all made worse (better) off by a term that is valued at less (more) than it costs. If the inframarginal workers value the term more than the marginal ones, a term valued by most workers at less than its cost will still enrich many workers, although with some job losses. Conversely, if the

Compulsory terms operate very differently on the allocation of resources and the distribution of income than what I call pressure rules. In particular, compulsory terms only channels income to workers to the extent that the wage reduction caused is less than the value placed on the term. In other words, we must find things workers want so much they are willing to take a sizeable wage drop in exchange for it. We might even say that, in general, compulsory terms are not redistributive; they make workers better off only if they also make employers better off.[36] As we will see, pressure rules, by contrast, work rather like collective bargaining, i.e. they enable workers to obtain higher wages, period (with employment possibly declining, remaining constant, or increasing). These higher wages come at the expense of consumers or employers; they are redistributive.

I now provide a few more examples of compulsory terms in the field of labor. Recall that the most important characteristic for legal rules to function as compulsory terms is that they have costs and benefits to employers and workers and, crucially, that these costs and benefits are amenable to being considered ex ante in the negotiation of a contract, *at a price and quantity not affected by the term itself*. That is the key difference with what I call pressure rules.

One example of a compulsory term is the maximum hour rules of the Fair Labor Standards Act (FLSA)[37] providing for overtime pay beyond a certain number of weekly hours. Another is the regulations adopted under the FLSA prohibiting "homework" in certain sectors like the textile industry.[38] The Family and Medical Leave Act of 1993 (FMLA) also obliges employers to allow workers to take unpaid leave if they have a "serious health condition," give birth to or adopt a child, or need to take care of a family member who is ill.[39] I have mentioned already the Occupational Safety and Heath Act, under which a plethora of specific rules have been adopted as to ways in which employers can and cannot organize their workplace.[40]

My examples so far have been of legislative origin, but the common law is also an important source of compulsory terms. The doctrine of consideration has historically been used by courts to impose obligations on the employer to provide sufficient work to employees on a fixed-term contract and paid by the piece.[41] Rules of contractual interpretation and "implication in fact" have been used to impose protection against dismissal without cause.[42] Promissory estoppel has similarly been used to render binding promises to offer certain benefits, including promises to pay a pension to a worker

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inframarginal workers value the term less than the marginal ones, a term valued by marginal workers at more than its cost will still likely impoverish workers as a group, although it will increase employment. *See* Craswell, *supra* note 32, at 378; Kennedy, *Distributive and Paternalist Motives, supra* note 32, at 655-57; Richard Markovits *The Distributive Impact, Allocative Efficiency, and Overall Desirability of Ideal Housing Codes: Some Theoretical Clarifications*, 89:8 HARV. L. REV. 1815, 1821 (1976).

36 This statement is valid for compulsory terms valued equally by all workers. Compulsory terms valued more by inframarginal workers *are* redistributive, although they hurt some workers, too. See *id.*

37 The Fair Labor Standards Act of 1938, 29 U.S.C. § 203.

38 Employment of Homeworkers in Certain Industries, 29 C.F.R. Part 530 (1959).

39 Family and Medical Leave Act of 1993 (FMLA), 29 U.S.C. § 2601 (1994).

40 For an introductory analysis of OSHA that nicely emphasizes the operationalization and specification of broad standards like "safe" by the OSHA administrative apparatus, see Hanoch Dagan & Roy Kreitner, *The Other Half of Regulatory Theory*, 52:2 CONN. L. REV. 605, 631-37 (2020).

41 *See* ROBERT STEINFELD, COERCION, CONTRACT, AND FREE LABOR IN THE NINETEENTH CENTURY 122-23 (2001).

42 Weiner v. McGraw-Hill, Inc., 57 N.Y.2d 458, 443 N.E.2d 441, 457 N.Y.S.2d 193 (1982).

upon retirement.[43] Various torts including negligent supervision and retention as well as intentional infliction of emotional distress have been used to create duties incumbent on employers to take steps to prevent workplace bullying.[44] Finally, courts have long relied on a mix of contract doctrines like consideration or unconscionability and of statutory antitrust standards (including an assessment of the "public interest" under the "rule of reason" standard) to decide on the legality of any given post-termination non-compete agreement signed by the worker,[45] distributing costs and benefits that will change supply and demand curves ex ante. An outright ban on non-compete agreements[46] will have the same kind of effect.

I have mentioned "job security" or protection against dismissal without cause as an example of a compulsory term. I now give a few examples of different degrees of protection against dismissals to illustrate that any given term can be more or less stringent, presumably with correspondingly higher benefits and costs the more stringent it is.[47] Protections against dismissal can be only against dismissals "motivated by bad faith or malice or based on retaliation,"[48] a quite narrow category. They can additionally or alternatively give the worker the right to a paid period of notice before being fired.[49] At a higher level of stringency, there can be a more or less strong prohibition on the employer's possibility of dismissing a worker without "just cause," which is commonly required to revolve around the worker's performance and ability to do the job.[50] Some legal regimes like Germany's "co-determination" rules even curtail firms' ability to discharge workers for economic reasons, a domain usually left unfettered by Anglo-American "just cause" regimes.[51] German law requires a showing that downsizing is inevitable and that the business goals of the firm could not have been reached without lay-offs, failing which a conciliation board can simply prohibit the downsizing.[52] The more protective the rule is, the higher the cost to employers and the benefit to workers should be. For any given rule, though, the distributive impact will depend on how the value placed by workers on the term's benefits compares to the amount by which wages drop, with employment reductions also a factor to consider.

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[43] Katz v. Danny Dare, Inc, 22 Ill.610 S.W.2d 121 (Mo. Ct. App. 1980).

[44] *See* Rickey E. Richardson, Reggie Hall & Sue Joiner, *Workplace Bullying in The United States: An Analysis of State Court Cases*, 3:1 COGENT BUS. & MGMT 1, 6-7 (2016).

[45] On which see Rachel Arnow-Richman, *The New Enforcement Regime: Revisiting the Law of Employee Competition (and the Scholarship of Professor Charles Sullivan) with 2020 Vision*, 50 SETON HALL L. REV. 1223, 1224-25 (2020).

[46] Federal Trade Commission, *Non-Compete Clause Rulemaking*, https://www.ftc.gov/legal-library/browse/federal-register-notices/non-compete-clause-rulemaking, (Jan. 5, 2023).

[47] *See similarly* Kennedy, *Distributive and Paternalist Motives*, *supra* note 32, at 595-96.

[48] Monge v. Beebe Rubber Co., 114 N.H. 130, 316 A.2d 549, 552 (1979). This rule can in turn be finessed to determine whether it affords protection only to "an employee [who] is discharged because he performed an act that public policy would encourage, or refused to do that which public policy would condemn," or whether it also protects against other types of retaliatory and/or bad-faith dismissal. *See* Howard v. Dorr Woolen Co., 120 N.H. 295, 414 A.2d 1273 (1980).

[49] This is the applicable rule pertaining to "wrongful dismissal" in most of the Canadian common law provinces. *See* Honda Canada Inc. v. Keays, [2008] 2 S.C.R. 362, 2008 SCC 39, at paras. 50-53 (Can.).

[50] FLOYD D. WEATHERSPOON, LABOR & EMPLOYMENT ARBITRATION: LEADING CASES & DECISIONS. A PRACTICAL APPROACH TO THE STUDY OF ARBITRATION 305ff (2016).

[51] That is, economic reasons for terminating an employment contract are usually accepted to amount to "just cause." *See* WEATHERSPOON, *id.*

[52] *See* JENS KIRCHNER, PASCAL R. KREMP & MICHAEL MAGOTSCH, KEY ASPECTS OF GERMAN EMPLOYMENT AND LABOUR LAW 14-15 (2d ed. 2010).

B. A Taxonomy of Pressure Rules

The pressure rules I now present revolve around conduct that can inflict harm on one's contractual partner to coerce them into a better bargain for oneself. The pressure tactics most often useful in the labor context involve unpleasant social encounters such as insults and intimidation, defamation, invasions of privacy, as well as economic nuisances. Many of the following pressure tactics are, as a matter of cultural idiosyncrasy rather than necessity, exerted in the course of "picketing," i.e. demonstrations in places where the employer (or other related targets) are likely to be.

Before providing a taxonomy of rules dealing with these tactics, I want to stress that, for modeling purposes, I will treat these rules in a way that is a bit divorced from their real-world use and is therefore likely to be counterintuitive. Indeed, picketing and other interpersonal pressures are most often deployed in attempts to secure a cartel or monopoly over the labor market, as in "recognitional" strikes or actions aiming to pressure the employer into hiring (only) union members.[53] Or, they are deployed during strikes, where the objective is to exercise monopoly power by inflicting economic, physical, and/or psychological damage to get the employer(s) to submit to the terms desired by the monopoly.[54]

By contrast, I lay out a taxonomy of legal rules dealing with pressure tactics that can be deployed by individual workers under perfect competition, with no monopolization. I initially lay out my list of examples of legal rules by dealing with tactics that are used by only one worker facing only one employer. I subsequently add competition on both sides of the market and show that the impact of pressure rules remains and that the rules therefore change the competitive outcome that obtains.

The reader may already anticipate that, for pressure rules to allow some workers to obtain better terms, other workers must agree to exert the same pressure tactics. In other words, my insertion of pressure tactics within the workings of perfect competition does not eliminate the issue of "undercutting." Still, I will show that pressure rules that change the level of bargaining power based on which perfect competition can occur have certain features in common with monopoly power but do not amount exactly to it. Perfect competition necessarily presupposes a baseline level of legally created bargaining power, and that does not amount to monopoly power per se.

My description of pressure rules relies on the legal realist point that rights to injure others physically, psychologically, and economically have many possible configurations all equally faithful to the concept of "rights,"[55] a point that incidentally is central to much modern law and economics, too.[56] The fact

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[53] See the following discussion of the law related to recognitional picketing intended to secure a union monopoly: Lee Modjeska, *Recognition Picketing Under the NLRA*, 35 U. FLA. L. REV. 633 (1983). See also the following famous case on the legality of a strike to constrain the employer to employ union members: Hitchman Coal & Coke Co. v. Mitchell, 38 U.S. 65 (1917).

[54] See the following discussion by Karl Klare of some relevant legal rules in this context: Karl Klare, *Judicial Deradicalization of the Wagner Act and the Origins of Modern Legal Consciousness, 1937-1941*, 62 MINN. L. REV. 265, 302 (1978).

[55] See *supra* note 4. See also the following useful demonstration of the logical incoherence of libertarian attempts to limit duress to the threatening of acts that are otherwise unlawful: Kelman, *Choice and Utility*, *supra* note 22, at 789-93. Kelman's argument provides crucial support for the proposition, mostly taken for granted here, that rights to harm can be configured in many equally plausible ways.

[56] Coase, *The Problem of Social Cost*, *supra* note 12, at 10, 19-24; LOUIS KAPLOW & STEVEN SHAVELL FAIRNESS VERSUS WELFARE 106-07 (2002).

that there are many equally logically or legally valid configurations of rights to harm others should not be taken to mean that no pressure tactic should be outlawed, of course. Although description of competitive equilibrium and of the employment contract do not often center the coercion and harm I emphasize here, I think the world really is as conflictual and even violent as the following description makes it appear. But that is not to say it would not be preferable to avoid certain types of harmful pressure tactics and replace them with something like an orderly bargaining process between monopolies or with tax-and-transfer. All I want to do is describe the role of pressure rules and coercion in creating multiple possible equilibria all equally in conformity with the concept of equal rights and freedoms. Once this positive fact is established, we can look for more normatively desirable ways to attain certain equilibria, or we can even conclude that certain equilibria can only be attained by morally undesirable means and should therefore not be attained.

Here goes my catalogue of legal rules.[57] Let us imagine a single worker and a single employer bargaining over a prospective employment contract. In addition to a series of compulsory terms that have the effects described in Part I.A, there will be legal rules about what the worker can do to the employer in the process of bargaining, including in picketing. There is an informative aspect of picketing, which the law looks favorably on,[58] and a coercive aspect whereby economic, physical, and psychological harm is threatened and/or inflicted. US law frowns upon the coercive aspect,[59] although I would say it is ineradicable and impossible to disentangle from the "informative" goals of picketing.

One might say that the effectiveness of picketing is a function of architectural, geographical, and urbanistic spatiality, and not merely of which pressure tactics are allowed or disallowed. For instance, employers can live in an inaccessible home and be able to carry out their work at a physical remove from workers. That said, access to space is mediated by legal rules, like the rules of trespass whereby employer property rights are balanced against worker free speech. [60]

In this culturally-situated yet hypothetical setting, the first legal category of pressure tactics that can be exerted by our single worker against their single prospective employer is "intentional infliction of

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[57] I refer here to several examples of positive legal rules enacted in statutes and case law. However, pressure rules, to a perhaps greater extent than rules imposing compulsory terms, have a "law-in-books" and a "law-in-action" version. Roscoe Pound, *Law in Books and Law in Action*, 44 AM. L. REV. 12, 22 (1910). Moreover, as legal pluralist scholars have taught us, we have to count as "law" whatever comes to be accepted as such by the relevant actors instead of limiting our view of law formal legal rules. Brian Z. Tamanaha, *A Non-Essentialist Concept of Legal Pluralism*, 27 J.L. SOC. 296, 313-15 (2000). In what follows, then, every use of the words "legal rule" should conjure up images of actors testing the bounds of official legality and engaging in conduct that may be de facto permitted even if officially prohibited. *See similarly* Duncan Kennedy *The Stakes of Law, or Hale and Foucault!*, 15 LEGAL STUDIES FORUM 327, 346 (1991) (describing the impact of "covert legal permissions"). The same goes for my occasional use of the term "social planner," a heuristic figure long used by economists to refer to a policymaker or institutional designer responsible for economic outcomes. DIRK NIEPELT, MACROECONOMIC ANALYSIS 28 (2019); JEAN HINDRIKS & GARETH D. MYLES, INTERMEDIATE PUBLIC ECONOMICS 425-26 (2013). Under the pluralist view I am accepting here, social planning occurs at various levels of the system including that of the judge or union leader, but it can also be subverted from below as individuals or groups take the law into their own hands.

[58] *See* Thornhill v. Alabama, 310 U.S. 88, 104 (1940) (concluding that picketing is protected under the First Amendment).

