

EMPOWERING MARKET REGULATION OF AGRICULTURAL ANIMAL WELFARE THROUGH PRODUCT LABELING

By
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In many Western nations, rising public concern about the welfare of agricultural animals is reflected in the adoption of direct regulatory standards governing the treatment of these animals. The United States has taken a different path, tending to rely on a “market-regulation” approach whereby consumers express their desire for specific welfare practices through their purchasing decisions. This Article explores the failure of market regulation and the welfare-preference paradox posed by consumers who express a strong preference for improved animal welfare in theory, but who simultaneously fail to demand heightened welfare standards in practice. It argues that market regulation is failing in this country because current animal-welfare labeling does not clearly or credibly disclose to consumers the actual treatment of agricultural animals. As a corollary, effective market regulation of agricultural animal welfare could be empowered simply by improving current animal-welfare labeling practices.

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I. INTRODUCTION

Particularly in recent decades, the welfare of agricultural animals has become an issue of growing social salience. In many Western nations, rising public concern about the treatment of agricultural animals has resulted in the adoption of laws governing the treatment of animals. The United States (U.S.) has taken a different path, tending to rely on a “market-regulation” approach to the provision of animal welfare. Put simply, the market-regulation approach assumes that consumers will express their preferences for agricultural animal welfare in their purchasing decisions, thereby incentivizing producers to adopt desired welfare practices with dollars and obviating the need for direct governmental regulation of producer behavior.

In reality, however, there is little evidence that consumers in the U.S. demand heightened animal-welfare practices at market. The remainder of this Article explores the failure of market regulation and the welfare-preference paradox posed by consumers who express a strong preference for improved animal welfare in theory, but do not demand heightened animal welfare in practice. This Article argues that market regulation is failing in this country because current voluntary and nonstandard animal-welfare labeling practices do not clearly or credibly disclose to consumers the actual treatment of agricultural animals, creating a missing market for enhanced-welfare animal products. As a corollary, effective market regulation of agricultural animal welfare may be empowered simply by improving current labeling practices.

The remainder of this Article proceeds as follows: Part II provides background on the concept of agricultural animal welfare and its regulation in the U.S. Part III explores the failed promise of market regulation of agricultural animal welfare. Part IV argues that the failure of market regulation is attributable to current labeling practices. Part V discusses how labeling deficiencies might be corrected to empower market regulation of animal welfare.

II. BACKGROUND

Because economic markets do not exist in isolation, analysis of the potential for market regulation of agricultural animal welfare requires predicate knowledge of the social and legal forces that may influence behavior. This Part provides such background material, defining the concept of animal welfare, summarizing the minimal use of direct

animal-welfare regulation in the U.S., and noting a historic preference for “market regulation” in this country.

A. Concern for Agricultural Animal Welfare

In an agricultural context, animal welfare contemplates a variety of health and comfort concepts regarding the conditions, handling, and slaughter of agricultural animals. The abstraction of this definition belies basic disagreements over the appropriate measure of the term.¹ Experts differ over even primitive components of animal welfare:² e.g., the measurement of pain and comfort in animals,³ the relevance of animal consciousness to the ability to perceive pain and fear,⁴ and the appropriate frame of reference for judging animal welfare.⁵

At a more fundamental level, there is a lack of consensus regarding the adequacy threshold for welfare provision. At the low end of the spectrum, most commentators agree that, at a minimum, adequate animal welfare requires that animals not be subjected to unnecessary pain and suffering.⁶ More mediate positions contemplate an animal’s

¹ See John Webster, *Animal Welfare: Limping Towards Eden* 5 (Blackwell Publ. 2005) (“It is in the nature of those who study animal welfare to create their own definitions of animal welfare according to the ‘Humpty Dumpty’ principle that ‘When I use a word, it means just what I choose it to mean, neither more nor less.’”).

² The complexity of defining and measuring animal welfare has spawned an entire field of research: animal-welfare science. An approachable survey of the field is provided by Marian Stamp Dawkins, *A User’s Guide to Animal Welfare Science*, 21 *Trends in Ecology & Evolution* 77 (2006).

³ See generally Leena Anil et al., *Pain Detection and Amelioration in Animals on the Farm: Issues and Options*, 8 *J. Applied Animal Welfare Sci.* 261 (2005) (available at http://www.societyandanimalsforum.org/jaaws/full_articles/8.4/anil_deen.pdf (accessed Apr. 13, 2013)) (discussing the concept of pain in farm animals, the difficulty of measuring and quantifying pain, and the particular challenge of pain experienced without corresponding anthropomorphically identifiable behavioral changes).

⁴ See e.g. Dawkins, *supra* n. 2, at 77–79 (discussing the science of consciousness and animal cognition); Tom L. Beauchamp et al., *The Human Use of Animals: Case Studies in Ethical Choice* 7–15 (2d ed., Oxford U. Press 2008) (discussing the relevance of animal consciousness).

⁵ See e.g. John P. McNerney, *Animal Welfare, Economics and Policy: Report on a Study Undertaken for the Farm & Animal Health Economics Division of Defra* 18 (2004) (available at <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/animalwelfare.pdf> (accessed Apr. 13, 2013)) (noting that “natural” animal welfare may differ from optimal or desired animal welfare); *cf. id.* at 4 (“[F]arm animals are fed, housed, protected from predators, their diseases prevented or treated and generally given beneficial treatment compared to what they would experience in their wild (‘natural’) state.”).

⁶ *Cf.* Temple Grandin & Am. Meat Inst. Animal Welfare Comm., *Recommended Animal Handling Guidelines & Audit Guide: A Systematic Approach to Animal Welfare* 2 (Aug. 2012 ed., Am. Meat Inst. Found. 2012) (available at <http://www.animal-handling.org/ht/a/GetDocumentAction/i/80009> (accessed Apr. 13, 2013)) (“Any willful act of abuse is grounds for automatic audit failure.” Examples of willful acts of abuse include “1) Dragging a conscious, non-ambulatory animal; 2) intentionally applying prods to sensitive parts of the animal such as the eyes, ears, nose, anus or testicles; 3) deliberate slamming of gates on livestock; 4) malicious driving of ambulatory livestock on top of one another either manually or with direct contact with motorized equip-

ability to cope with its environment,⁷ or have a reasonably natural, healthy, and happy lifetime.⁸ At the higher end of the spectrum, the so-called “Five Freedoms” recommend specific provisions for adequate animal welfare: (1) freedom from hunger/thirst; (2) freedom from discomfort; (3) freedom from pain, injury, or disease; (4) freedom to express normal behavior; and (5) freedom from fear/distress.⁹

While it is important to recognize the difficult questions involved in defining adequate animal welfare, the remainder of this Article abstracts from such definitional complexities by treating welfare as a simple reflection of an animal’s aggregate health and comfort: i.e., as a sliding scale with levels ranging from low to high. This abstraction sidesteps important, but ultimately orthogonal, disagreements over second-order issues in the definition of animal welfare, in order to focus analysis on the first-order concern for agricultural animals’ comprehensive treatment during life and at slaughter.¹⁰ In this sense, the abstraction is also less restrictive than it might at first appear: fine differences in how one chooses to define animal welfare are unlikely to produce highly inconsistent results when ranking different treatments of agricultural animals under the coarse metric of an animal’s aggregate health and comfort.¹¹

Defined in the aggregate health and comfort sense, the adequacy of agricultural animal welfare is an issue of growing social impor-

ment. . . . ; 5) hitting or beating an animal; or 6) animals frozen to the floor or sides of the trailer.”).

⁷ See generally D.M. Broom, *Animal Welfare: Concepts and Measurement*, 69 *J. Animal Sci.* 4167 (1991); D.M. Broom & A.F. Fraser, *Domestic Animal Behaviour and Welfare* (4th ed., Cambridge U. Press 2007) (discussing failure to cope with the environment and difficulties in coping as indicators of poor welfare).