[59] *See* Hughes v. Superior Court, 339 U.S. 460, 465-66 (1950) (narrowing the pro-picketing holding in Thornhill, *id.* to exclude cases where "the manner in which picketing is conducted or the purpose which it seeks to effectuate gives grounds for its disallowance.").

[60] DAVID E. STRECKER, LABOR LAW 137 (2011).

emotional harm" (IIED). It should usually be allowed for the worker to voice "mere insults, indignities, threats, annoyances, petty oppressions, and other trivialities,"[61] potentially leading to "transient and trivial emotional distress."[62] And if "yelling and screaming profane language" can constitute illegal IIED,[63] the degree of insult involved needs to stem from truly "outrageous" conduct,[64] for instance by causing "fright, horror, grief, shame, humiliation, embarrassment, anger, chagrin, disappointment, worry, and nausea."[65] Pickets at which such insults are voiced against employers and/or managers are of course a staple of labor history.[66] Workers have often taken their picket lines to the home of the employer, or the street in front of it,[67] where the infliction of emotional harm should be greater than at the factory gates.

The second set of pressure tactics has to do not with what the worker can say to the employer directly but with what they can say to third parties that nevertheless impacts the employer. Intentional infliction of emotional harm can target not just the employer but their family members, for example, making the employer suffer emotional harm because of the third parties' own harm. Our hypothetical worker can also say things to the general public, in which case the applicable torts are likely to be different. If the worker publicizes things that are "true" and that the employer would not wish the public to know, the rules will relate to the tort of invasion of privacy.[68] If the things publicized are "false," the relevant rules will be those related to the tort of defamation, applicable if the worker says things that would "harm the reputation of [the employer] as to lower him in the estimation of the community or to deter third persons from associating or dealing with him".[69] Between or beyond the categories of "true" and "false," there is a broad range of utterances that count as "opinions" instead of "facts" because they are not "verifiable"[70] and are therefore authorized. The seasoned defamation litigator,[71] as well as the pragmatist philosopher,[72] will easily realize that what counts as fact or opinion is eminently manipulable, and different delineations of this boundary will allow a worker to voice more or fewer things that harm the employer's reputation and thereby create pressure.

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[61] Restatement (Second) of Torts § 46 cmt. d (Am. L. Inst. 1965).
[62] *Id.* cmt. j. Not to mention that there is a recognized First Amendment defense to an IIED claim: Snyder v. Phelps, 562 U.S. 443 (2011).
[63] GTE Southwest v. Bruce, 998 S.W.2d 605 (Tex. 1999).
[64] Zalnis v. Thoroughbred Datsun Car Co., 645 P. 2d 292 (Colo. Ct. App. 1982).
[65] Restatement (Second) of Torts § 46 cmt. j (Am. L. Inst. 1965).
[66] *See generally* Ahmed A. White, *Workers Disarmed: The Campaign against Mass Picketing and the Dilemma of Liberal Labor Rights*, 49 HARV. C.R.-C.L. L. REV. 59 (2014).
[67] *See e.g.* White, *id.* at 100; Charles C. Mulcahy & Steven H. Schweppe, *Strikes, Picketing and Job Actions by Public Employees*, 59 MARQ. L. REV. 113, 118-19 (1976).
[68] *E.g.* Diaz v. Oakland Tribune, Inc. (1983) 139 Cal.App.3d 118, 126 (identifying the following elements of the tort: "(1) public disclosure (2) of a private fact (3) which would be offensive and objectionable to the reasonable person and (4) which is not of legitimate public concern.").
[69] Nuyen v. Slater, 372 Mich. 654 (Mich. 1964).
[70] *See* Ollman v. Evans, 750 F.2d 970 (D.C. Cir. 1984), cert. denied, 471 U.S. 1127 (1985) (describing the complex inquiry into the degree of precision, verifiability, literary context, and social context required to separate fact from opinion in defamation law).
[71] *See generally* Rodney W. Ott, *Fact and Opinion in Defamation: Recognizing the Formative Power of Context*, 58 FORDHAM L. REV. 761 (1990).
[72] *See generally* HILARY PUTNAM, THE COLLAPSE OF THE FACT/VALUE DICHOTOMY AND OTHER ESSAYS (2002).

I have so far mostly dealt with pressure tactics that inflict or threaten to inflict psychological harm, though the public disclosure just mentioned could concern facts about the business that cause economic harm to the employer. I now turn more directly to physical and economic harm, in that order. I am willing to forego even mentioning actual physical harm to the employer as a pressure tactic, as well as the destruction of property, even though physical damage to person and property has always been ubiquitous and unevenly distributed in the world. Without going there, we might accept that our worker could restrain the liberty of the employer by momentarily blocking entrances to the workplace while the employer is inside or outside.[73] If the restraint is physical and not merely caused by verbal mistreatment or intimidation, the relevant rules will relate to the tort of "false imprisonment."[74]

We might also accept that our worker commit the tort of assault, which entails "the invasion of the plaintiff's peace of mind by causing apprehension of an imminent harmful or offensive contact, without regard to whether the contact occurs."[75] Words alone cannot constitute assault "unless together with other acts or circumstances they put the other in reasonable apprehension of an imminent harmful or offensive contact with his person."[76] The required "acts" or circumstances must be ones that "offen[d] a reasonable sense of dignity", although the victim cannot be "unduly sensitive as to his personal dignity".[77] Making threats of harmful physical contact credible might require occasionally carrying out the threats, which we might not want to authorize. But given the omnipresence of unprevented physical harm in our society, threats might be credible without ever being carried out, and the resulting "invasion of the [employer's] peace of mind" will put pressure on them. Like intentional infliction of emotional harm, assault and false imprisonment can be inflicted to the employer at the factory gates or in other places, including at or in front of the employer's home.

I now turn to economic harm.[78] By analogy to physical harm, we might hypothesize that each worker (or our hypothetical lone worker facing a single employer) could destroy or wear down employer property. We can also imagine the infliction of nuisances through noise and other disturbances that

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[73] On the historical importance of this tactic in labor law, see Note, *The Enforcement of the Right of Access in Mass Picketing Situations*, 113 U. PA. L. REV. 111, 113-14 (1965).

[74] Whittaker v. Sandford, 110 Me. 77, 85 A. 399 (Me. 1912) (holding that restraint must be physical, and not merely caused by "moral influence," for the purposes of the tort of false imprisonment).

[75] ARTHUR BEST & DAVID W. BARNES, BASIC TORT LAW: CASES, STATUTES, AND PROBLEMS 44 (2018).

[76] Restatement (Second) of Torts, § 31 (Am. L. Inst. 1965).

[77] *Id.* § 19.

[78] As announced at the outset of this section, I separate monopolizing tactics from non-monopolizing ones and deal only with the latter. More precisely, I distinguish tactics that amount to the exercise of monopoly power from tactics that could be exercised by competing individual workers without collectively bargaining or withdrawing work. In addition to strikes, I disregard "secondary boycotts," whereby workers try to convince suppliers and/or consumers not to do business with the employer to obtain better terms, from my model. *See* National Woodwork Mfrs Ass'n v. NLRB, 386 U.S. 612, 623 (1967); NLRB v. Retail Store Employees Union, 447 U.S. 607, 608 (1980). The "sit-down strike," whereby workers withdraw their labor without leaving the workplace, or "partial strikes" whereby workers slow down or otherwise marginally impair production, could be argued to be less clear instances of monopolization, because they are closer to economic damage any competing worker could inflict on the employer than to collectively withdrawing labor. Still, I am willing to keep these pressure tactics out of my model to have the purest case of non-monopoly pressuring. *See* James Gray Pope, *Worker Lawmaking, Sit-Down Strikes, and the Shaping of American Industrial Relations,1935-1958*, 24 L. & HIST. REV. 45, 109 (2006) (describing historical instances of "quickie sit-downs or other job actions that lasted less than twenty-four hours"); Archibald Cox, *The Right to Engage in Concerted Activities*, 26 INDIANA L.J. 319, 338 (1951) (describing "partial strikes").

would render the employer's trade less profitable.[79] For instance, we might imagine that the noise caused by picketing could disrupt the employer's business in much the same way that the confectioner's noise disrupted the doctor's business in the classic *Sturges v. Bridgman* case.[80] And remember the tactic I mentioned above of revealing facts to the public that deprive the employer of business opportunities. None of these tactics involves the collective withdrawal of labor or collective bargaining; they can all be exercised by a worker trying to obtain more favorable contractual terms even if we fast forward and imagine a setting in which each worker is exercising these pressure tactics individually while competing against fellow workers for a job.

II. The Conventional Economics of Perfect Competition as Negating Bargaining Power

Based on the above taxonomy of pressure rules that allow or disallow the infliction of economic, physical, and psychological harm on the other party, I will show that the impact of these rules survives the introduction of competition and shapes the competitive outcome. To do so, I lay out in Part II.A the conventional analysis of perfect competition, called the "limit theorem." The limit theorem purports to show how competition leads to a single invariant outcome, comprising a single price and quantity for the good or factor traded. In this analysis, perfect competition removes any possibility of "bargaining" or pressuring the other side into a better deal.

In Part II.B, I present the part of the conventional analysis I will build on to introduce the impact of pressure rules in changing the perfectly competitive outcome. That part, called the "second welfare theorem," describes the possibility of transferring "endowments" or "wealth" between the parties using lump sum taxes to change the competitive outcome. In Part III, I will develop an analysis analogous to the second welfare theorem to describe how, even once we have added workers and employers all the way up to a state of perfect competition, legal pressure rules change the competitive outcome in both distributive and allocative terms.

A. The Limit Theorem and Perfect Competition

I now present the limit theorem, originally established by Francis Edgeworth in his 1881 book *Mathematical Psychics*.[81] George Stigler has noted that Edgeworth's analysis was the first "systematic and rigorous definition of perfect competition" and that Edgeworth's definition remains at the core of the dominant conception of perfect competition today.[82] Indeed, the limit theorem figures prominently in intermediate and advanced economics textbooks.[83] I rely on a few particularly accessible treatments[84] and forego extensive citation.

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[79] Ronald Coase's famous article *The Problem of Social Cost* featured many interesting examples of nuisances that might be relevant here. *See* Coase, *The Problem of Social Cost*, *supra* note 12.

[80] 11 Ch. D. 852. See the discussion in Coase, *id.* at 8.

[81] FRANCIS Y. EDGEWORTH, MATHEMATICAL PSYCHICS: AN ESSAY ON THE APPLICATION OF MATHEMATICS TO THE MORAL SCIENCES (1881).

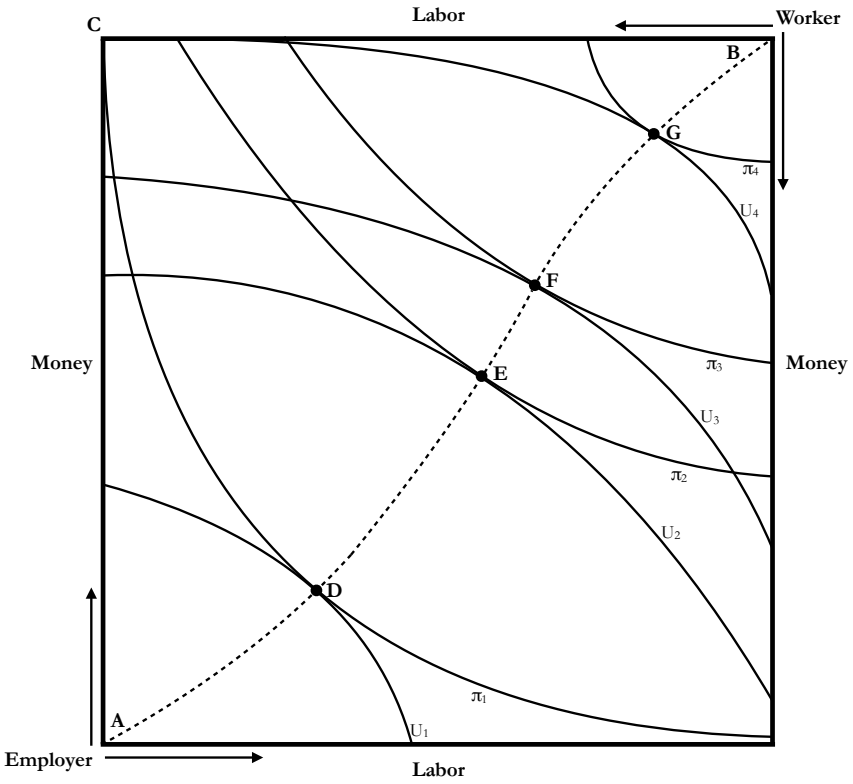
[82] George Stigler, *Perfect Competition, Historically Contemplated*, 65:1 J. POL. ECON. 1, 6 (1957).

[83] ANDREU MAS-COLLEL, MICHAEL WHINSTON & JERRY GREEN, MICROECONOMIC THEORY 519-20 (1995); HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 582 (7th ed. 2006).

[84] John Creedy, *Edgeworth, Francis (1845-1926)*, *in* THE NEW PALGRAVE DICTIONARY OF ECONOMICS 733 (Steven N. Durlauf & Lawrence E. Blume eds., 2008); MICHAEL BACHARACH, ECONOMICS AND THE THEORY OF GAMES 138-52 (1997); MAS-COLLEL, WHINSTON & GREEN, *id.*; VARIAN, *id.*

The limit theorem shows how a market, starting from a baseline of only one actor on both sides of the transaction (as in my worker-employer scenario), is affected by the progressive introduction of more and more competitors on both sides. In particular, the limit theorem demonstrates that the addition of competitors progressively shrinks the number of bargains that can be struck, down to a single bargain if an infinite number of competitors is added. The limit theorem is usually presented in an Edgeworth box diagram, which is different from a supply and demand graph. I will carry out my own analysis in the following Edgeworth box, the components of which I now explain:

FIGURE 1(A): EDGEWORTH BOX



This graph is called a box because it is closed and represents the zero-sum distribution of two commodities respectively represented on each axis of the graph. In the labor market context, the two commodities are money and labor. There are two points of origin, corresponding to one of the two trading parties having zero units of both goods. Thus, at the lower left (upper right) corner of the box, the employer (worker) has no labor and no money. At the upper left point C, which will be the initial distribution of the two goods in my analysis, the employer has all the money and the worker has all the labor. This is referred to as the parties' original "endowments."

Inside the box, there are indifference curves representing the preferences of each side as to different bundles of labor and money. One side is of course indifferent between all the distinct quantities of money and labor that lie along an indifference curve. The indifference curves π1 to π4 are those of the employer, in increasing order of preference, and the U1 to U4 curves are those of the worker, in *decreasing* order of preference. Indifference curves farther from one party's corner (e.g. π4 for the employer and U1 for the worker) are preferred to the curves closer to their corner. Though I have

included only four indifference curves for each side, imagine that the box is filled with indifference curves and that every point in the box touches one curve.[85]

The dashed curve from point A to point B represents all the points of tangency of two indifference curves from each side. This is the "contract curve." It is well known that tangency between two indifference curves amounts to Pareto optimality, i.e. a state in which it is impossible to make one of the parties better off without making another worse off.[86]

The limit theorem starts from a baseline of only one party on each side and entails the adding of additional parties until we reach perfect competition. Note that for ease of exposition, I will ascribe the male gender to employers and the female gender to workers in this Part and the next. At the initial stage of just one party on each side, a worker and an employer, the situation is as follows. Suppose we start at point C, where the worker has all the labor and the employer has all the money. The two parties will be willing to trade to reach positions that lie on indifference curves higher than those that touch point C. Conversely, no party will accept to trade to a position that makes them worse off than they are at C. This means the $\pi 1$ and U4 curves mark the outer limits of the trades that are feasible with one worker and one employer situated at point C. In exchange for what she holds at point C, the worker will not accept a bundle of money and labor to the northeast of the U4 curve, and the employer will not accept a bundle of money and labor to the southwest of the $\pi 1$ curve.

Figure 1(A), then, represents the "indeterminacy"[87] of the outcome of bargaining between two sides of a bilateral monopoly, by which it is meant that many different outcomes are possible. Any outcome between points D and G on the contract curve is attainable here. It is often said that, with competition absent on both sides, the distribution of the gains from trade will be a function of "bargaining."[88] This leaves room for pressure rules of the type I described in Part I.B to determine the outcome,[89] a point I will of course revisit below. Orthodox economists, however, have often pointed to psychological factors like the parties' "dispositions and force of character"[90] and "shrewdness […] as bargainers."[91] I would argue that these non-legal factors are often mediated by legal rules, in that force of character and shrewdness can plausibly often be overcome by more extensive permissions to harm. Therefore, legal rules will often determine the outcome of bargaining in this context.[92]

The limit theorem purports to show precisely how competition can narrow the possible equilibria to one, thereby eliminating the indeterminacy just described. The theorem entails adding subsequent pairs of worker and employer to the original two. If each pair of worker and employer has the same tastes and endowments, we can use the initial bilateral monopoly graph of Figure 1(A), and any given

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85 On this assumption of "continuity" in the preferences of the market actors, see BACHARACH, *supra* note 84, at 141.

86 Francis M. Bator, *The Simple Analytics of Welfare Maximization*, 47:1 AM. ECON. REV. 22, 24 (1957).

87 This was Edgeworth's original term, used ever since. *See* EDGEWORTH, *supra* note 81, at 20. For a recent exposition of this notion, see Blair, Kaserman & Romano, *supra* note 27.

88 *See e.g.* Steven G. Medema & Richard O. Zerbe, Jr., *The Coase Theorem*, in THE ENCYCLOPEDIA OF LAW AND ECONOMICS 836, 851 (B. Bouckaert & G. De Geest eds., 2000).

89 This is acknowledged for instance by Epstein, *A Common Law for Labor Relations, supra* note 16, at 1397.

90 WILLIAM STANLEY JEVONS, THE THEORY OF POLITICAL ECONOMY 124 (5th ed. 1957) (1871).

91 Coase, *The Problem of Social Cost*, *supra* note 12, at 5.

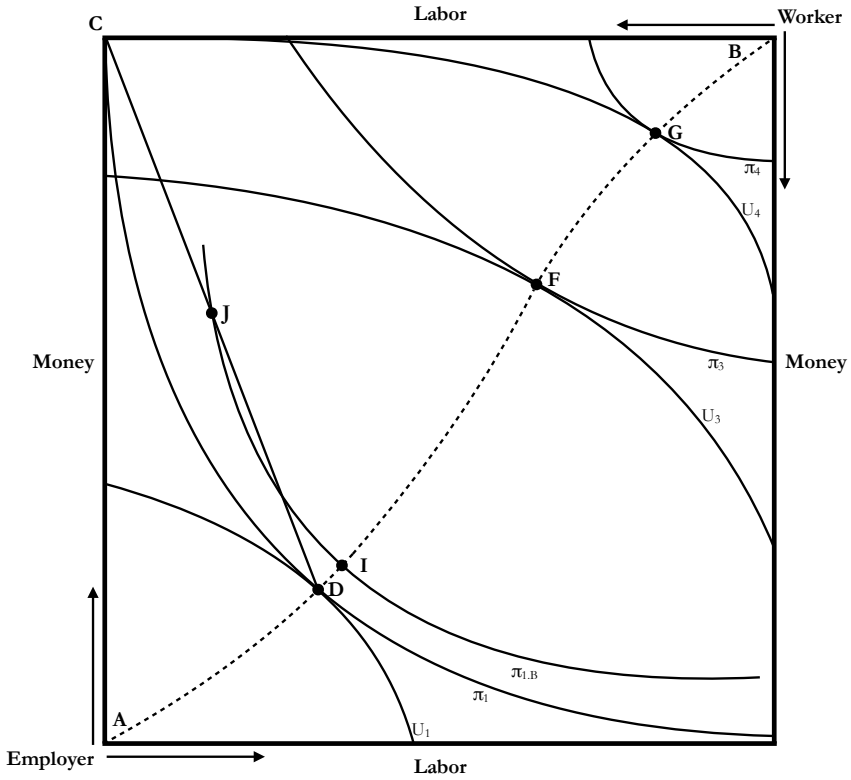
92 On the interaction of legal and non-legal factors in determining the outcome of bargaining, see Kennedy, *The Stakes of Law*, *supra* note 57, at 345-48.

point can now represent a distribution between all the identical workers on the one hand and all the identical employers on the other.[93]

The limit theorem demonstration starts as follows. We first need to fix the outcome of the initial "indeterminate" bilateral monopoly bargaining between one worker and one employer. Let us assume the applicable pressure rules give the worker all the bargaining power. The first worker is therefore able to push the first employer to point D, which lies on the indifference curve touching the initial endowment point C. This means that the worker can squeeze so much out of the employer that he is indifferent between hiring and not hiring the worker.

The adding of a pair of worker-employer can be represented by the following modifications to Figure 1(A),[94] with indifference curves π2 and U2 omitted to clear up some space:

FIGURE 1(B): EDGEWORTH BOX, TWO PAIRS OF TRADERS



Starting from a bargain that puts the initial worker and employer (let us call them W1 and E1) at point D, we now add W2 and E2. E2 and E1 can now work together to try to avoid being *both* pushed to point D. They can do so by agreeing that only one of them (say, E1) will trade with a worker (say, W1), and that they both will share the bounty of labor that E1 thereby acquires. That is, E2 will share his endowments with E1 instead of trading with W2, leaving W2 without a trading partner. If E1 and E2 equally share their combined stock of labor and money after E1 has traded with W1 to point D,

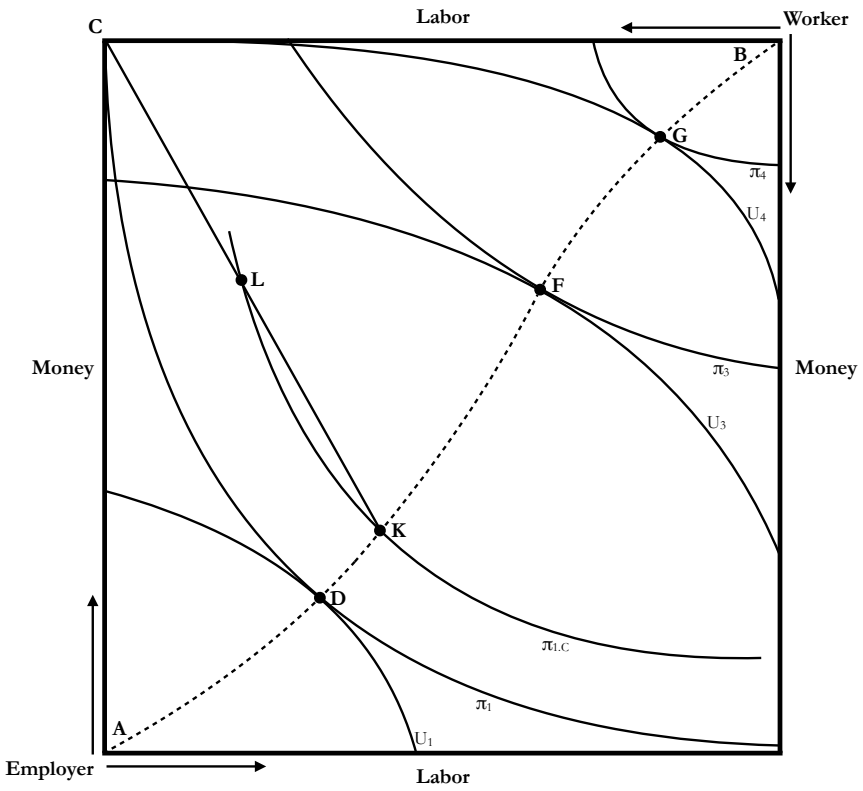
93 *See* Creedy, *supra* note 84, at 738.

94 This graph and the discussion that follows it are particularly indebted to the admirably accessible presentation of the limit theorem in Creedy, *id.* at 739.

they can both be at point J, halfway between points C and D. Point J lies on a higher indifference curve (π1.B) than point D (π1).

To recap, after the initial employment contract and subsequent inter-employer sharing, E1 and E2 are at point J, W1 is at point D, and W2 is left alone at point C. W2 is on indifference curve U4 and is therefore much worse off than W1. This gives W2 a strong incentive to make a better offer to E1 than W1's proposed deal. W2 "undercuts" W1 by competing to secure at least some business from the Es, who can engage in the same kind of maneuver with W2's better offer, now leaving W1 in isolation and spurring further undercutting. This recontracting process continues until the two Es force the Ws to the following outcome:

FIGURE 1(C): EDGEWORTH BOX, TWO PAIRS, FINAL OUTCOME



Recontracting stops when the employers have forced the workers to offer them enough labor that the employers can be at point L by sharing the labor one of them obtains. At point L, which, again, is halfway between points K and C because the two employers share their resources equally,[95] the employers have no need to leave one of the workers isolated anymore. Indeed, E1 and E2 can offer to trade with both W1 and W2 to point K, and the two workers will accept this trade because it still makes them much better off than staying at point C. Note that the introduction of an additional pair of traders has reduced the scope of possible outcomes, eliminating those between points D and K on

[95] The assumption of identical preferences ensures that this sharing maximizes each party's utility: Creedy, *id.* Note that a mid-point on the hypothenuse necessarily corresponds to the mid-point of each cathetus, so that, at point L, E1 has given E2 half of E1's newly acquired labor in return for half the money E1 spent to acquire the labor from W1.

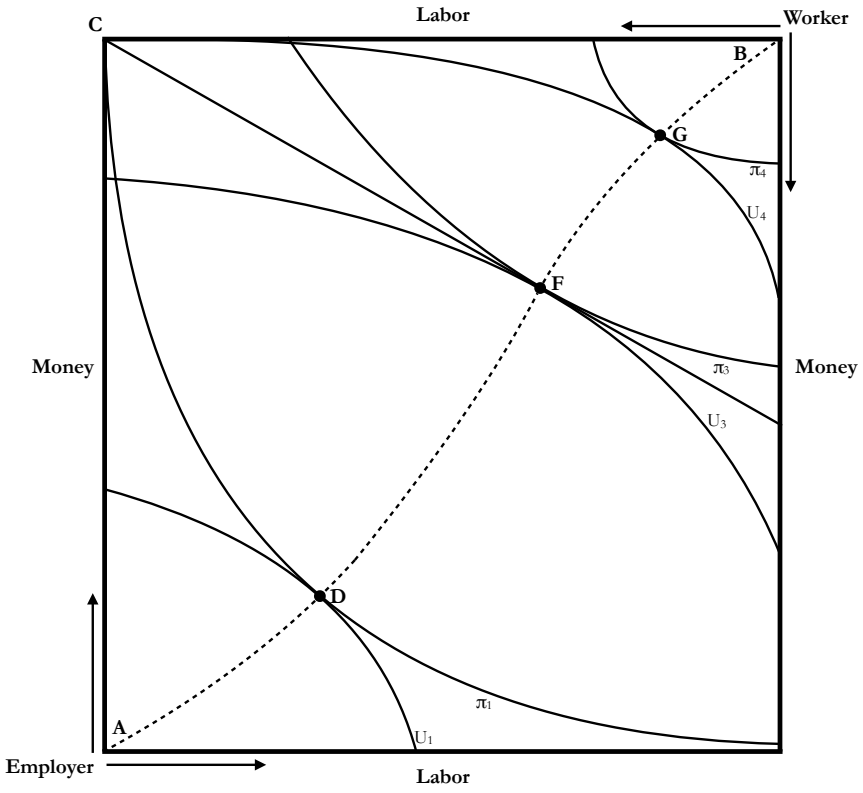
the contract curve. The employers can no longer be constrained to accept a less favorable offer than that which puts them at point K.

For the set of feasible outcomes to shrink some more, we need to add additional pairs of worker-employer. If we add a third pair, there will be a similar process as that depicted in Figure 1(B), but starting from Figure 1(C)'s point K. Instead of halfway, the employers can get to two thirds of line CK in Figure 1(C). They do so by having two employers contract with two workers and share their newly-acquired labor with the third employer. Being at two thirds of the CK line will bring all employers to a higher indifference curve than at point L or K. Recontracting will proceed until the employers are all at a point that is at two thirds of a line from C to a point on the contract curve which is on the same indifference curve as the point at two thirds of the line in question. That point will be to the northeast of point K in Figure 1(C), and the locus of feasible contract-curve points will have shrunk some more.