⁸ See Webster, *supra* n. 1, at 5–10 (discussing the assessment of animal welfare in terms of inquiries such as whether an animal is living a “natural life,” whether its health is adequately maintained, and whether it is “happy” in its environment).

⁹ Farm Animal Welfare Council, *Five Freedoms*, <http://www.fawc.org.uk/freedoms.htm> (updated Apr. 16, 2009) (accessed Apr. 13, 2013); see also Isabelle Veissier et al., *European Approaches to Ensure Good Animal Welfare*, 113 *Applied Animal Behaviour Sci.* 279, 282–83 (2008) (listing European Union (EU) directives informed by the five freedoms: e.g., increasing space to allow expression of normal behavior, and limiting painful intervention to reduce fear and stress).

¹⁰ Although commentators may differ over specific details of the welfare definition, it is the first-order concept of aggregate health and comfort that most concerns parties to the animal-welfare debate. Cf. Richard H. Fallon, Jr., *The Core of an Uneasy Case for Judicial Review*, 121 *Harv. L. Rev.* 1693, 1708 (2008) (“Relativists and skeptics can, and frequently do, retain first-order moral views—personal convictions about right and wrong on the basis of which they are prepared to act—with their relativism or skepticism pertaining only to second-order questions involving the foundations for those views.”).

¹¹ Cf. Jean Tirole, *Theory of Industrial Organization* 99 (Mass. Inst. of Tech. Press 1988) (explaining why a “goods-characteristics” approach is often a reasonable way to represent the value of products with several different dimensions of value).

tance.¹² Public opinion surveys in the U.S.,¹³ the United Kingdom,¹⁴ and Europe¹⁵ suggest broad, though far from universal,¹⁶ support for improving the welfare of agricultural animals. The perception of poor treatment under modern intensive agricultural practices¹⁷ is a driving

¹² E.g. D. M. Broom & K.G. Johnson, *Stress and Animal Welfare* 2 (1st ed., Chapman & Hall 1993) (“The rise in public interest in animal welfare during the past two decades has been dramatic. Concern for animals is evident throughout society in many countries and is invisible only to those who do not want to see.”); James Moynagh, *EU Regulation and Consumer Demand for Animal Welfare*, 3 *AgBioForum* 107, 107 (2000) (available at <http://www.agbioforum.org/v3n23/v3n23a06-moynagh.htm> (accessed Apr. 13, 2013)) (“[T]he greatest driving force for improved animal welfare is public opinion. There is major public demand for improvements in animal welfare in general.”).

¹³ See e.g. Richard Bennett & Douglas Larson, *Contingent Valuation of the Perceived Benefits of Farm Animal Welfare Legislation: An Exploratory Survey*, 47 *J. Agric. Econ.* 224, 229 (1996) (“Eight[y]-one [percent] of respondents stated that they were concerned that farm animals may be mistreated or suffer in the process of producing food and other agricultural products”); Harold A. Herzog & Lorna B. Dorr, *Electronically Available Surveys of Attitudes toward Animals*, 8 *Soc’y. & Animals* 183, 184 (2000) (“In 1994, *Times Mirror* commissioned Princeton Survey Research Associates to assess the views of Americans toward a variety of social causes. Of those sampled, 23% had a ‘very favorable’ attitude toward the animal rights movement, 42% had a ‘mostly favorable’ attitude, 21% had a ‘mostly unfavorable’ view and 9% had a ‘very unfavorable’ view of the movement.”); see generally J.C. Swanson & J. A. Mench, *Animal Welfare: Consumer Viewpoints* (available at <http://animalscience.ucdavis.edu/Avian/swanson.pdf> (accessed Apr. 13, 2013)) (discussing surveys gauging public opinion on farm animal issues).

¹⁴ See e.g. Richard M. Bennett & Ralph J.P. Blaney, *Estimating the Benefits of Farm Animal Welfare Legislation Using the Contingent Valuation Method*, 29 *Agric. Econ.* 85, 87 (2003) [hereinafter Bennett & Blaney, *Estimating the Benefits*] (“Eighty-six percent of respondents were ‘very concerned’ or ‘somewhat concerned’ that farm animals may suffer or be mistreated (41 and 45%, respectively.)”); Richard Bennett & Ralph Blaney, *Social Consensus, Moral Intensity and Willingness to Pay to Address a Farm Animal Welfare Issue*, 23 *J. Econ. Psychol.* 501, 506–07 (2002) [hereinafter Bennett & Blaney, *Social Consensus*] (finding substantial concern about animal welfare and majority support for proposed welfare-improvement legislation).

¹⁵ See e.g. European Commn., *Special Eurobarometer 229: Attitudes of Consumers towards the Welfare of Farmed Animals* 64 (June 2005) (available at http://ec.europa.eu/food/animal/welfare/euro_barometer25_en.pdf (accessed Apr. 13, 2013)) (“A majority of European Union citizens (55%) state that animal welfare/protection does not receive enough importance in the agricultural policy of their countries. Only a minority (7%) believe it receives too much importance.”).

¹⁶ See e.g. Wim A. J. Verbeke & Jacques Viaene, *Ethical Challenges for Livestock Production: Meeting Consumer Concerns about Meat Safety and Animal Welfare*, 12 *J. Agric. & Envtl. Ethics* 141, 149 (2000) (“Animal welfare in general was ranked among the less important fresh meat attributes.”); C. R. Heleski et al., *Assessing Attitudes toward Farm Animal Welfare: A National Survey of Animal Science Faculty Members*, 82 *J. Animal Sci.* 2806, 2808–14 (2004) (available at <http://www.journalofanimalscience.org/content/82/9/2806> (accessed Apr. 13, 2013)) (noting the general satisfaction of U.S. animal-science faculty with the current provision of animal welfare in agricultural practices).

¹⁷ See generally Joy A. Mench, *Farm Animal Welfare in the U.S.A.: Farming Practices, Research, Education, Regulation, and Assurance Programs*, 113 *Applied Animal Behaviour Sci.* 298, 299–300 (2008) (discussing modern agricultural practices in the U.S.); Fabio Napolitano et al., *Consumer Liking and Willingness to Pay for High Welfare Animal-Based Products*, 21 *Trends in Food Sci. & Tech.* 537, 538 (2010) (“Factory-farm methods of raising and slaughtering animals represent the main production system in

force in evolving social concern,¹⁸ and underscores recent legislation in Europe¹⁹ and (to a lesser extent) in the U.S.

B. *Lack of Direct Regulation in the U.S.*

The U.S. affords a number of direct protections for the treatment of different classes of animals: e.g., domestic animals,²⁰ migratory birds,²¹ and endangered species.²² Unlike many European countries, however, the U.S. prescribes no substantial welfare standards for the protection of agricultural animals. At both the federal and state level, direct regulation of agricultural animal welfare is minimal and largely ineffective.

1. *Federal Regulation*

Federal statutory regulation of agricultural animal welfare is minimal: namely, the Humane Methods of Livestock Slaughter Act (Humane Slaughter Act)²³ and the Twenty-Eight Hour Law.²⁴ As a matter of both substance and enforcement, these laws impose few practical requirements on the treatment of agricultural animals.

It is important to note that both federal laws are substantively narrow. The Humane Slaughter Act provides minimally humane standards for the slaughter of cattle, calves, horses, mules, sheep, swine, and other livestock,²⁵ exempting fish and poultry from protection.²⁶

Europe and North America, and are acquiring most of the market also in the developing countries. . . . Evident examples of dramatic reduction of animal welfare in intensive systems are represented by the drop of dairy cows['] lifespan[s], high prevalence of abnormal behaviours in pigs, bone weakness in caged laying hens, lameness in broiler chickens, et[cetera]") (citing Broom & Fraser, *supra* n. 7).

¹⁸ Cf. Nik Taylor & Tania D. Signal, *Willingness to Pay: Australian Consumers and "On the Farm" Welfare*, 12 J. Applied Animal Welfare Sci. 345, 346 (2009) ("The ways of keeping animals in modern agricultural practices also gave rise to a new and different set of welfare-related issues to those in the 'traditional ethic.'").