Adding additional pairs of traders will allow employers to reach more favorable contract-curve points lying on the same indifference curve as a point that is 3/4, 4/5, 5/6, 6/7, 7/8, and so on, of the way between the relevant contract-curve point and C. As we get to an infinite number of traders, the contract curve will shrink to a single point, because the infinite number of employers will be able to leave one worker isolated and position themselves at an infinity minus one fraction of a line between C and the contract curve. The entirety of the bargaining power initially attributed to workers will have been dissolved by the introduction of additional competitors who can isolate and force one worker to make a better offer.[96] The single equilibrium point with an infinity of traders is point F in the following modification of Figure 1:

[96] Of course, we could have done the same exercise with an assumption that the initial bargaining power was entirely on the side of the employers, i.e. starting from Figure 1(A)'s point G. *See* Creedy, *supra* note 84, at 740.

FIGURE 1(D): EDGEWORTH BOX, COMPETITIVE OUTCOME



Point F, which in the presence of an infinity of traders is the only outcome that cannot be destabilized by a coalition, has the property that the line from the origin that crosses it is tangential to both indifference curves touching it.[97] It is also the only point of intersection of supply and demand curves, which can be added to the Edgeworth box given an initial endowment point and the preferences of each side in the form of indifference curves.

I spare the reader a detailed explanation of exactly how supply and demand curves are derived in an Edgeworth box.[98] The following modification of Figure 1(A) shows the labor supply and demand curves intersecting at point F, with point H representing a monopoly outcome on the labor demand curve. Notice that, as Edgeworth explained long ago, *bilateral* monopoly outcomes are not guaranteed – and in fact are not likely – to be on the parties' supply and demand curves:[99]

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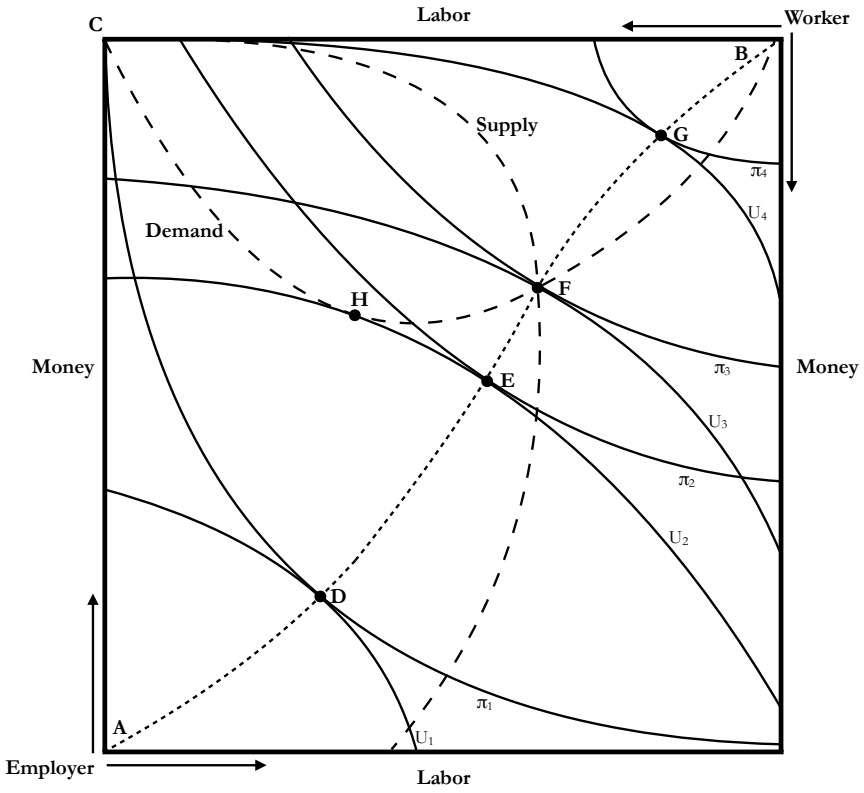
[97] *See* MICHAEL ALLINGHAM, GENERAL EQUILIBRIUM 46 (1975). Newman usefully explains this as follows: if under a given outcome on the contract curve part of an indifference curve cuts to the other side of the price line from the origin to the relevant contract-curve point, there exists a coalition that, given a sufficient number of traders, can block that outcome. *See* PETER NEWMAN, THE THEORY OF EXCHANGE 116-17 (1965). *See similarly* BACHARACH, *supra* note 84, at 150.

[98] A party's supply or demand curve (often called reciprocal "offer curves" in an Edgeworth box context) is made up of the points where a price line from the endowment point C hits every possible indifference curve of the relevant party. *See* NEWMAN, *id.* at 87-88. For the original verbal description of this by Edgeworth see *supra* note 81, at 113.

[99] EDGEWORTH, *supra* note 81, at 31. For a recent demonstration of this in a supply and demand graph, see Blair, Kaserman & Romano, *supra* note 27.

FIGURE 1(E): EDGEWORTH BOX, SUPPLY AND DEMAND CURVES



The limit theorem therefore shows that under perfect competition, the allocation of resources and the distribution of income are uniquely determined at the single competitive point F, which is also the point of equilibrium between supply and demand.

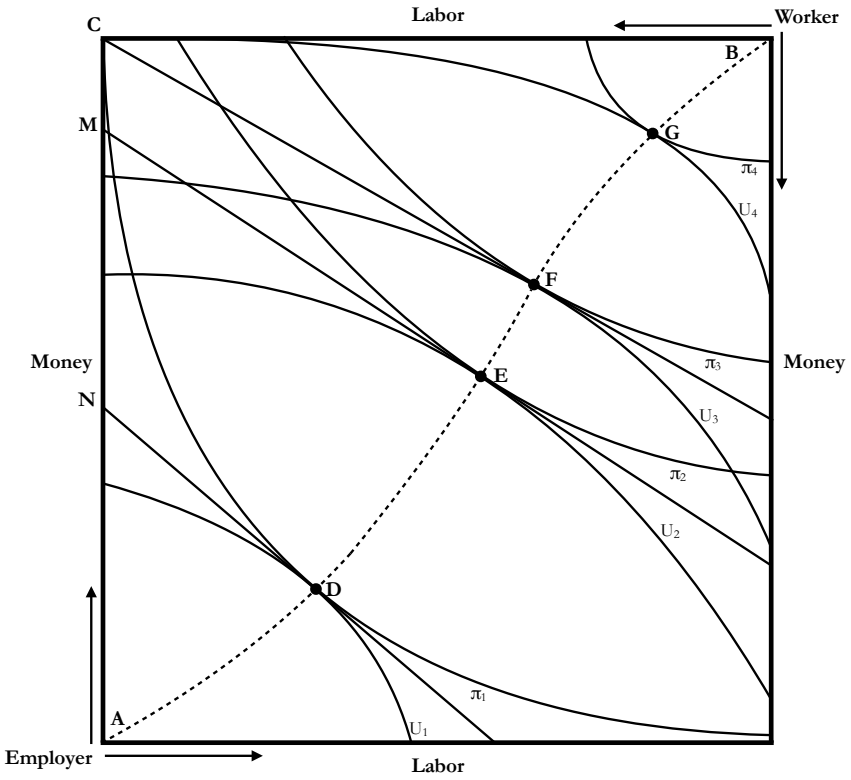
B. The Second Welfare Theorem and Multiple Equilibria

In the basic analysis of perfect competition presented in Part II.A, the initial endowments do all the work of determining the competitive outcome, conditional on the preferences of the two parties, which in the case of the employer will be a function of production technology and consumer demand, among other things. In this briefer Part, I present established theorems about how initial endowments can change, with the result that the unique competitive outcome that obtains under the analysis of Part II.A changes, too. These theorems, including the famous "second welfare theorem" taught to all graduate economics students,[100] will be useful for my analysis in Part III introducing legal rules within section's II.A's model of perfect competition.

The second welfare theorem entails the demonstration that several different outcomes can be competitive solutions to the analysis described in Part II.A. Each of these different outcomes can be the competitive one if endowments are redistributed, i.e. if we change the quantity of each good each player starts out with. Perhaps the easiest way to make this analysis intuitive is to fast forward to its graphical presentation in the following figure:

[100] VARIAN, *supra* note 83, at 586; MAS-COLLEL, WHINSTON & GREEN, *supra* note 83, at 525.

FIGURE 1(F): EDGEWORTH BOX, SECOND WELFARE THEOREM



Here, the second welfare theorem entails changing the quantity of endowments our workers and employers start with, so that C is no longer our starting point. Suppose we transfer a little bit of money to the workers, so that they start out with all the labor and *some* money instead of none, with the employers' initial stock of money correspondingly reduced. Starting at point M instead of point C, we can do the analysis of Part II.A again.

This time, the initial indifference curves bounding the set of feasible bargains for the initial bilateral monopoly is to the southwest of points D and G. Point G, in fact, is made impossible because it lies to the northeast of the indifference curve that touches the initial endowment point M (a curve not pictured in Figures 2(A) to (F)). The initial worker will not agree to move to a point on a curve that is less desirable than any point on the one curve that leaves her indifferent with her initial situation. The same analysis as above is carried out from this different starting point, and the final point where the price line from the initial endowment point hits the contract curve exactly at the point of tangency of both sides' indifference curves is point E, not point F. We can carry out the same analysis with N as a new starting point, involving even more redistribution to workers before trade starts to happen, and the final equilibrium under perfect competition will be at point D.

When one contemplates carrying out the transfer of endowments illustrated in Figure 1(F) in favor of employers, one realizes that it is easier to transfer ownership of money than ownership of labor, at least on a permanent basis as is required by the analysis. In fact, the second welfare theorem often involves a different operation than the transfer of endowments, particularly in cases where neither of the two goods traded is money. In the traditional textbook treatment of the second welfare theorem,

we have a pure "exchange economy" where two people maximize preferences by exchanging one good for another.[101] We might imagine trading apples for oranges, or one form of labor services for another.

The device often mentioned to get around the fact that it would be hard to transfer actual ownership of endowments is a transfer of "wealth,"[102] by which it is meant money. Money is relevant presumably because the two traded goods, e.g. apples, oranges, or labor, are priced in money. Transferring some units of a third good in which the two traded goods are denominated is *just like* transferring some units of one of the two goods. It changes the competitive outcome, say, from F to D in Figure 1(F), even though in terms of actual endowments of the two traded goods we remain at the initial point C. The graphical representation of this transfer is that the competitive price line, e.g. CF, slides and becomes, say, ND, without any change in the actual initial endowment point.[103]

As is well known, for such a "transfer" of endowments or money to work in the way just described, the taking or taxing of the units of endowments or money must not change the relevant actors' conduct. If the actors can change their behavior to avoid paying some of the tax, for instance by reducing their economic activity and the ultimate quantity of money or endowments they own, the impact of the transfer will not be merely to change the competitive outcome as in the second welfare theorem. The taking of the units of the relevant goods, in other words, must have a "lump sum" character and not be conditioned on any course of action.[104]

Rather than the details of how a tax on endowments or their equivalent in the numéraire good is designed, what interests me is the analytical fact that a transfer of a good *other* than the two that are exchanged can have an impact equivalent to a transfer of the goods traded. The transfer of the third good changes the *value* of the two parties' endowments vis-à-vis one another in the context of their market exchange, even though the legal title and physical possession of those endowments does not change. I now argue that changing the legal rules that determine the parties' permissible conduct in bargaining has an impact on the competitive equilibrium analogous to this transfer of a good other than the two that are exchanged in the market.

IV. Modeling Pressure Rules Under Perfect Competition

The limit theorem is extremely valuable for my purposes because it provides a precise account of how competition works. As has often been noted, the limit theorem is in this regard much superior to early theories of competitive equilibrium that just *assumed* a process in which actors take prices "as given," as if guided by the famous fictitious figure of the "auctioneer" who announces prices in markets until we reach the price that equilibrates supply and demand.[105] Specifically, the mechanism of recontracting

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[101] *Id.*

[102] MAS-COLLEL, WHINSTON & GREEN, *supra* note 83, at 525. See the similar analysis in TRUMAN F. BEWLEY, GENERAL EQUILIBRIUM, OVERLAPPING GENERATIONS MODELS, AND OPTIMAL GROWTH THEORY 165 (2007); DAVID KREPS, MICROECONOMIC FOUNDATIONS I: CHOICE AND COMPETITIVE MARKETS 364 (2013).

[103] *Id.*

[104] *See* MAS-COLLEL, WHINSTON & GREEN, *supra* note 83, at 547; VARIAN, *supra* note 83, at 587.

[105] On the contrast between Edgeworth's theorem and previous theories of competitive equilibrium see E. Roy Weintraub, *The Microfoundations of Macroeconomics: A Critical Survey*, 15:1 J. ECON. LIT. 1, 15 (1977); BACHARACH, *supra* note 84, at 149.

involves the exercise of "coalitional power"[106] and "collusion"[107] on the part of "maneuvering subgroups"[108] that can force one member of the opposite side to undercut their fellow workers or employers.

The irony is, of course, that the exercise of a form of monopoly power is required to bring about the competitive outcome. By noting this, I do not mean to suggest that the limit theorem itself shows that competition and monopoly cannot be meaningfully distinguished. I merely mean to note that the behavioral and game-theoretic underpinnings of perfect competition are more complex than is often noted and require collective, monopoly-like action at least as an intermediary step in the operation of competition. These more complex underpinnings provide me with the wedge I need to introduce pressure rules as a factor determining which competitive outcome ultimately obtains.

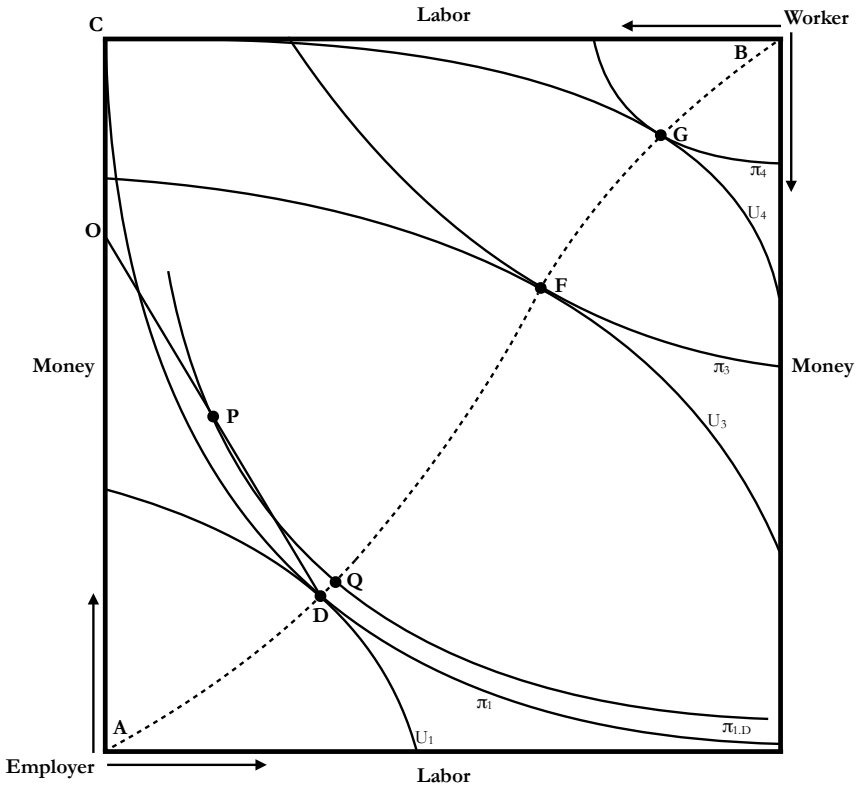
A. Wealth Effects and Pressure Tactics

Let us take up the limit theorem at the point at which a second pair of worker-employer is introduced, i.e. Figure 1(B) above. Recall that the outcome just prior to the introduction of the second pair is that the first worker has exercised her legal rights to pressure the employer into the most favorable possible deal, point D. We can imagine that the worker had picketed the factory gates and the employer's home, causing emotional harm and an economic nuisance. Alternatively, it may well have been enough to threaten these things; under perfect information and no transaction costs, threats may well lead costlessly and immediately to a better deal for the worker.

Remember that in Figure 1(B) above, E2 cooperated with E1 to dilute W1's bargaining power and isolate W2. E1 traded with W1 to point D, and E2 stayed at point C, going to point J as E1 shared with E2 the labor acquired from W1. Here is the rub I now add. W1 would obviously want to prevent E1 and E2 from neutralizing W1's use of pressure rules. W1 can therefore refuse to trade with E1 to point D unless E1 renounces his collusive sharing scheme. Instead of point D, W1 can offer to E1 to trade to a point that lies below D, so that instead of E1 and E2 being respectively at Figure 1(B)'s points C and D before they share, they are at the equivalents of, say, points O and D in the following modification of Figure 1:

[106] Lloyd S. Shapley & Martin Shubik, *Pure Competition, Coalitional Power, and Fair Division*, 10:3 INT'L ECON. REV. 337, 339 (1969).
[107] *Id.*
[108] BACHARACH, *supra* note 84, at 149. *See similarly* Robert J. Aumann, *Markets with a Continuum of Traders*, 32:1 ECONOMETRICA 39, 40 (1964); Jerry Green, *The Stability of Edgeworth's Recontracting Process*, 42:1 ECONOMETRICA 21, 21 (1974).

FIGURE 1(G): EDGEWORTH BOX, TWO-PAIR BARGAIN WITH PRESSURE RULES



I say "equivalent" because in fact the initial money endowments of E2 have not changed and remain at C. But by selling her labor for a higher price than E1 would otherwise have had to pay to move to point D, W1 can cause E1 and E2 to have the same total amount of money and quantity of labor than if they were respectively at points D and O. Being at D and O is less favorable to the employers than being at Figure 1(B)'s points C and D; now the employers' sharing leads them to point P, which places them on a lower indifference curve (π1.D) than the curve π1.B they reached in Figure 1(B). It follows that the final stopping point of the two-pair bargaining process will be closer to D than Figure 1(C)'s point K.

In order to get the employers to accept the offer that puts them at the equivalent of points O and D in Figure 1(G), W1 has to exert the pressure tactics we assumed got her to point D in the first place, i.e. before the second pair of worker-employer was introduced. So, the tactic represented in Figure 1(G) is indeed one that entails using one's legally created pressure rights. Again, note that by engaging in the conduct I am presuming is allowed by the pressure rules, W1 is causing the employers to be in the same situation they would be in if they both started the bargain at point O instead of C. The employers are not in fact starting the bargaining with less money; but the legal pressure rules empower W1 to coerce them into surrendering enough money that, after concluding the deal between W1 and E1 that will be the basis for collusive sharing between E1 and E2, it is *as if* the employers had started with less money. The competitive outcome will therefore be the one that would obtain if, without

changing legal rules, we had transferred some initial endowments of money to the workers who would then start with some money instead of none.[109]

We can repeat the same analysis with more than two pairs, all the way up to an infinite number of pairs. Instead of just W1 exerting bargaining power to coerce the employers into a more advantageous deal on which to base the employers' collusive sharing scheme, each subsequent step will involve the exercise of the same legally-created bargaining power by all the workers minus one. Assuming all the additional workers have the same bargaining power as the first one, there will be a different line from O that will entail that employers share their bounty at a fraction of the line higher than one half (it would be 4/5 of the way if there were five pairs of worker-employer, 5/6 if there were six pairs, etc.). It should be intuitively obvious that the ultimate perfectly competitive outcome with an infinity of workers and employers will not be point F, but rather a point between D and F.

W1 and W2's bargaining power, exerted first by W1 in the case in which there are two pairs of worker-employer, could lead them to an even more favorable point than O. A very thorough bargaining power might for example allow W1 to coerce the employers into accepting a deal that puts them in a situation equivalent to that in which they had started the bargaining at Figure 1(F)'s point N. This would mean that the final perfectly competitive outcome with an infinity of workers and employers would be point D. In such a case, the workers would be able to secure such extensive bargaining power that they could force all the employers into the least favorable deal they would accept instead of going to another market.

The foregoing analysis amounts to saying that the value of factor endowments can change even if their quantity and the formal legal title over them remain the same. What makes the value of the factors change is the exercise of legal rights to pressure the other party into a more favorable price for one's endowments. This exercise of legal rights influences the value of the endowments in ways not unlike the way a transfer of the numéraire good changes the value of two non-numéraire goods in the second welfare theorem described in Part II.B. Both have just the same effect as transferring the formal ownership of the endowments, too. This equivalence is explained by the fact that an endowment is only valuable in relation to other parties' wants, ability to pay,[110] as well as legally constructed bargaining power. The following passage by Robert Hale, quoted earlier in this Article, expresses this point quite well:

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[109] My analysis of the way in which legal pressure rules change the competitive equilibrium may be thought to bear some resemblance to a point extensively debated in the early literature on the limit theorem. This point is the possibility that the *order* in which the deals made and broken during recontracting influence the final outcome by changing the endowments on the basis of which subsequent deals will be made. For a retrospective overview of this literature see Donald A. Walker, *Edgeworth's Theory of Recontract*, 83:329 ECON. J. 138, 141-42 (1973). It is unclear to me that these objections cut very deep, and I am inclined to think that Kaldor and Hicks pointed to convincing ways in which the competitive outcome can be made independent of the order in which the deals are struck. *See* Nicholas Kaldor, *A Classificatory Note on the Determinateness of Equilibrium*, 1:2 REV. ECON. STUD. 122, 127-28 (1934); John R. Hicks, *Edgeworth, Marshall, and the Indeterminateness of Wages*, 158 ECON. J. 215, 223-26 (1930). My own approach, though it also introduces an intermediary step in the bargaining process that changes the final outcome, is not concerned with the order in which the transactions occur per se, but rather with the possibility that participants have of exercising pressure tactics at *any* point of the recontracting process to change the final outcome.

[110] Orthodox economic analysis recognizes this point regarding wants and ability to pay, but *not* legally constructed pressure tactics. *See* MAS-COLLEL, WHINSTON & GREEN, *supra* note 83, at 515-17.

> The market value of a property or of a service is merely a measure of the strength of the bargaining power of the person who owns the one or renders the other, under the particular legal rights with which the law endows him, and the legal restrictions which it places on others.[111]

The analysis I have been expounding is also in some ways merely an elaboration of the following passage by Duncan Kennedy, cited above in a footnote:

> [F]or any given specification of tastes, natural resources, and factor endowments in a perfectly competitive economy, there will be not one but many possible outcomes -- indeed one outcome for each possible legal regime that meets the formal criteria of commodification and free exchange. These will differ both as to the allocation of resources (the product mix) and as to the distribution of income.
>
> The reason for this is that the bundle of legal rights that goes along with an abstract "factor endowment" has a powerful impact on how much that endowment is worth in the competitive struggle. Different legal regimes will generate "wealth effects" on the allocation of resources because legal rules are a constitutive dimension of the wealth that factor endowments define.[112]

I see my contribution here as showing how these verbal insights can be operationalized within the more detailed account of the competitive process supplied by the limit theorem. To that end, I want to deal now with the only respect in which the operation of pressure rules is *not* equivalent to transferring the ownership of endowments. Even though the exercise of powers granted by pressure rules can make it as if the employers went from point C to point O in Figure 1(G), the indifference curve $\pi 1$ (U4) may well still be the most unfavorable deal any given employer (worker) will accept. By contrast, if there had been an actual transfer of the initial ownership of factors from points C to O, $\pi 1$ would no longer be the outer limit of the possible deals, and it would become possible to push the employers to a point southwest of D.

This difference is due to the plausible assumption that the bargaining power created by pressure rules only changes the value of endowments in *this* market and bargaining relationship. The outer limits of the possible bargains are fixed in *other* markets and are a function of each worker and employer's alternative returns to their money or labor, i.e. their "opportunity cost."[113] This is why, in Figure 1(G), the recontracting process at point O still starts from the middle point of a line to point D; indeed, point D remains the outer limit for all employers involved. Note though that the location of the boundary curves $\pi 1$ and U4 will be affected by a change in pressure rules in the *other* markets where the worker and employer might go. Conversely, a change in the pressure rules in Figure 1's market to empower one side is likely to change the location of the outer bounds in other markets, by changing the deal one side can rely on as an alternative to what the other markets offer them.[114]

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111 Hale, *Bargaining, Duress, supra* note 5, at 625.
112 Kennedy, *The Role of Law, supra* note 1, at 961.
113 *See* William Fellner, *Prices and Wages Under Bilateral Monopoly*, 61:4 Q. J. ECON. 503, 510 (1947).
114 See the similar distinction made by Kennedy, *The Stakes of Law*, *supra* note 57, at 337.

That said, a given pressure rule may sometimes govern more than one market. For instance, a court decision may allow (or disallow) assertive picketing tactics or defamatory statements in terms that "apply" to all labor markets, or even to non-labor markets as well. This would change *both* the final outcomes between the bounds of the contract curve in Figure 1's market *and* the location of the bounds themselves, by changing what the workers and employers can get in their next preferred market.[115]

B. Undercutting Under Perfect Competition

In my description of W1's use of pressure tactics to obtain a bargain with E1 that prevents the collusive sharing among employers to force W2 to undercut, I have not dealt with W2's decisions. For W1's use of pressure tactics to work, W2 must also refuse a trade with any one employer to point D of Figure 1(B) and instead offer the same bargain as W1, based on the same pressure tactics. The same goes for all workers who are added to the initial one.

Indeed, as long as one worker accepts to offer point D to an employer while another worker is left alone, that other worker will be pressured into undercutting as in the limit theorem. We are now getting close to the point at which my description of the exercise of pressure tactics might be argued to morph into monopoly. I want to acknowledge that the exercise of pressure tactics by competing workers has a few similarities with monopoly – or rather cartel – dynamics while resisting any conflation of the two phenomena. The operation of pressure rules still allows atomistic, non-colluding workers to make their own utility-maximizing decisions. These decisions extend to which pressure rules to use individually given other market actors' decisions about which rules to use as part of their competing.

I start with a scenario involving stringent assumptions and subsequently relax the assumptions one by one. Assume perfect information and no transaction costs, so that bargaining happens immediately without the need for any threat or negotiation to be carried out. That is, assume everyone knows in advance what legal powers workers have and what offers and threats workers can make. In such a context, no threat will have to be carried out, as all actors will be able to separate the credible from the uncredible ones.

Let us also assume for now that all the workers in Figure 1's labor market are satisfied with the quantity of labor units hired from each of them at point D. This could be because of an industry practice of sharing work equally between workers.[116] Alternatively, it could be that any worker unemployed at point D calculates that they will be able to be hired at some point in the future and would benefit from wages being higher from now on.[117]

Finally, I assume that the wage increase obtained by moving from point F to point D in Figure 1 does not make potential workers not currently participating in Figure 1's market want to enter the market

[115] Although a formal legal rule is likely to apply to more than one (labor) market, the socio-legal modification of the "law in action" described above is more likely to only change the range of permissible conduct in the relevant market, with the result that the impact will only be on the equilibrium outcome and not on the bounds of the possible outcomes. See *supra* note 57.

[116] The standard treatment of Edgeworth box competitive equilibrium I use here may be taken to assume this, by always placing all workers at the same point in the box.

[117] *See* ROBERT M. SOLOW, THE LABOR MARKET AS A SOCIAL INSTITUTION 45-47 (1992).

to be employed. This could be because wages are higher elsewhere already. It might also be the case that the economy is close to "full employment" so that many people earn a satisfying income elsewhere.

This idealized scenario helps us hone in on the core of the analytical issue of whether all workers would calculate it to be in their individualistic interest to exert the same pressure tactics as their colleagues and not "undercut" them. Recall that by not "undercutting," I specifically mean that each worker will react to employers' collusive limit-theorem sharing scheme by using pressure tactics to impose a wage increase sufficient to put all employers at points like O and D in Figure 1(G).

The core of this problem is that of the prisoner's dilemma as long used to analyze undercutting in the context of cartels. If the workers cooperate and exert the same pressure tactics, they collectively get a higher payoff than if any one of them defects. However, they each get a higher payoff by undercutting regardless of what the other person does,[118] creating the possibility of a Nash equilibrium whereby workers all calculate it to be in their best interest to undercut even though it makes them collectively worse off.