¹⁹ See generally Veissier et al., *supra* n. 9, at 280–91 (describing regulation of agricultural animal welfare in many European countries).

²⁰ E.g. Animal Welfare Act, 7 U.S.C. §§ 2131–2159 (2006) (providing minimally acceptable treatment conditions for certain domestic animals in research, exhibition, transport, and by dealers).

²¹ E.g. Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712 (2006) (making it unlawful to take, kill, or possess certain species of birds).

²² E.g. Endangered Species Act, 16 U.S.C. §§ 1531–1544 (2006) (instituting a conservation program for certain species of plants and animals and their environments).

²³ Humane Methods of Livestock Slaughter Act, 7 U.S.C. §§ 1901–1907 (2006).

²⁴ Twenty-Eight Hour Act, 49 U.S.C. § 80502 (2006).

²⁵ See 7 U.S.C. § 1902 (providing that the humane slaughter of "cattle, calves, horses, mules, sheep, swine, and other livestock" requires that the animal be either (1) "rendered insensible to pain by a single blow or gunshot or an electrical, chemical or other means that is rapid and effective, before being shackled, hoisted, thrown, cast, or cut"; or (2) slaughtered in conformance with certain religious rituals).

²⁶ See e.g. Farm Sanctuary, *Farm Animal Welfare: An Assessment of Product Labeling Claims, Industry Quality Assurance Guidelines and Third Party Certification Standards* 9 (available at http://sustainability.universityofcalifornia.edu/documents/farmsanctuary_appraisal.pdf (accessed Apr. 13, 2013)) ("The humane slaughter law

The statute applies only to the point of slaughter and is silent as to all other aspects of animal welfare (e.g., feeding, confinement, mobility, etcetera). The Twenty-Eight Hour Law is similarly narrow, requiring only that livestock (again excluding poultry) not be transported interstate for “more than [twenty-eight] consecutive hours without unloading the animals for feeding, water, and rest.”²⁷ Even this requirement is avoidable under minimal improvements to transportation conditions.²⁸

Beyond their substantive limitations, the few practical protections afforded by federal laws are reduced by inadequate enforcement procedures.²⁹ Enforcement of the Humane Slaughter Act has been especially deficient,³⁰ culminating in a recent congressionally funded investigation³¹ and official finding that the U.S. Department of Agriculture (USDA) has adopted enforcement practices which are inadequate, inconsistent, and in need of improvement.³² Along similar lines, several citizen groups have recently petitioned the USDA to urge the adoption of improved enforcement practices.³³

does not cover poultry, which comprise over 95% of farm animals who are slaughtered in the U.S.”).

There is some question as to whether poultry is properly exempted from protection under the Humane Slaughter Act. *See generally Levine v. Conner*, 540 F. Supp. 2d 1113, 1115–21 (N.D. Cal. 2008) (discussing arguments that the Humane Slaughter Act should be interpreted to apply to poultry, before ultimately deciding that Congress intended to exclude poultry from the statutory term “livestock”); *Levine v. Vilsack*, 587 F.3d 986, 991–97 (9th Cir. 2009) (vacating and remanding *Levine v. Conner* for lack of standing to challenge the U.S. Department of Agriculture’s (USDA) interpretive rule).

²⁷ 49 U.S.C. § 80502(a)(1).

²⁸ The unloading requirement does not apply when “animals are transported in a vehicle in which the animals have food, water, space, and an opportunity for rest.” *Id.* at § 80502(c).

²⁹ *See* Samantha Mortlock, *Standing on New Ground: Underenforcement of Animal Protection Laws Causes Competitive Injury to Complying Entities*, 32 Vt. L. Rev. 273, 273–77 (2007) (noting systemic underenforcement).

³⁰ Joby Warrick, *They Die Piece by Piece*, Wash. Post A1 (Apr. 10, 2001) (available at [http://www.uta.edu/philosophy/faculty/burgess-jackson/Warrick,%20They%20Die%20Piece%20by%20Piece%20\(2001\).pdf](http://www.uta.edu/philosophy/faculty/burgess-jackson/Warrick,%20They%20Die%20Piece%20by%20Piece%20(2001).pdf)) (accessed Apr. 13, 2013) (describing blatant violations of the Humane Slaughter Act, and failure of the USDA to take substantive remedial actions even in cases of extreme violations and ongoing abuses).

³¹ Farm Security and Rural Investment Act of 2002, Pub. L. No. 107-171, § 10305, 116 Stat. 134, 493 (2002).

³² U.S. Govt. Accountability Off., *Humane Methods of Slaughter Act: Actions Are Needed to Strengthen Enforcement*, GAO-10-203, 12 (Feb. 2010) (available at <http://www.gao.gov/new.items/d10203.pdf>) (accessed Apr. 13, 2013).

³³ *See* Ltr. from Cathy Liss, Pres., Animal Welfare Inst., to Alfred V. Almanza, Adminstr., Food Safety Inspection Serv., U.S. Dept. of Agric., *Non-Rulemaking Petition for Improving Humane Methods of Slaughter Act Enforcement* 1, 9 (Aug. 31, 2010) (available at http://www.fsis.usda.gov/PDF/Petition_Animal_Welfare_Institute.pdf) (accessed Apr. 13, 2013) (offering four recommendations to the USDA to improve its implementation and enforcement of the Humane Slaughter Act); Pet. to Amend 9 C.F.R. § 309.3(e) to Prohibit the Slaughter of Non-Ambulatory Pigs, Sheep, Goats, and Other Livestock and to Require that Such Animals Be Humanely Euthanized (U.S. Dept. Agric. Mar. 15, 2010) (Docket No. 10-01) (available at http://www.fsis.usda.gov/PDF/Petition_Humane_Handling.pdf) (accessed Apr. 13, 2013) (Farm Sanctuary’s petition to the USDA to

2. State Regulation

The minimal protection of agricultural animal welfare afforded by federal law is supplemented by state-level animal welfare laws in at least twenty states,³⁴ viz.: Alabama,³⁵ Arizona,³⁶ California,³⁷ Colorado,³⁸ Florida,³⁹ Georgia,⁴⁰ Illinois,⁴¹ Indiana,⁴² Kentucky,⁴³ Louisiana,⁴⁴ Maine,⁴⁵ Michigan,⁴⁶ Ohio,⁴⁷ Oklahoma,⁴⁸ Oregon,⁴⁹ South

amend legislation so as to prohibit the slaughter of nonambulatory animals); Pet. for Rulemaking, *Humane Socy. of the U.S. v. Vilsack* (U.S. Dept. Agric. Nov. 2, 2009) (available at http://www.fsis.usda.gov/PDF/Petition_HSUS_Humane_Handling.pdf (accessed Apr. 13, 2013)) (the Humane Society's petition requesting that the USDA close regulatory loopholes that facilitate cattle mistreatment and the processing of nonambulatory cattle for human consumption).

³⁴ Most states have adopted some form of felony anti-cruelty provision. See Animal Leg. Def. Fund, *2012 U.S. Animal Protection Laws Rankings: Comparing Overall Strength & Comprehensiveness* 3 (Animal Leg. Def. Fund Dec. 2012) (available at <http://aldf.org/custom/rankings/ALDF2012USRankingsReport.pdf> (accessed Apr. 13, 2013)) (noting that, as of December 2012, only North and South Dakota lacked a felony animal-abuse statute). These anti-cruelty laws often exempt agricultural animals from the scope of their protections. See Elizabeth Ann Overcash, *Unwarranted Discrepancies in the Advancement of Animal Law: The Growing Disparity in Protection Between Companion Animals and Agricultural Animals*, 90 N.C. L. Rev. 837, 860 (2011) (observing that anti-cruelty statutes often exempt agricultural animals from the definition of "animal").