This simple reasoning has long been used as the basis for postulating the inherent or necessary instability of cartels, as if "competition" exerted a gravitational pull that could undo most cartels most of the time.[119] That said, there has also long been a body of scholarship that complexifies the discrete single-stage prisoner's dilemma game setting that underpins the conclusion that cartels are necessarily unstable.[120] This scholarship insists among other things on the fact that most economic interactions are repeated games where the threat of undercutting in the future can serve to incentivize mutual cooperation in the present.[121]

In making my claim that coordination of pressure tactics is an inherent feature of perfect competition, I rely on the latter of the two strands of scholarship just mentioned. That is, I propose to emphasize the capacity of markets actors to incentivize mutual cooperation through devices like repeated interactions[122] and the creation of social norms that disfavor defection.[123] Before I go any further, I want to stress that this view of the possibility of cartel-like coordination is also at the heart of the limit theorem itself, in that the collusive sharing of resources that forces undercutting is a cartel-like form

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118 E. N. BARRON, GAME THEORY: AN INTRODUCTION 118-19 (2013).

119 Harold Hotelling, *Stability in Competition*, 39 ECON. J. 41, 48 (1929); R. POSNER, ECONOMIC ANALYSIS OF LAW 208 (2d ed. 1977); ROBERT BORK, THE ANTITRUST PARADOX 195-96 (1978); George Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44, 44 (1964).

120 See e.g. Kai Andree, John S. Heywood, Mike Schwan and Zheng Wang, *A Spatial Model of Cartel Stability: The Influence of Production Cost Convexity*, 70:3 BULL. ECON. RSCH 298, 300 (2018); Oliver P. Heil, George S. Day & David J. Reibstein, *Signaling to Competitors*, *in* WHARTON ON DYNAMIC COMPETITIVE STRATEGY 277, 281 (George S. Day, David J. Ribstein, & Robert E. Gunther ed., 2005); Matsumura, T. and Matsushima, N. *Cartel Stability in a Delivered Pricing Oligopoly*, 86 J. ECON. 259, 259 (2005); Glenn Ellison, *Theories of Cartel Stability and the Joint Executive Committee*, 25:1 RAND J. ECON. 37, 38 (1994); W.A. Brock & J.A. Scheinkman, *Price-Setting Supergames with Capacity Constraints*, 52:3 REV. ECON. STUD. 371, 372 (1985); Edward J. Green & Robert H. Porter, *Noncooperative Collusion Under Imperfect Price Information*, 52:1 ECONOMETRICA 87, 88 (1984).

121 *Id.*

122 *Id.*

123 Elinor Ostrom, Roy Gardner, & James Walker, RULES, GAMES AND COMMON-POOL RESOURCES 36 (1994); SOLOW, THE LABOR MARKET AS A SOCIAL INSTITUTION, *supra* note 117, at 28-30.

of coordination, too.[124] I am therefore not trying to establish that cartel-like coordination is possible *only* on the side that is empowered by a set of legal rules, because the conventional account of the neutralization of the impact of favorable legal rules requires the *other* side to be able to engage in the very kind of coordination I am now asserting is possible in response.[125]

We are therefore dealing with cartel-like coordination dynamics *on both sides* at any given moment.[126] The possible outcomes do not range between two extremes that can be categorically distinguished; we are not dealing merely with a cartel steering the market from the competitive towards the monopoly outcome. Rather, the phenomenon we are faced with is that there are many different possible perfectly competitive points depending on each side's ability to coordinate their collective use of pressure tactics.

This focus on the intra-worker (and intra-employer) camp decision-making requires me to revisit my description of pressure rules. In Part I.B, I presented rules that govern the conduct of a single worker vis-à-vis a single employer. I then added subsequent pairs of worker-employer and assessed each actor's individual decision as to which pressure rules to use in their dealings with an actor on the other side of the market. But there are also rules that govern what workers can do to one another as they each decide on which terms to sell their labor to an employer. These rules become relevant as soon as workers come to different decisions as to which pressure rules to use. And different rules will allow different workers to impose their will on their fellow workers, leading to different outcomes along Figure 1's contract curve.

I am proposing that we apply the same "bundle of rights"[127] approach to interactions between workers that I applied above to worker-employer bargaining. As every worker decides which pressure tactics they will use in their individual bargaining with employers, other workers will be legally empowered to try to convince them of a particular course of action. But persuasion can be attempted in many different ways. Workers can question or debate their fellow workers[128] and adopt more or less "intimidating" attitudes while doing so.[129] Alternatively, they can be more active and use more or less hostile or physically assertive picket lines, or even publish a list of "scabs" to create psychological pressure on their fellow workers.[130] These are just a few examples of possible inter-worker conduct.

The strict confines of the limit theorem require that this kind of coordination (and pressuring) happen among a very great number of market actors, which makes the assumption of no transaction costs just

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[124] See *supra* notes 106-08 and accompanying text.

[125] E Roy Weintraub has long ago noted the stringent requirements for coordination to be feasible to such an extent that the limit theorem holds. See Weintraub, *supra* note 105, at 15.

[126] Following the standard treatment of the limit theorem, I have set up my analysis with legal rules thoroughly favoring one side. The analysis therefore focuses on how the disfavored side can cancel the effect of the legal rules. But the disfavored side always has access to some pressure tactics that are regulated by law, too.

[127] See *supra* notes 4 and 55-56.

[128] See the following discussion of union tactics to convince workers to band together to obtain more favorable terms from the employer: Cook, *supra* note 4, at 782.

[129] *See* Haggai Hurvitz, *American Labor Law and the Doctrine of Entrepreneurial Property Rights: Boycotts, Courts, and the Juridical Reorientation of 1886-1896*, 8 IND. REL. L.J. 307, 317 (1986).

[130] On some of the legal rules about what workers can do to each other at the picket line and to shame strike-breakers, see Walker v. Cronin, 107 Mass. 555 (1871); Edwin E. Witte, *Early American Labor Cases*, 35 YALE L.J. 825, 828 (1926).

as essential in my revised treatment of the limit theorem as in the traditional version.[131] Under the assumption of perfect information and no transaction costs, "exerting" pressure tactics has no cost to the workers and happens instantly. A worker only has to threaten emotional harm or a nuisance say through picketing, and the higher wage of Figure 1(G) will be secured. This stylized setting is the surest way to get at the irreducible effect of legal rules in changing the competitive outcome that obtains. In particular, the social planner or lawmaker has to choose whether to allow more or less intense pressure towards one's fellow workers, and that decision will largely determine the level of bargaining power workers as a whole will have.

If we abandon the assumption of an instant bargain enabled by perfect information and no transaction costs, the individual utility-maximizing calculus can be expected to be more complex. Workers might have to concert to a greater extent to figure out what they can legally do to employers, and what the employers can do in return, as well as just what wage any given employer could be forced to pay.[132] Threats might have to be carried out to be established as credible, imposing a cost in money, time, and physical or emotional exertion. Different workers may well value these immediate costs and the future benefits differently, leading some to want to forego higher wages to avoid the immediate costs.

Making the outcome uncertain will also make a worker's degree of risk aversion a relevant decision criterion. Not to mention that some workers may be ideologically opposed to unions or psychologically averse to confrontation, making them reluctant to use their power under pressure rules even when the monetary cost-benefit calculus is positive to an outside observer. Note that for now I am only considering undercutting on the part of workers who would also be hired at point D's higher wages, so that the impetus behind the decision to undercut is not getting a job but rather avoiding the costs of securing the benefits of exercising the powers granted by pressure rules.

When each worker values different courses of action differently, there is always the risk that allowing more pressure on the part of militant workers will make the less militant ones worse off even though their wages go up. These workers might value harmonious work relations so much that they would be willing to forego higher wages to preserve them. The social planner's adoption of legal rules to empower more militant workers to force their fellow workers to obtain higher wages might then be accurately described as a form of paternalism, i.e. as a judgement that the less militant workers *should* want higher wages even at the cost of some interpersonal conflict.[133]

I now relax the assumption that no worker loses their job if the market equilibrium goes from point F to point D. This could be because the workers in the market are unable to equally split the total sales of labor. I also relax the assumption that no worker would want to enter this market. This could be because the market in question has higher wages than other markets and/or because we are not at "full employment," and some people would prefer working than not working. Under these more

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131 On the importance of transaction costs in enabling coordination in an n-player competitive prisoner's dilemma, see Peter Huber, *Competition, Conglomerates, and the Evolution of Cooperation,* 93 YALE L.J. 1147, 1158 (1984). On the centrality of the requirement of low transaction costs for the limit theorem to hold, see Weintraub, *supra* note 105, at 15.

132 On the costs and benefits of strikes – and by extension of the autonomous exercise of pressure tactics by all workers at once under atomistic competition – when information is imperfect, see GEORGE BORJAS, LABOR ECONOMICS 403 (2d ed. 2000).

133 See similarly Kennedy, *Distributive and Paternalist Motives*, *supra* note 32, at 574-75.

realistic conditions, my analysis of pressure rules comes the closest to looking like the exercise of monopoly power, though I insist I am merely describing the normal workings of perfect competition under different legal rules.

In this scenario, the workers individually deciding to all bargain to point D – by pushing employers to bargain as if starting from Figure 1(F)'s point N – will face undercutters by hypothesis happy to take a job at a lower wage than at point D. The pressure rules that determine permissible inter-worker conduct will thus not only determine how much money goes to workers who would otherwise all have jobs. Now, picketing and scab-shaming entails depriving fellow workers of jobs so that the insiders can keep their higher wages. This is the part of the analysis I acknowledge looks most like monopoly or cartelization. But this phenomenon of market actors having an interest in keeping outsiders out is a feature of any competitive market. In the real world, these market access possibilities are determined by things like transaction and mobility costs, ignorance of existing outside opportunities, as well as the segmentation of the workforce by "fit" with an employer and firm-specific skills that limit the flow of outsiders into any given labor market.[134] In perfectly competitive markets without these barriers and market failures, as well as in the real world, there are also always pressure rules that will contribute to determining how easily outsiders can enter a market and share in the fruits of worker-employer pressure rules.

In choosing legal rules that will determine the outcome of workers bargaining atomistically with employers, the social planner must also choose rules that will govern how easily a potentially infinite number of outsiders can enter the market. Ultimately, I claim this is not a form of monopoly power but an inherent feature of perfect competition. Legal rules will shape the competitive outcome that obtains in any given context both by determining the bargaining power of insiders vis-à-vis employers and by determining the extent to which insiders can keep outsiders out or get them to exert the same level of bargaining power as them.

V. Some Implications for Collective Bargaining and Redistributive Policy

The foregoing analysis may be seen to be very theoretical. It rests on heroic assumptions about transaction costs, and modifying tort rules related to contractual bargaining is not a frequently used redistributive policy tool for that very reason. In this section, I explore the implications of the analysis conducted so far for the economics of labor unions. I show that the multiple equilibria modeled in previous sections are also at the heart of recent work of mine – and long-standing work by labor economists – on a specific kind of collective bargaining that is a promising way to go about redistributing income in the real world.

A. A Brief Presentation of Price-Quantity Collective Bargaining

There has long been a strand of labor economics that acknowledges the possibility of bargaining along a *contract curve* as distinct from the labor demand curve, allowing the parties to choose among many equally efficient outcomes that distribute the surplus between them without negatively affecting

[134] On these phenomena, see Ronald Bachmann, Gökay Demir & Hanna Frings, *Labor Market Polarization, Job Tasks and Monopsony Power*, 57 J. HUM. RES. S11, S14 (2021); Carl Shapiro & Joseph Stiglitz, *Equilibrium Unemployment as a Worker Discipline Device*, 74 AM. ECON. REV. 433, 437 (1984).

production.[135] This kind of contracting has been called the "price-quantity type of monopolistic trading" by Wassily Leontief,[136] "efficient bargaining" by Ian McDonald and Robert Solow,[137] and "all or none" bargaining by Milton Friedman.[138] The central feature of this kind of bargaining, as my preferred terms "price-quantity" indicate, is that the union bargains on both wages and labor quantity (employment) at once.

While labor economists have long known about price-quantity bargaining, they have tended to reduce it to a curiosity or marginal phenomenon. In particular, almost all work on price-quantity bargaining assumes that this kind of bargaining is only possible when competition is imperfect on the employer side, in addition to the worker side being monopolized by a union.[139] Other work assumes that this kind of collective bargaining is simply too hard to achieve and sustain.[140]

In a recent Article,[141] I retrieve the model of price-quantity bargaining from its neglect and argue that we should strive to reform labor laws to achieve that kind of bargaining because of its desirable distributive properties. I also show that price-quantity bargaining is very much compatible with competition on the employer side and is not reserved for bilateral monopoly settings. What follows is a summary of my work developing price-quantity bargaining models and an extension of that work as it relates to this Article's model of multiple perfectly competitive equilibria.

Price-quantity bargaining, whereby the union raises wages but insists that employers maintain a higher employment level than they would otherwise want to maintain, can lead to many different labor market outcomes. It can involve bargaining along a contract curve that is downward-sloping, upward-sloping, or straight. The simplest case is the latter, as represented in the following graph:

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135 Wassily Leontief, *The Pure Theory of the Guaranteed Annual Wage Contract*, 54:1 J. POL. ECON. 76, 78 (1946); Ian McDonald & Robert Solow, *Wage Bargaining and Employment*, 71:5 AM. ECON. REV. 896, 900 (1981).
136 Leontief, *id.* at 79.
137 McDonald & Solow, *supra* note 135, at 904.
138 MILTON FRIEDMAN, PRICE THEORY: A PROVISIONAL TEXT 15 (1962).
139 *See, e.g.*, Richard Layard & Stephen J. Nickell, *Is Unemployment Lower if Unions Bargain about Jobs?*, 50 Q.J. ECON. 773, 775 (1990); Brian Chezum & John Garen, *A Model of Monopoly and 'Efficient' Unions with Endogenous Union Coverage: Positive and Normative Implications*, 17 J. LAB. RSCH. 497, 504 (1996); George Johnson, *Work Rules, Featherbedding, and Pareto-Optimal Union-Management Bargaining*, 8 J. LAB. ECON. S237, S238 (1990); PETER SLOANE, PAUL LATREILLE, NIGEL O'LEARY, MODERN LABOUR ECONOMICS 185 (2013).
140 See *infra* Part IV.B.
141 McDougall, *Labor Union Renewal*, *supra* note 19.