³⁵ Ala. Code § 13A-11-14 (West 2012, Reg. & 1st Spec. Sess.) (defining what constitutes cruelty to "any animal" and criminalizing these acts as Class B misdemeanors); but see Ala. Code § 13A-11-241 (West 2012, Reg. & 1st Spec. Sess.) (defining what constitutes cruelty to a dog or cat and criminalizing these acts as Class C felonies).

³⁶ Ariz. Rev. Stat. Ann. §§ 13-2910.07 to 13-2910.08 (West 2010) (prohibiting cruel and inhumane confinement of a pig during pregnancy or a calf raised for veal).

³⁷ Cal. Health & Safety Code Ann. § 25990 (West 2010) (prohibiting cruel and inhumane confinement of any covered animal for all or the majority of a day; operative on January 1, 2015).

³⁸ Colo. Rev. Stat. §§ 35-50.5-101 to 35-50.5-103 (Lexis 2012) (prohibiting the cruel and inhumane confinement of a pig during pregnancy or a calf raised for veal).

³⁹ Fla. Const. art. X, § 21(a) (prohibiting cruel and inhumane confinement of a pig during pregnancy).

⁴⁰ Ga. Code Ann. § 2-1-6 (2012) (prohibiting regulation of farm production by local government).

⁴¹ 20 Ill. Comp. Stat. Ann. 5/5-525 (WL current through 2012 Reg. Sess.) (establishing a Livestock Board of Advisory Commissioners to develop and enact livestock care standards).

⁴² Ind. Code Ann. §§ 15-17-3-1, 15-17-3-11, 15-17-3-23 (Lexis 2012) (establishing the Indiana Board of Animal Health to set standards governing the care of livestock and poultry).

⁴³ Ky. Rev. Stat. Ann. § 257.196 (Lexis 2012) (requiring the Kentucky Livestock Care Standards Commission to create standards for the care of livestock and poultry).

⁴⁴ La. Rev. Stat. Ann. § 3.2095.1 (2011) (requiring the Louisiana Board of Animal Health to establish standards for the care of livestock and poultry).

⁴⁵ 7 Me. Rev. Stat. Ann. § 4020 (2012); 17 Me. Rev. Stat. Ann. § 1039 (2012) (prohibiting cruel and inhumane confinement of any animal for all or the majority of a day).

⁴⁶ Mich. Comp. Laws Serv. § 287.746 (Lexis 2012) (prohibiting cruel and inhumane confinement of any animal for all or the majority of a day).

⁴⁷ Ohio Const. art. XIV, § 1 (establishing the Ohio Livestock Care Standards Board to promulgate standards for the treatment of livestock).

Carolina,⁵⁰ Utah,⁵¹ Vermont,⁵² Washington,⁵³ and West Virginia.⁵⁴ While a detailed treatment of state laws is beyond the scope of this Article, it is helpful to note that state laws fall into three basic categories: (1) laws making illegal the cruel and inhumane confinement of calves for veal, pregnant sows, and/or egg-laying hens; (2) laws establishing a livestock standards board to promulgate regulation on standards of care for agricultural animals; and (3) laws prohibiting regulation of farm production by local governments.

Unfortunately, the scope and efficacy of much potential state regulation of agricultural animal welfare is circumscribed by federal law through the related constitutional-law doctrines of federal preemption and the dormant Commerce Clause. Again, a satisfactory treatment of the underlying legal challenges is well beyond the scope of the present Article, but a brief summary of involved issues is instructive.

Under preemption doctrine, a state law is invalid when congressional legislation on a subject matter evinces either explicit or implicit intent that federal law should preclude state action on that subject matter.⁵⁵ State legislation attempting to set heightened standards for agricultural animal welfare during transportation or at slaughter thus risks challenge on preemption grounds. For example, the U.S. Supreme Court recently held a California law providing for heightened slaughter standards invalid as preempted by the Humane Slaughter Act⁵⁶ as incorporated in the Federal Meat Inspection Act (FMIA).⁵⁷

⁴⁸ Okla. St. Ann. tit. 2, § 2-4C (West 2012) (establishing the Oklahoma Department of Agriculture, Food, and Forestry as the only entity empowered to implement policy of the state regarding the care and handling of livestock).

⁴⁹ Or. Rev. Stat. Ann. § 600.150 (West 2012) (prohibiting cruel and inhumane confinement of a pig during pregnancy); Or. Rev. Stat. Ann. § 632.840 (West 2012) (directing the Oregon Department of Agriculture to adopt rules prescribing the minimum conditions of confinement for egg-laying hens).

⁵⁰ S.C. Code Ann. § 47-4-160 (2012) (vesting the South Carolina General Assembly with authority to standardize livestock treatment).

⁵¹ Utah Code Ann. § 4-2-7 (Lexis 2006) (establishing the Agricultural Advisory Board).

⁵² Vt. Stat. Ann. tit. 6, §§ 791–793 (2011) (establishing a livestock-care-standards advisory council for evaluating laws and recommending standards of care for livestock).

⁵³ Wash. Rev. Code Ann. § 69.25.107 (West 2013) (establishing enforceable minimum standards to protect the health and well-being of egg-laying hens, effective August 1, 2012).

⁵⁴ W. Va. Code Ann. §§ 19-1C-1 to 19-1C-6 (Lexis 2012) (establishing Livestock Care Standards Board to promulgate standards of care for livestock).

⁵⁵ See *Gade v. Natl. Solid Waste Mgt. Assn.*, 505 U.S. 88, 98 (1992) (explaining that federal legislation preempts state law when (1) intent to preempt state law is explicit in the language of the federal statute, (2) intent to preempt state law is implicit from the pervasive scheme of federal regulation in a particular field, or (3) intent to preempt state law is implicit due to a direct contradiction between state and federal law).

⁵⁶ *Natl. Meat Assn. v. Harris*, 132 S.Ct. 965, 970 (2012).

⁵⁷ See *id.* at 968 (“[S]ince amended in 1978 . . . the FMIA requires all slaughterhouses to comply with the standards for humane handling and slaughter of animals set out in the Humane Methods of Slaughter Act of 1958 . . . which originally applied only

Under dormant Commerce Clause doctrine, a state law is constitutionally invalid when motivated by protectionist or discriminatory intent, or when otherwise imposing a substantial burden on interstate commerce.⁵⁸ This may represent a substantial barrier to comprehensive state regulation of agricultural animal welfare. For example, a state attempting to set minimal agricultural animal welfare standards faces two possible choices: (1) require that only in-state producers adhere to heightened welfare standards, reducing the competitiveness of in-state producers against their out-of-state counterparts; or (2) require that all animal products sold within the state adhere to heightened welfare standards, avoiding competition concerns but risking legal challenge under the dormant Commerce Clause.⁵⁹

C. Preference for Market Regulation

Minimal direct regulation of agricultural animal welfare in the U.S. is best understood in terms of a historic preference for market regulation in this country.⁶⁰ Whereas many European countries stipulate direct legal standards for farm animal welfare, the leading theory in the U.S. is that producers will self-regulate their welfare provision to match consumer demand. An informal expression of the theory is as follows: if consumers value agricultural animal welfare, then (1) they will pay a premium for high-welfare animal products, (2) producers will compete for the high-welfare premium by increasing welfare prac-

to slaughterhouses selling meat to the Federal Government.” (internal citations omitted)).

⁵⁸ See e.g. *City of Phila. v. N.J.*, 437 U.S. 617, 624 (1978) (“The crucial inquiry, therefore, must be directed to determining whether [a state law] is basically a protectionist measure, or whether it can fairly be viewed as a law directed to legitimate local concerns, with effects upon interstate commerce that are only incidental.”); *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970) (“Where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.”); *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520, 529 (1959) (“Like any local law that conflicts with federal regulatory measures, state regulations that run afoul of the policy of free trade reflected in the Commerce Clause must also bow.” (internal citations omitted)).

⁵⁹ See Luther Tweeten, *The Economics of Animal Welfare Regulations Proposed for Ohio*, 3 (newsltr. of the Ohio St. U. Extension, Ohio Agric. Research & Dev. Ctr.) (June 2009) (available at http://oema.osu.edu/CAFO/animalwelfare_tweeten.pdf (accessed Apr. 13, 2013)) (noting the effects of state-level regulation on in-state producer competitiveness, and the likely challenge of any associated trade barriers on dormant Commerce Clause grounds).

⁶⁰ See e.g. Bennett & Larson, *supra* n. 13, at 225 (noting that in contrast to the European experience with agricultural-animal-welfare reform, the U.S. “appears[s] to have been more of the belief that the market system (together with appropriate provision of information) can be relied upon to meet people’s animal welfare requirements” (citation omitted)); David Blandford & Linda Fulponi, *Emerging Public Concerns in Agriculture: Domestic Policies and International Trade Commitments*, 26 *European Rev. Agric. Econ.* 409, 412 (1999) (noting that “until recently, most countries have used a voluntary, market-oriented approach to ensure farm animal welfare,” and that the European approach of adopting direct regulations is a deviation from this broader trend).

tices to the point where consumers are no longer willing to pay for marginal improvements in welfare, thus (3) free exchange in “the market” will result in adoption of a socially desirable level of animal welfare.

III. THE FAILURE OF MARKET REGULATION

Elegance of the market-regulation hypothesis notwithstanding, it is increasingly clear that U.S. consumers are not demanding welfare standards for agricultural animals at levels consistent with theory. This Part discusses the “failure” of market regulation by first undertaking an exercise in the formal theory of market regulation. Having demonstrated the market-regulation hypothesis, the discussion goes on to note an empirical lack of demand for animal-welfare provision at market. The Part concludes by discussing the paradox posed by consumers who express a clear preference for improved agricultural animal welfare in theory, but who simultaneously fail to demand enhanced-welfare animal products in practice.

A. Market Regulation in Theory

1. A Simple Model

As an essentially *economic* strategy for the provision of agricultural animal welfare, the market-regulation hypothesis is most naturally explored with a formal economic model of market equilibrium. Toward this end, this Part considers a simple differentiated-products model of the market for agricultural animal welfare.⁶¹ To keep analysis simple and focused narrowly on the provision of agricultural animal welfare, the market is assumed to consist of only two producers and of a continuum of consumers, all of whom buy a single “unit” of animal product.⁶²

⁶¹ This model of animal-welfare provision is a simple application of a well-known model of quality differentiation in the industrial organization literature. See Oz Shy, *Industrial Organization: Theory and Applications* 310–15 (Mass. Inst. of Tech. Press 1995) (discussing this type of vertical differentiation model in a general context); Tirole, *supra* n. 11, at 96–105 (providing further discussion and more detailed treatment of equilibrium in this type of model).

⁶² A reader unfamiliar with formal modeling may find these and many subsequent assumptions objectionable. It is important to remember, however, that the purpose of modeling is to abstract away from the complexities inherent in real-world markets, leaving behind only a simple outline of important features in the underlying problem. Simplified models also commonly have robust interpretations. The apparently strong assumption that the market is served by only two producers, for example, may actually be a realistic interpretation of the essential market structure in a wide variety of scenarios. See generally Avner Shaked & John Sutton, *Natural Oligopolies*, 51 *Econometrica* 1469 (1983) (showing that the nature of price competition in a large class of vertically-differentiated-product markets implies an upper bound on the number of product types (i.e., levels of quality) that will be produced in market equilibrium); Avner Shaked & John Sutton, *Relaxing Price Competition through Product Differentiation*, 49 *Rev. Econ. Stud.* 3 (1982) (illustrating, in the context of a particular vertical-differentiation model,

Consumer preferences over animal welfare are characterized by two properties in the model. First, the product space is vertically differentiated:⁶³ i.e., even if not all consumers are willing to pay much more to purchase animal products associated with enhanced-welfare practices, all consumers would prefer greater animal welfare, all else being equal. Second, there is a distribution of taste for animal welfare in the population: i.e., some consumers are more willing than others to pay for increases in agricultural animal welfare.

To simplify analysis, economists conventionally express consumer preferences in terms of mathematical utility functions.⁶⁴ One possible utility-function representation of the above preferences over agricultural animal welfare is as follows:

$$(1) \quad U_{\theta}(w,p) = \theta w - p$$

In this utility function, $0 \leq w \leq 1$ denotes the level of animal welfare associated with a given animal product (i.e., w is a scalar with 0 representing minimum welfare provision and 1 representing maximum welfare provision), $p \geq 0$ denotes product price (i.e., it costs the consumer $\$p$ to buy the product), and $0 \leq \theta \leq 1$ denotes the consumer's preference for animal welfare, distributed uniformly in the population (i.e., some consumers value animal welfare more than others, with higher values of θ denoting a stronger preference for animal welfare).⁶⁵

For the supply side of the market, suppose producers A and B compete in the following three-stage game. In the first stage, each producer selects the level of animal-welfare provision that it will use during production: w_A and w_B . Let $c \geq 0$ denote the common and constant marginal cost of welfare provision,⁶⁶ reflecting the cost to producers of increasing their provision of agricultural animal welfare.⁶⁷ In the second stage, each producer selects a price for its product: p_A and p_B . Each

that the only (perfect) equilibrium involves provision of the product at exactly two different quality levels).

⁶³ See Tirole, *supra* n. 11, at 96–97 (discussing the theory of vertically-differentiated product spaces).

⁶⁴ A detailed discussion of utility theory is beyond the scope of this Article. It suffices to note that a utility function is simply a way of representing binary consumer preferences in terms of number rankings. For example, if the utility function representing a particular consumer's preferences assigns a value of 2 to product x and a value of 1 to product y , then the interpretation is that this consumer prefers product x to product y .

⁶⁵ The term can be interpreted either as a consumer's abstract preference for animal welfare or as a reflection of income limitations on the consumer's purchasing habits (the inverse of the marginal rate of substitution between income and animal welfare), as opposed to a preference for animal welfare *per se*. See Tirole, *supra* n. 11, at 96–97 (discussing both interpretations in the context of a generic market for product quality).

⁶⁶ Generalizing the cost function to nonlinearity or dependence on quantity, instead of quality alone, complicates the analysis while providing little additional insight for present purposes.

⁶⁷ *E.g.* F. Bailey Norwood & Jayson L. Lusk, *Compassion, by the Pound: The Economics of Farm Animal Welfare* 259 (Oxford U. Press 2011) (noting that greater welfare provision is easily achievable but also costly).

producer’s gross revenue is equal to the price charged times the proportion of consumers that buy the product. In the third stage, consumers compare the two animal products and purchase from one producer or the other according to the above utility function.

2. *The Market-Regulation Hypothesis*

Market equilibrium in this model results in a distribution of agricultural animal-welfare provision according to consumer willingness to pay—that is, in a particular form of the market-regulation hypothesis. While it is not necessary to work through the equilibrium derivation in detail, rough intuition for the prediction is instructive.⁶⁸ Solving for market equilibrium in this model involves working backwards.

In the third stage, producers will have already decided what their product bundles will be: i.e., the values of (w_A, p_A) and (w_B, p_B) will have already been chosen. A rational consumer with animal-welfare-preference parameter θ buys the more desirable (i.e., higher utility) bundle. For sake of clarity, suppose that if producers *A* and *B* choose different levels of welfare provision, then $w_A < w_B$ and $p_A < p_B$.⁶⁹ Consumers with lower taste for animal welfare buy from producer *A* (the lower-welfare producer), while those with higher taste for animal welfare buy from producer *B* (the higher-welfare producer). The cutoff between these two groups occurs for the consumer that is just indifferent between each animal product:

$$(2) \quad \tilde{\theta}w_A - p_A = \tilde{\theta}w_B - p_B \Leftrightarrow \tilde{\theta} = \frac{p_B - p_A}{w_B - w_A}$$

Put another way, all consumers with animal-welfare preference $\theta \leq \tilde{\theta}$ buy from producer *A*, and all consumers with animal-welfare preference $\theta > \tilde{\theta}$ buy from producer *B*.