FIGURE 2: LABOR MARKET, PRICE-QUANTITY COLLECTIVE BARGAINING

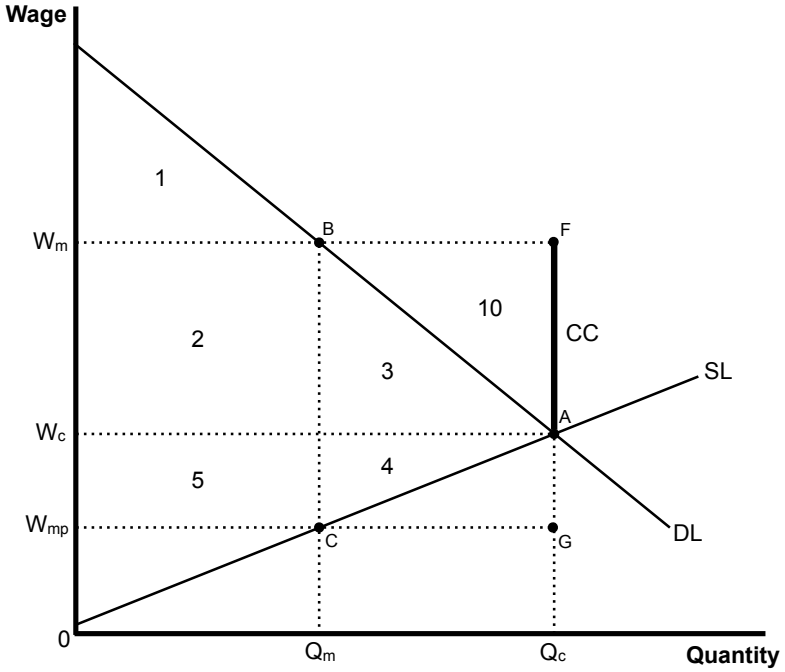

Figure 2 has a non-union outcome A where the supply of labor SL and the demand for labor DL intersect, as well as a "monopoly" union outcome B.[142] The less conventional element is the vertical bold line CC, the contract curve, to which I return in a moment. Without the contract curve, Figure 2 would be a perfectly conventional "monopoly" graph showing that the labor union in question reduces employment (and therefore output) as it raises wages up to point B.

It is well known that the employment-reducing scenario of point B is inefficient; it causes deadweight loss of areas 3 and 4 in order to bring about the transfer of area 2.[143] From a pro-worker distributive standpoint rather than a total-welfare-maximizing one, point B is suboptimal as well, as some workers are disfavored by the wage gain accruing to those workers who keep their jobs at Qm. These disfavored workers are those who would have provided the units between Qm and Qc but instead lost their jobs. When they move to their next best alternative labor market, the laid-off workers increase labor supply along an unchanged labor demand curve and lower wages in the other market. This means that workers who were previously in the other market are harmed as well.[144]

The union income redistribution therefore harms some of its intended beneficiaries, in both the union and non-union sectors. A union wage gain that has these effects may well be inequality-reducing

[142] The use of the term "monopoly" here refers to the so-called model of "monopoly unionism," as distinct from unionism of an "efficient" or "contract curve" variety which I describe shortly. See BORJAS, *supra* note 132, at 402.
[143] See the sources cited *supra* note 16.
[144] STEPHEN SMITH, LABOUR ECONOMICS 231 (2d ed. 2003); PETER DOERINGER & MICHAEL PIORE, INTERNAL LABOR MARKETS AND MANPOWER ANALYSIS 173-75 (1971); Lawrence Kahn, *The Effect of Unions on the Earnings of Nonunion Workers*, 31:2 IND. & LAB. REL. REV. 205, 216 (1978); David Neumark & Michael Wachter, *Union Effects on Nonunion Wages: Evidence from Panel Data on Industries and Cities*, 49:1 IND. & LAB. REL. REV. 20, 35 (1995).

overall and therefore normatively desirable, even though it harms *some* workers in the process of enriching other workers. Still, this outcome, if and when it occurs as at point B, is in part counterproductive from the standpoint of the distributive goal presupposed by this entire discussion: enriching the workers on the supply side of Figure 2.[145]

By contrast with point B, at all points along the contract curve CC, the union can obtain higher wages with no employment reduction. At the outermost point F, the union will have secured a wage bill of Wm times Qc, which is equal to the sum of the maximum wage employers would be willing to pay for each of the labor units bought by employers absent unions. The visual proof of this is that triangle 10 is identical to triangle 1, so that the surface 2-3-10, acquired by the union bargaining to point F, is identical to the surface 1-2-3.[146] The distribution of the surplus at point F is the same as if the union could engage in "perfect price discrimination"[147] of labor, i.e. charge a different wage for every labor unit all along the labor demand curve.

Figure 2 represents an entire labor market (and therefore an industry or sector), which under competitive conditions is composed of many employers on the buying side and distributed along the industry labor demand curve. In competitive conditions, the outcome of point F can be achieved only through sectoral bargaining, just as is true of the simple "monopoly" outcome point B. Indeed, if a union covering a single employer among many tried to reach either point B or point F, it would be outcompeted on product and factor markets by the other firms in the industry.[148]

Moreover, for point F to be sustainable as a single industry price and quantity, it must be the case that each firm is at a point like F on its *individual* labor demand curve (on a graph that would be identical to Figure 2 except for the fact that the demand curve would be that of a single firm).[149] The sum of all the firms' price-quantity packages needs to be Figure 2's point F. As long as each firm is at a point like F in relation to its own labor demand curve, there is no need to have further price (i.e. wage) discrimination *in the labor market*. In particular, the union does not need to engage in "perfect" wage discrimination (charge a different wage for each labor unit sold in the industry). As just noted, at point F, the total wage bill extracted from all the firms is the same *as if* the union could engage in perfect wage discrimination. But if a single firm buys many units of labor, as is always the case, each firm can be charged a single wage and forced to spread the cost of a bargain like point F over all the units of

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145 I do not propose to discuss here arguments for and against the adoption of an egalitarian social welfare function or political philosophy that would ground this distributive goal. My analysis is positive, not normative; it has to do with the effectiveness of certain policy tools for the pursuit of exogenously given distributive goals, in this case a pro-worker one.

146 As we move to points below F on the curve CC, the union cedes to employers part of areas 2-3-10, all the way down to point A where the union has lost all the surplus under the labor demand curve (but above the competitive Wc wage line). Point F thus represents the maximum surplus the union can appropriate, assuming it has total bargaining power. Other intermediary outcomes between A and F are possible.

147 Hal Varian, *Price Discrimination*, *in* HANDBOOK OF INDUSTRIAL ORGANIZATION 587, 601 (Richard Schmalensee & Robert Willig eds., 1989).

148 *See* RONALD G. EHRENBERG & ROBERT S. SMITH, MODERN LABOR ECONOMICS 69 (11th ed. 2012).

149 *Id.* A firm will not go to point F in relation to its individual labor demand curve on its own, i.e. if the union fixes only wages and lets the firm choose quantity. The union therefore needs to offer each firm a predetermined package of Qc units at Wm per unit, hence the occasional description of this kind of bargaining as "all or none." *See e.g.* FRIEDMAN, *supra* note 138, at 15.

labor it buys. Labor costs at both the firm and industry level are thus at the highest they can be without inducing some employers to forego production. If the industry is monopsonized, Figure 2 is at once the industry and the single-firm graph, as there is one firm in the industry.

The firms' ability to hand over the surplus area under their labor demand curve will be contingent on their ability to secure that surplus from the actors to which it belongs. Whose surplus figures under the labor demand curve depends on the four Hicks-Marshall "laws of derived demand" that determine the elasticity of demand for a factor of production.[150] These four laws are that demand for a factor is less elastic (i.e., closer to being vertical), (1) the less elastic the demand for the final product is, (2) the lower the elasticity of substitution between the factor in question and other factors of production is, (3) the smaller the share of total production costs dedicated to the factor in question is, and (4) the less elastic the supply of other factors of production is.[151] Identifying the causes of labor demand inelasticity – i.e. of labor demand steepness – points us to the origins of the "surplus" under the labor demand curve which is the source of union wage gains.

For reasons I more fully explore elsewhere, laws two and three enable or accentuate inelasticity stemming from the other two laws but are not sources of inelasticity in their own right.[152] We can therefore focus on laws one and four, which have to do respectively with product demand and other-factor supply inelasticity. The two corresponding sources of union wage gains are (1) consumers and (2) other (i.e., nonlabor) factors of production, which we can call "capital" following the standard textbook treatment of two-factor production.[153] The catch-all term capital can refer to the money of investors or to the labor (the "human capital") of managers used in conjunction with the labor of low-wage workers to make a product.

Taking the case of consumers, we can visualize the requirements of price-quantity bargaining by considering that the firms in the unionized sector have a graph like Figure 2 in the product market, on which they are the suppliers. In that market, output must be left intact while the price of the consumer good is raised in such a way as to appropriate an amount of surplus just like Figure 2's areas 2-3-10. It is very likely, however, that the consumers in a product market graph like Figure 2 each buy one – or not many more than one – unit of the good. If that is the case, the firms have to charge a

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[150] JOHN R. HICKS, THE THEORY OF WAGES 241-42 (2d ed. 1963); ALFRED MARSHALL, PRINCIPLES OF ECONOMICS 518–38 (8th ed. 1923). *See also* EHRENBERG & SMITH, *supra* note 148, at 36.

[151] *Id.*

[152] A higher elasticity of substitution, meaning that the prevailing state of technology makes it easier to switch labor for capital without changing output, impedes some of the wage gains that would be available if such substitution were impossible. But the elasticity of substitution does not itself create potential wage gains. Indeed, if the elasticity of substitution is zero, meaning that there is only one possible ratio of labor quantity to capital quantity for each level of output, the shape of the labor demand curve will be entirely determined by other laws of derived demand, in particular product demand and other-factor supply elasticity. Similarly, a smaller labor share of total production costs is likely to make labor demand less elastic and enable larger wage gains than if labor were the only factor. These wage gains, however, must come from somewhere else, i.e. from another law of derived demand – either product demand inelasticity (consumers) or other-factor supply inelasticity ("capital" as defined below). *See* McDougall, *Labor Union Renewal*, *supra* note 19.

[153] *E.g.*, DAVID M. KREPS, A COURSE IN MICROECONOMIC THEORY 250 (1990); VARIAN, *supra* note 83, at 323.

different price for different units of the good, i.e. engage in price discrimination.[154] I leave for another time the question of whether price discrimination is always necessary on capital or management markets; suffice it to say here that it may well sometimes be.[155]

B. Price-Quantity Collective Bargaining as the Equivalent of Pressure Rules and as a Promising Distributive Avenue

Having presented price-quantity collective bargaining and its distributive advantages over the standard output-reducing labor unionism, I now describe the close ties between that kind of collective bargaining and the model of multiple perfectly competitive equilibria developed in Parts II and III. I then deal with a few objections to the feasibility of price-quantity bargaining that would purport to disqualify it as a model for income redistribution towards workers. If it were the case that price-quantity bargaining is seldom attainable in the real world, its close homology with the model of perfect competition presented above would be much less significant. In this Part, I show both that this homology exists and that it has important implications for policy because price-quantity bargaining is far from unattainable.

The first thing to note is that the graphical apparatus of Figure 1 is directly based on that used by Wassily Leontief in his classic article describing price-quantity collective bargaining.[156] This similarity in the graphical treatment should make it easy for any reader who picks up Leontief's article to grasp the analogy I make between price-quantity collective bargaining and the way in which pressure rules work under atomistic competition. Figure 1's point D is the equivalent of Figure 2's point F, with the following caveat.

The Edgeworth box aficionado may have noticed that the contract curve drawn in Figure 1 would be downward-sloping in price-quantity space – and not straight like the contract curve of Figure 2. That is, the contract curve of Figure 1 leads to a reduction of the number of labor units purchased as we move towards the most pro-worker possible outcome, point D. In order to track Figure 2 more closely, the contract curve in Figure 1 would have needed to be a vertical line in the Edgeworth box. The only reason I chose the diagonal shape in Figures 2(a) to (g) is that it makes it easier to visualize the recontracting dynamics I have presented. I refer the reader to other work of mine where I show that the shape of the contract curve that ultimately obtains (straight, upward-sloping, or downward-sloping above the competitive point) is a function of institutional design on the worker side; bargaining structures more inclusive of "outsiders" will lead to bargaining agendas that value more employment, even at the cost of renouncing some wage gains, and contract curves will slope more to the right.[157]

Recall that, even though I have just shown that both types of graphs (Edgeworth boxes and supply-demand diagrams) can be used to model price-quantity bargaining, in this Article I have used them to model two different phenomena. The Edgeworth box is more useful to model the *attainment* of perfect

[154] They cannot rely on the method described above for the labor market, whereby each buyer – in the labor market this meant each firm or employer – is forced to spread the uniform price increase over the many units it buys. Here, the union therefore needs to force the firms to price discriminate among consumers.
[155] See McDougall, *Labor Union Renewal*, *supra* note 19.
[156] Leontief, *supra* note 135, at 77.
[157] McDougall, *Labor Union Renewal*, *supra* note 19.

competition because, under conditions of homogeneity on the worker and employer side, it can be used to represent the transactions of many workers and employers at once. By contrast, the supply-demand diagram can only be used to represent the price-quantity combinations that ultimately obtain.

Still, thinking about the ramifications of price-quantity collective bargaining in supply-demand space can help shed light on some preconditions for the attainment of various perfectly competitive equilibra through the varying of private law rules. In particular, the laws of derived demand and the repercussions of higher wages on consumer and capital markets are absolutely part of the picture of Figures 2(a) to 2(g), even though I have not discussed them in Parts II and III. There is therefore an added dimension of coordination to the perfectly competitive contracting described here. Not only do workers and employers recontract by using legally created bargaining power, but employers must in turn coordinate their bargaining with consumers and capital suppliers. If consumers and capital suppliers are not perfectly homogeneous like the workers and employers of Figure 1, this coordination could be quite hard and require price discrimination on consumer and factor markets. The absence of this precondition for the attainment of different competitive outcomes might well prevent any wage gain of the kind modeled in Figures 2(a) to 2(g); legal rules giving workers the power to impose economic or psychological costs on employers are not useful if employers are simply unable to coordinate to take income from consumers or capital suppliers and give it to consumers.