In the second stage, producers will have already selected their levels of animal-welfare provision (w_A and w_B), but will not have decided what prices they will charge. Anticipating consumer behavior in the third stage, each producer sets its price to maximize total profits:

$$(3) \quad \max_{p_A} p_A \frac{p_B - p_A}{w_B - w_A} - cw_A \text{ and } \max_{p_B} p_B \left(1 - \frac{p_B - p_A}{w_B - w_A}\right) - cw_B$$

Simultaneously solving these pricing problems results in the following pricing strategies:

$$(4) \quad p_A^*(w_A, w_B) = \frac{w_B - w_A}{3} \text{ and } p_B^*(w_A, w_B) = \frac{2(w_B - w_A)}{3}$$

⁶⁸ See *supra* nn. 62–63 (for citations to more extensive discussion of the market equilibrium).

⁶⁹ The assumption that producer *A* provides the lower-welfare product is without loss of generality. Assuming the higher-welfare product also costs more is intuitive and obviates discussion of unrealistic special cases.

Each producer's optimal price in the second stage is thus an increasing function of the difference in animal-welfare provision decisions made by producers in the first stage.

In the first stage, producers choose their levels of animal-welfare provision. Anticipating how they will price their products in stage two, and thus what demand they will get for their products in stage three, producers face the following welfare-provision problems:⁷⁰

$$(5) \quad \max_{w_A} \frac{1}{9}(w_B - w_A) - cw_A \quad \text{and} \quad \max_{w_B} \frac{4}{9}(w_B - w_A) - cw_B$$

Because producer *A*'s profit is strictly decreasing in its provision of animal welfare, it is clearly optimal for producer *A* to adopt the lowest possible animal-welfare practices. By contrast, as long as the marginal cost of animal welfare is not too large,⁷¹ it is optimal for producer *B* to provide the highest possible level of animal welfare. Thus, market equilibrium in the model involves animal-welfare provisions at the two extremes of the distribution: $w_A^* = 0$ and $w_B^* = 1$.

In summary, economic analysis of this model of the market for agricultural animal welfare predicts a particular version of the market-regulation hypothesis. Consumers with a relatively low taste for animal welfare, $\theta \leq 1/3$, buy the low-welfare animal product from producer *A* at the relatively low price of $p_A^* = 1/3$. Consumers with a relatively high taste for animal welfare, $\theta > 1/3$, buy the high-welfare animal product from producer *B* at the relatively high price of $p_B^* = 2/3$. It is important to note that by differentiating their animal-product offerings over the animal-welfare dimension, producers relax their own price competitiveness. Intuitively, consumer attention to animal-welfare provision means less intense focus on relative product prices at market.

B. Market Regulation in Practice

Elegant and intuitive though it may be, the above version of the market-regulation hypothesis is a poor predictor of market behavior in practice.⁷² Recent growth in niche markets (e.g., Whole Foods) notwithstanding,⁷³ there is little direct evidence that consumers actually

⁷⁰ Note that the objective functions in (5) are derived by substituting pricing strategies from (4) into the profit functions given in (3).

⁷¹ Note that if the marginal cost of animal welfare exceeds four-ninths, then the cost to producer *B* of increasing its provision of animal welfare exceeds the benefit of doing so. In this case, producer *B* would also provide the lowest possible level of animal welfare in equilibrium, and there would be a corresponding change in prices.

⁷² E.g. Beauchamp et al., *supra* n. 4, at 80 ("Surveys show that the public's support of standards for improving animal welfare is strong, but this support often does not translate into shopping activities.").

⁷³ *Infra* n. 77 and accompanying text (discussing niche markets for high-welfare products).

demand enhanced-welfare animal products at market.⁷⁴ On the contrary, modern history has evidenced a clear trend toward increasingly fierce price competition (i.e., consumers buying only the cheapest available animal products), and a consequent intensification of industry practices to reduce costs and therefore prices.⁷⁵ The general consensus appears to be that consumer spending habits are, if anything, responsible for *decreasing* the overall provision of agricultural animal welfare, not increasing it.⁷⁶

Note the specific ways in which the practice of market regulation differs from theory. First, rather than providing a distribution of both high- and low-welfare animal products, the market is overwhelmingly dominated by low-welfare products, with high-welfare products relegated only to small niche markets.⁷⁷ Second, absent vertical differentiation of animal products in terms of animal welfare, consumers focus sharply on product prices and the market for animal products is correspondingly dominated by intense price competition.

C. The Welfare-Preference Paradox

Although it is tempting to interpret lack of demand for enhanced-welfare animal products as indicative of a low willingness to pay for

⁷⁴ Indirect evidence in the form of consumer surveys is frustratingly unclear. Compare R. Bennett, *Measuring Public Support for Animal Welfare Legislation: A Case Study of Cage Egg Production*, 7 *Animal Welfare* 1, 3 (1998) (“Sixty-one per cent [of UK consumers] purchased or avoided purchasing particular farm animal products because of their concerns about the welfare of the animals involved.”) with Monika J.A. Schröder & Morven G. McEachern, *Consumer Value Conflicts Surrounding Ethical Food Purchase Decisions: A Focus on Animal Welfare*, 28 *Intl. J. Consumer Stud.* 168, 170 (2004) (“[O]nly 10% [of UK consumers] currently search for [animal welfare] information and, furthermore, 48% profess a lack of interest in this.”).

⁷⁵ David Fraser et al., *Farm Animals and Their Welfare in 2000*, in *The State of the Animals* 87, 95–96 (Deborah J. Salem & Andrew N. Rowan eds., 2001).

⁷⁶ *E.g. id.* at 95 (“In fact, many of the animal welfare problems commonly attributed to confinement technology may actually be problems of extreme price competition in a large market. By itself, the practice of penning sows individually during pregnancy may be a defensible way of promoting health and preventing aggression; but restricting the space allowance to a narrow, unbedded stall is a matter of economics. By itself, the use of caging to keep hens in small stable groups, separated from their excreta, may be a defensible means of improving hygiene and preventing social stress; however[,] crowding many hens into a small, barren cage is a decision based on economics.”).

⁷⁷ See *e.g.* A. J. F. Webster, *Farm Animal Welfare: The Five Freedoms and the Free Market*, 161 *Veterinary J.* 229, 234 (2001) (“Undoubtedly the production of small quantities of high-welfare food for niche markets will make some people and some animals feel better. It will not, however, do much to ameliorate the welfare of farm animals in general.”); see also European Commn., *Feasibility Study on Animal Welfare Labelling and Establishing a Community Reference Centre for Animal Protection and Welfare: Part 1* 7 (Jan. 26, 2009) (available at http://ec.europa.eu/food/animal/welfare/farm/aw_labelling_report_part1.pdf (accessed Apr. 13, 2013)) [hereinafter *EU Labeling Study*] (“From the survey results it is obvious that there is still much uncertainty about the market share of animal welfare friendly products [in European countries]. All in all, market shares for animal welfare related certification systems tend to be low.”); *cf. id.* at 8, tbl. 4 (categorizing participation in certification programs by animal/industry and country).

agricultural animal welfare in the population of consumers, this conclusion is at odds with the findings of a considerable body of consumer valuation research. In the U.S., participants in hypothetical contingent valuation surveys indicate a willingness to pay substantial premiums for animal products associated with enhanced-welfare practices.⁷⁸ Similar findings are reported for valuation surveys conducted in the United Kingdom,⁷⁹ European Union,⁸⁰ Australia,⁸¹ and China.⁸²

While the “contingent valuation method” is often criticized as a flawed means of eliciting consumers’ actual willingness to pay,⁸³ alternative studies conducted with non-hypothetical incentivization schemes⁸⁴ and real-money auctions⁸⁵ have tended to corroborate contingent valuation results. Willingness-to-pay figures are also corroborated by the substantial public interest in agricultural animal-welfare legislation, as evidenced by public opinion polls and the passage of state-level legislation regulating animal-welfare practices.⁸⁶

But if it is accepted that consumers are *in fact* willing to pay a substantial premium for improved animal-welfare practices, then the market-regulation hypothesis suggests that consumers should demand a substantial portion of animal products be produced under enhanced-

⁷⁸ *E.g.* Bennett & Larson, *supra* n. 13, at 231 (finding a mean willingness to pay 18% more for eggs in exchange for prescribed improvements to laying-hen welfare).

⁷⁹ Bennett & Blaney, *Estimating the Benefits*, *supra* n. 14, at 91 (finding a mean willingness to pay an increase of £0.41 per dozen eggs to support the legislation improving the welfare of laying hens).

⁸⁰ G.A. María, *Public Perception of Farm Animal Welfare in Spain*, 103 *Livestock Sci.* 250, 256 (2006) (“More than 75% of the people agreed to pay more for a product to improve animal welfare.”).

⁸¹ Taylor & Signal, *supra* n. 18, at 352, fig. 1 (noting that a substantial majority of subjects respond that they would pay a premium for improved animal welfare, some as much as 50% or more).

⁸² Yingjie Zhao & Shasha Wu, *Willingness to Pay: Animal Welfare and Related Influencing Factors in China*, 14 *J. Applied Animal Welfare Sci.* 150, 157–59 (2011) (finding, albeit in a non-agricultural context, that nearly 90% of survey respondents would be willing to pay for improved animal welfare—despite around 40% of subjects expressing initial uncertainty regarding the meaning of “animal welfare”).

⁸³ *E.g.* Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation: Is Some Number Better than No Number?*, 8 *J. Econ. Perspectives* 45, 46 (1994) (“[C]ontingent valuation surveys do not measure the preferences they attempt to measure.”); *see also* L. Venkatachalam, *The Contingent Valuation Method: A Review*, 24 *Envtl. Impact Assessment Rev.* 89 (2004) (discussing criticisms of the contingent valuation method and describing a variety of methodological techniques for mitigating some, but not all, sources of concern).

⁸⁴ Norwood & Lusk, *supra* n. 67, at 267–94 (finding willingness to pay for improved animal welfare under an elicitation experiment that used computer-assisted pricing to determine bids in a non-hypothetical auction).

⁸⁵ Azucena Gracia et al., *Valuing an EU Animal Welfare Label Using Experimental Auctions*, 42 *Agric. Econ.* 669, 675 (2011) (finding auction participants willing to pay a premium of between 19% and 23% for cured ham with an “EU Community Animal Welfare Label”).

⁸⁶ *See supra* nn. 12–19 and accompanying text (discussing evidence of growing public support for animal welfare); *see also supra* nn. 34–54 and accompanying text (identifying state laws passed to protect the welfare of agricultural animals).

welfare practices. This is inconsistent with the empirical observation of a clear lack of demand for enhanced-welfare animal products, and leads to what I term the *Welfare-Preference Paradox*: the difficulty of reconciling established evidence of consumers' willingness to pay for improved agricultural animal welfare with consumers' apparent refusal to actually demand enhanced-welfare products at market.

IV. UNDERSTANDING THE FAILURE OF MARKET REGULATION

Reaction to the welfare-preference paradox in the literature has been largely despairing. Apparently satisfied with the accuracy of the market-regulation hypothesis, most commentators conclude either that consumers do not in fact care about the welfare of agricultural animals,⁸⁷ or that consumers do care about animal welfare but are, for some reason, too weak-willed to buy anything but the cheapest available products in practice.⁸⁸ Such concessions are taken as a failure on the part of consumers to demand substantial improvements in animal welfare.⁸⁹

An immediate leap to the conclusion of consumer apathy is strange and unwarranted. Instead, this Article proposes a more natural interpretation of the data as indicative of a simple market failure in the provision of animal welfare. The proposed interpretation is that consumers' inability to observe animal welfare creates a missing market for the provision of animal welfare. The remainder of the current Part details this thesis, arguing that agricultural animal welfare is best understood as a credence good, and explaining the failure of the market-regulation hypothesis when agricultural animal welfare exhibits a credence property.

⁸⁷ *E.g.* Webster, *supra* n. 77, at 234 ("Since most people do not buy high-welfare foods, it means either that they consider the price is too high, or they simply buy the cheapest on offer without thinking about animal welfare at all. The value they attribute to animal welfare (at the time of purchase) is low or non-existent."); Tweeten, *supra* n. 59, at 2 ("Mench et al. note that [enhanced-welfare] labeling has attracted few customers. That is, animal welfare enhanced products remain a small, niche market, suggesting either that consumers are not well informed or they place little value on these enhanced production practices." (internal citation omitted)).

⁸⁸ *E.g.* B. Rollin, *Should Animal Welfare Be Law or Market Based?*, 88 *J. Animal Sci.* 609, 609 (2010) ("The animal agricultural industry knows full well that the public often chooses the cheaper product even when expressing a commitment to animal welfare or environment friendly products. This does not prove the weakness of these commitments, it rather shows what ancient Stoic philosophers call *akrasia*, or weakness of the will."); *cf.* Schröder & McEachern, *supra* n. 74, at 170–73 (suggesting consumers may consciously suppress animal-welfare concerns at the point of purchase, presumably to avoid feelings of guilt associated with animal treatment and slaughter).

⁸⁹ *Cf.* Rollin, *supra* n. 88, at 609 ("Fulfilling one's ethical obligation attendant upon using animals for human benefit should not be a matter of choice of the sort that market options provide. . . . Honoring basic moral obligations should not be left to market choices, but should be presuppositional to such choices.").

A. *Animal Welfare as a Credence Good*

In the field of information economics,⁹⁰ researchers sometimes find it convenient to partition product attributes into the categories of search,⁹¹ experience,⁹² and credence goods.⁹³ The first two types of goods are potentially observable. Search goods are observable before consumption and thus may be sought out at the point of purchase.⁹⁴ In the context of food products, search attributes include price, color, size, and possibly smell. Markets for search goods invoke few intrinsic difficulties, performing along the lines of classical economic models and tending not to require regulatory intervention.⁹⁵ Unlike search goods, experience goods are observable only after purchase, at the point of consumption.⁹⁶ The taste of a canned food product is an archetypal example of an experience good. In some cases, repeated experience and producer reputation may work to turn experience attributes into search attributes, eliminating potential inefficiencies and obviating the need for regulatory intervention.⁹⁷

⁹⁰ For background and context, see Michael Spence, *Job Market Signaling*, 87 Q. J. Econ. 355 (1973); George J. Stigler, *The Economics of Information*, 69 J. Political Econ. 213 (1961).

⁹¹ See generally Phillip Nelson, *Advertising as Information*, 82 J. Political Econ. 729, 730–34 (1974) [hereinafter Nelson, *Advertising as Information*] (defining “search qualities” as those product characteristics that the consumer is able to determine by inspection prior to purchase of the product); Phillip Nelson, *Information and Consumer Behavior*, 78 J. Political Econ. 311, 311–18 (1970) [hereinafter Nelson, *Information and Consumer Behavior*] (same).

⁹² See generally Nelson, *Advertising as Information*, *supra* n. 91 (defining “experience qualities” as those product characteristics that the consumer can determine only after purchase of the product (i.e., by personal experience at the point of consumption)); Nelson, *Information and Consumer Behavior*, *supra* n. 91 (same).

⁹³ See Michael R. Darby & Edi Karni, *Free Competition and the Optimal Amount of Fraud*, 16 J.L. & Econ. 67, 69 (1973) (defining “credence qualities” as those product characteristics which—though valuable to consumers—cannot be determined in the process of purchase and consumption).

⁹⁴ *Supra* n. 91.

⁹⁵ Julie A. Caswell & Eliza M. Mojduszka, *Using Informational Labeling to Influence the Market for Quality Using in Food Products*, 78 Am. J. Agric. Econ. 1248, 1249 (1996).

⁹⁶ *Supra* n. 92.