This discussion takes me to the issue, much discussed by labor economists, of the feasibility of price-quantity bargaining (the feasibility of varying private law rules to attain different perfectly competitive outcomes is a non-issue because perfect competition does not exist as such). The feasibility of price-quantity bargaining is most often said to be jeopardized by *changes* in market conditions, including consumer demand and factor supply. But even before we hypothesize a change in market conditions, the previous paragraph suggests that discovering *existing* market conditions, including consumers' willingness to pay, can sometimes be a significant obstacle to price-quantity bargaining.

Imperfect information, i.e. the normal state of the world, can complicate price discrimination and prevent the attainment of "first degree" or perfect price discrimination, i.e. the charging of a different price for every unit sold. However, firms can often achieve price discrimination in its less demanding second and third-degree kinds by splitting consumers into groups each charged their own price, for instance through two-part pricing, bundling, and discounts.[158] Moreover, digital technologies are said to have enabled ever more precise price discrimination including of a first-degree kind.[159] These points already show that we can expect the attainment of price discrimination not to be a significant obstacle at least in some markets. In recent work, I show that more concentrated product and labor markets can also facilitate price discrimination and the attainment of price-quantity collective bargaining.[160]

The literature has insisted more on the impact of price-quantity bargaining when there are *changes* in supply and demand conditions or production technology. Many scholars have concluded that the possibility of these changes makes the combined fixing of wages and employment through price-

[158] For introductory textbook analyses see WALTER NICHOLSON & CHRISTOPHER SNYDER, INTERMEDIATE MICROECONOMICS AND ITS APPLICATIONS 545-46 (11th ed. 2010); VARIAN, *supra* note 83, at 448-59.
[159] Ramsi Woodcock, *Big Data, Price Discrimination, and Antitrust*, 68 HASTINGS L.J. 1371, 1386-91 (2017).
[160] McDougall, *Worker Power and Antimonopoly Revisited*, *supra* note 33.

quantity bargaining impossible because it would be too rigid.[161] I have argued elsewhere in detail that the prospect of market changes does not itself make price-quantity bargaining impossible.[162] First, parties can renegotiate any collective agreement that becomes outdated because of lower product demand or technological change. Second, there exist many contractual devices parties can use (and which unions have used in the past) to fix labor price and quantity as a share of output, allowing for automatic labor-market adjustment when product demand drops. These devices include capital/labor *ratios*[163] and profit sharing (effectively a wage/output ratio).[164]

If the prospect of market changes causes any trouble for price-quantity bargaining, it must be that, rather than binding firms to uneconomic deals, it gives firms the possibility of *reneging* on the deal to go back to the labor demand curve, by either lowering (or not raising) wages or by cutting (or not increasing) employment.[165] The problem here is not that the initial deal is made impossible because it constrains firms too much, but rather that the deal does *not* constrain firms. This would be a problem even absent a change in market conditions, although the possibility of there being such a change – and the impossibility for the union to know whether there has been one because of imperfect information – is what in this hypothesis enables the firms to defect from the initial deal undetected. That said, many contractual and legislative devices can help unions overcome this *opportunism* on the part of employers. Seniority wages and layoffs are one; laws – like German codetermination rules – which subject layoffs to administrative approval upon request from worker organizations are another.[166]

The practicability of price-quantity collective bargaining is a vast area of work in labor economics that intersects with scholarship on other institutional mechanisms that can similarly improve the effectiveness of redistribution through labor unionism. These other mechanisms include work sharing,[167] cross-sectoral collective bargaining,[168] and the fostering of worker "voice" and dispute resolution.[169] I cannot do justice to any of these bodies of work here. With the brief introduction offered in this Part, I only meant to give a flavor of the homology between price-quantity collective bargaining and the multiple equilibria legal rules create under perfect competition. The literature on

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161 On changes in product demand imperiling price-quantity bargaining, see Robert Hall & David Lilien, *Efficient Wage Bargains Under Uncertain Supply and Demand*, 69:6 AM. ECON. REV. 868, 870 (1979); JOHN PENCAVEL, LABOR MARKETS AND TRADE UNIONISM 132 (1991). On changes in production technology, see Carliss Baldwin, *Productivity and Labor Unions: An Application of the Theory of Self-enforcing Contracts*, 56 J. BUS. 155, 173 (1983); John Addison & Barry Hirsch, *Union Effects on Productivity, Profits, and Growth: Has the Long Run Arrived?*, 7:1 J. LAB. ECON. 72, 96 (1989).

162 See McDougall, *Labor Union Renewal*, *supra* note 19.

163 Norman J. Simler, *The Economics of Featherbedding*, 16 IND. & LAB. REL. REV. 111, 112 (1962).

164 Simon Anderson & Michael Devereux, *Profit Sharing and Optimal Labour Contracts*, 22 CAN. J. ECON. 425, 426 (1989); Matti Pohjola, *Profit Sharing, Collective Bargaining and Employment*, 143 J. INST. & THEORETICAL ECON. 334, 335 (1987).

165 This possibility is contemplated in PENCAVEL, *supra* note 161, at 132; Andrew Clark, *Efficient Bargains and the MacDonald-Solow Conjecture*, 8 J. LAB. ECON. 502, 506–07 (1990).

166 McDougall, *Labor Union Renewal*, *supra* note 19.

167 Mikal Skuterud, *Identifying the Potential of Work-Sharing as a Job-Creation Strategy*, 25:2 J. LAB. ECON. 265 (2007); Jennifer Hunt, *Has Work-Sharing Worked in Germany?*, 114:1 Q. J. ECON. 117, 122 (1999).

168 Lars Calmfors & John Driffil, *Bargaining Structure, Corporatism, and Macroeconomic Performance*, 6 ECON. POL'Y 13, 43 (1988); Pascal McDougall, *European Cross-Sectoral Collective Bargaining as Post-Crisis Social Policy*, 29 IND. J. GLOB. LEGAL STUD. 163 (2021).

169 FREEMAN & MEDOFF, *supra* note 21, at 14.

price-quantity collective bargaining strengthens the relevance and import of the stylized analysis I have presented in this Article by giving us a much more practicable avenue for reforming markets. Price-quantity collective bargaining can allow us to reach one of the equilibria along the contract curve that could have been the perfectly competitive one under alternative legal rules.

Conclusion

In this Article, I have developed a model of the way in which legal rules can influence the allocation of resources and the distribution of income even under perfect competition as traditionally defined by economists. I have sought to contribute to an intellectual tradition I call legal institutionalism and trace back to legal economists like Robert Hale and John Commons. Legal institutionalism, as I see it, is built around the core claim that legal rules are central determinants of the distribution of income; they are the "foundations of capitalism" in Commons' memorable phrase.[170]

In response to a longstanding vagueness within legal institutionalism as to the precise ways in which legal rules can shape bargaining power under competition, I have proposed a distinction between two kinds of legal rules: compulsory terms and pressure rules. Compulsory terms are rules that make changes to the employment relationship that are valued by one side and costly to the other side. Compulsory terms, because they concern aspects other than labor price and quantity and their costs and benefits are amenable to being factored into labor price and quantity, are generally not redistributive per se. They benefit workers who would have been willing to accept wage reductions larger than the cost of the measures to employers. Pressure rules, by contrast, are purely redistributive; they allow one side to inflict costs on the other side during negotiations to extract a more advantageous labor price and/or quantity.

Pressure rules, including those related to picketing, boycotting, nuisance, and defamation, are at the heart of the modification I have proposed to the standard model of perfect competition. By adding a move to the standard perfect competition sequence whereby a coalition isolates one actor on the other side to provoke undercutting, I have shown that no group of actors is bound to be inevitably constrained to undercut one another down to a single outcome. Pressure tactics are always available to both sides, and the perfectly competitive outcome will be different depending on what legal rights end up being exercised in the heat of bargaining. The locus of the many outcomes that could be the perfectly competitive one when different pressure tactics are exercised is the famous contract curve of economic textbooks.

The same contract curve is also at the heart of a separate literature on price-quantity collective bargaining, which I have argued can be a more practical way to steer markets towards one of the many possible competitive outcomes modeled here. Indeed, under price-quantity bargaining, labor unions – and/or monopsonistic firm – do not behave as quantity-reducing monopolies but instead reach outcomes that are efficient in the traditional sense of Pareto optimality. Monopolization then merely serves to reduce transaction costs to steer labor price/quantity more easily towards outcomes that would be attainable in perfect competition.

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[170] COMMONS, LEGAL FOUNDATIONS OF CAPITALISM, *supra* note 6.

In this Article, I have wholeheartedly embraced analytical tools clearly associated with "neoclassical" economics. I have thereby gone against a strong tendency within institutionalist and/or progressive economics of showing contempt for neoclassicism and sympathy for classical economics at least of the Ricardian and Marxist variety.[171] Unlike many of my peers, I see tremendous progressive potential in the ideas that crystallized in mainstream welfare economics in the post-war period in the wake of the discovery of the second welfare theorem. During that period, many economists affirmed that there is an infinity of efficient allocations of resources, one for every possible distribution of income.[172] It is not entirely clear to me where that idea originated,[173] but at least by the post-war period, mainstream neoclassical economists had given themselves the tools to move away from J.B. Clark's notion that competition ensures that "what a social class gets is […] what it contributes to the general output of industry."[174] By the same token, mainstream neoclassical economists had also given themselves the tools to move away from Ricardo and Marx's theories of wages, which can be understood as positing that population growth and/or unemployment prevents wages from rising above the level fixed by a perfectly elastic labor supply curve positioned at subsistence wage levels.[175]

Exactly how far we should take the post-war neoclassicals to have moved away from early marginalism's (and classical economics') notion that supply and demand inevitably lead to low wages depends on what we see the neoclassicals has having done with the multiple equilibria insight. I would say that they often did not do much with that insight, largely because the only mechanism envisioned to enable the traveling from one perfectly competitive outcome to another was lump sum taxes – a tool intrinsically incapable of being used for egalitarian ends.[176] Today, the analytical point that efficiency and/or perfect competition is compatible with all distributions of income is still sometimes voiced,[177] usually closely followed by caveats that temper the radical potential of that idea.[178] It would

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171 *See e.g.* UNDERSTANDING 'CLASSICAL' ECONOMICS: STUDIES IN LONG PERIOD THEORY (Heinz D. Kurz, Neri Salvadori, eds. 2002); Donald J. Harris, *A Post-Mortem on the Neoclassical 'Parable'*, *in* GROWTH, PROFITS, AND PROPERTY 43, 45 (E. J. Nell ed. 1980); JOAN ROBINSON, ECONOMIC HERESIES; SOME OLD-FASHIONED QUESTIONS IN ECONOMIC THEORY (1971); Amit Bhaduri, *On the Significance of Recent Controversies on Capital Theory : A Marxian View*, 79 ECON. J. 532 (1969); ANWAR SHAIKH, CAPITALISM: COMPETITION, CONFLICT, CRISES 365 (Oxford University Press, 2016).

172 Francis M. Bator, *The Simple Analytics of Welfare Maximization*, 47(1) AM. ECON. REV. 22, 35 (1957); IAN M.D. LITTLE, A CRITIQUE OF WELFARE ECONOMICS 35 (1950); Ezra J. Mishan, *A Survey of Welfare Economics, 1939-59*, 70 ECON. J. 197, 206 (1960).

173 Vilfredo Pareto arguably anticipated the idea as early as 1906 when he proposed that the "problem of distribution" could at least in theory be solved independently of the "production problem," whereby a socialist state could redistribute income and organize production to reach an outcome "as if it were carried out under free competition." VILFREDO PARETO, MANUAL OF POLITICAL ECONOMY 184 (1906) (Aldo Montesano et al., eds. 2014).

174 John B. Clark, *Distribution as Determined by a Law of Rent*, 5:3 Q. J. ECON. 289, 312 (1891).

175 On this interpretation of Ricardo and Marx, see Nicholas Kaldor, *Alternative Theories of Distribution*, 23:2 REV. ECON. STUD. 83, 85-87 (1955 - 1956). *See similarly* JOSEPH SCHUMPETER, HISTORY OF ECONOMIC ANALYSIS 920-21 (1954).

176 As soon as a tax applies differently to the rich and the poor, it ceases to be lump sum. See *infra* note 178.

177 MAS-COLLEL, WHINSTON & GREEN, *supra* note 83, at 555-56; KAPLOW & SHAVELL, *supra* note 56, at 24.

178 MAS-COLLEL, WHINSTON & GREEN, *id.* at 665-66 (arguing that, because lump sum taxes are seldom usable as a redistributive mechanism, the second welfare theorem loses much of its policy relevance); KAPLOW & SHAVELL, *id.* at 32 (stating that efficiency analysis can often proceed while ignoring distribution because "price adjustments" often cancel any intended distributive effect).

therefore be more accurate to say that the post-war neoclassical economists planted the seeds of a very subversive idea without fully developing it.

While this Article has drawn on neoclassical graphs and methods, it has very few of the characteristics denounced by institutionalist or heterodox critics of neoclassicism. There is no systematic inverse relationship between factor price and quantity here;[179] the contract curve of pressure rules and of price-quantity collective bargaining can be straight or upward-sloping. Factor prices are not a function of "relative scarcity";[180] they are indeed grounded in "differing power and social relationships in production"[181] as constituted by legal rules. And given how much Ricardo and Marx[182] – and other seminal institutionalist economists like Robert Hale and Hyman Minsky[183]– themselves used graphs and/or other concepts now associated with "neoclassical" static microeconomics, perhaps the hybrid analytical moves proposed in this Article are not so outlandish after all.

[179] Donald J. Harris, *Capital, Distribution, and the Aggregate Production Function*, 63 AM. ECON. REV. 100, 100 (1973).
[180] *Id.*
[181] Avi J. Cohen & G. C. Harcourt, *Retrospectives: Whatever Happened to the Cambridge Capital Theory Controversies?*, 17:1 J. ECON. PERSP. 199, 208 (2003). *See also* BEN SELIGMAN, MAIN CURRENTS IN MODERN ECONOMICS 420 (1962) (proposing a view in which income distribution is a function of "human actions" and not the "physical elements" emphasized by marginal productivity theory).
[182] See *supra* note 175.
[183] See Robert Hale, *Economic Theory and the Statesman*, in THE TREND OF ECONOMICS 191, 202 (R. Tugwell, ed., 1923); HYMAN P. MINSKY, JOHN MAYNARD KEYNES 106 (1975).