⁹⁷ See Caswell & Mojduszka, *supra* n. 95, at 1250 (“Information problems in markets for experience goods may also be mitigated if consumers make repeated purchases of a product where their choices are based on prior experience with product quality. . . . Government is unlikely to become heavily involved in requiring informational labeling of these attributes because with repeated purchases the market can satisfactorily self-correct.”); see also Paul Milgrom & John Roberts, *Price and Advertising Signals of Product Quality*, 94 J. Political Econ. 796 (1986) (demonstrating that advertising and other costly expenditures may, in some settings, be used to credibly signal the quality of experience goods prior to purchase); Birger Wernerfelt, *Umbrella Branding as a Signal of New Product Quality: An Example of Signalling by Posting a Bond*, 19 RAND J. Econ. 458 (1988) (demonstrating that producer reputation may, in some settings, be used to credibly signal the quality of experience goods prior to purchase).

In contrast to search and experience goods, credence goods are simply unobservable to consumers.⁹⁸ Examples of credence attributes in food products include safety and nutritional content,⁹⁹ and the level of animal welfare associated with food production.¹⁰⁰ Because problems of asymmetric information and uncertainty are largely intractable for credence goods, operable markets for these goods often fail to exist.¹⁰¹ In some cases, however, markets for credence goods can be empowered by turning credence attributes into search attributes through labeling practices bolstered by clear standards and credible monitoring schemes.¹⁰²

An implicit assumption underlying the previous description of the market-regulation hypothesis was that consumers could accurately perceive the level of animal welfare associated with the products they were buying, presumably because information relating to animal-welfare practices could be conveyed to consumers on the product label. But to have informative value, labeling requires both credibility and clarity in message.¹⁰³ I argue that under current labeling practices, animal welfare remains a strictly credence attribute because animal-welfare labeling exhibits neither credibility nor clarity in disclosing actual animal-welfare practices to consumers.

⁹⁸ *Supra* n. 93.

⁹⁹ Caswell & Mojduszka, *supra* n. 95, at 1250.

¹⁰⁰ Nicole J. Olynk et al., *Verifying Credence Attributes in Livestock Production*, 42 J. Agric. & Applied Econ. 439, 440 (2010) (available at <http://ageconsearch.umn.edu/bitstream/92578/2/jaae423ip3.pdf> (accessed Apr. 13, 2013)) (“For example, at no point before, after, or during consumption of a pork chop is the consumer able to determine the housing system used to raise the hog. Along the same lines, at no point before, during, or after consumption could a consumer of milk determine if the cows that produced that milk had access to pasture.”).

¹⁰¹ See Elise Golan et al., *Economics of Food Labeling*, Agric. Econ. Rpt., No. 793 13 (U.S. Dept. Agric. Dec. 2000) (available at <http://ageconsearch.umn.edu/bitstream/34069/1/ae000793.pdf> (accessed Apr. 13, 2013)) (“Asymmetric information may particularly be a problem in markets for foods with negative credence attributes or for markets in which information has a public good aspect. In these cases, firms may have no incentive to provide consumers with information. As a result, consumers may end up purchasing goods that do not match their preferences. In this case, the market does not work efficiently: goods that would be profitable with full disclosure may go unproduced while those of lesser value to consumers are produced instead.”).

¹⁰² See Caswell & Mojduszka, *supra* n. 95, at 1251–53 (discussing the theory and practice of transforming credence attributes into search attributes through credible informational labeling); see also Jill J. McCluskey, *A Game Theoretic Approach to Organic Foods: An Analysis of Asymmetric Information and Policy*, 29 Agric. & Resource Econ. Rev. 1, 5–8 (Apr. 2000) (available at <http://ageconsearch.umn.edu/bitstream/31334/1/29010001.pdf> (accessed Apr. 13, 2013)) (noting that for informational labeling to be credible, conformance with claims must be subject to third-party monitoring and consumers must have repeat interactions with producers).

¹⁰³ Golan et al., *supra* n. 101, at 15 (“Regardless of the objective, effective labeling hinges on the existence of standards, testing, certification, and enforcement services.”).

1. *Current Labeling is Non-credible*

In the U.S., voluntary animal-welfare labeling is currently not a credible source of information about the treatment of the agricultural animals associated with an animal product. Put another way, although statements about heightened animal-welfare practices are often placed on animal-product labels, there are not strong reasons for consumers to actually *believe* these claims. Lack of credibility is due in part to insufficient regulatory oversight, and in part to current practices in voluntary animal-welfare labeling.

To be clear, deficiencies in regulatory oversight are not attributable to any lack of regulatory authority: at the federal level, both the U.S. Department of Agriculture (USDA) and the U.S. Food and Drug Administration (FDA) maintain statutory authority to regulate the labels of animal products in order to prevent the inclusion of false or misleading statements.¹⁰⁴ The problem with regulatory oversight is lack of enforcement. While technically requiring pre-market approval of all animal-product labels,¹⁰⁵ the USDA inspects labels merely to determine conformity with producer-submitted affidavits regarding the claimed welfare practices.¹⁰⁶ The FDA does not conduct any pre-market label checking, but does review a small number of labels through incidental post-market monitoring each year.¹⁰⁷ In practice, federal protections against false and misleading statements may be most effective when outside claims are levied against a false or misleading

¹⁰⁴ For meat products, USDA authority is provided by the Federal Meat Inspection Act. 21 U.S.C. § 601(n) (2006) (“The term ‘misbranded’ shall apply to any carcass, part thereof, meat or meat food product under one or more of the following circumstances: (1) if its labeling is false or misleading in any particular . . .”). For poultry products, authority is provided by the Poultry Products Inspection Act. 21 U.S.C. § 457(c) (2006) (“No article subject to this chapter shall be sold or offered for sale by any person in commerce, under any name or other marking or labeling which is false or misleading . . .”). FDA authority is provided by the Federal Food, Drug, and Cosmetics Act. 21 U.S.C. § 343(a) (2006) (“A food shall be deemed to be misbranded . . . [if] its labeling is false or misleading in any particular . . .”). FDA’s jurisdiction is residual to USDA regulation. *See generally* U.S. Dept. of Agric., *A Guide to Federal Food Labeling Requirements for Meat and Poultry Products* 7–11 (R. Post et al. eds., 2007) (available at http://www.fsis.usda.gov/pdf/labeling_requirements_guide.pdf (accessed Apr. 13, 2013)) [hereinafter *Food Labeling Requirements*] (describing the different authorities of the USDA and FDA in regulating the labels of animals products, and explaining interactions between these regulatory regimes).

¹⁰⁵ *Food Labeling Requirements*, *supra* n. 104, at 7–8.

¹⁰⁶ U.S. Dept. of Agric., *Animal Production Claims: Outline of Current Process* (available at <http://www.fsis.usda.gov/OPPDE/larc/Claims/RaisingClaims.pdf> (accessed Apr. 13, 2013)).

¹⁰⁷ *Food Labeling Requirements*, *supra* n. 104, at 8 (“FDA has promulgated regulations establishing requirements for all aspects of labeling and monitors labeling compliance primarily through random post-marketing surveillance. FDA reviews only a small portion of labels on food products falling under its jurisdiction. FDA’s label review generally arises in connection with an informal request for review by a manufacturer, a trade complaint by a competitor, a consumer inquiry, or an FDA on-site inspection of a manufacturing facility.”).

animal-welfare label—but note that prerequisite to such a claim is knowledge of a producer’s actual animal-welfare practices, the absence of which is the very thing motivating the use of animal-welfare labels in the first place.

Current practices in animal-welfare labeling also serve to undermine label credibility. One problem is heavy reliance on voluntary standard setting by individual producers and industry trade associations:¹⁰⁸ few such enhanced-welfare programs employ animal-welfare experts at any step of the process, and almost no industry labeling programs permit third-party auditing to ensure that even self-made standards are being satisfied.¹⁰⁹ Regardless of the factual efficacy of self-auditing,¹¹⁰ the *ipse dixit* nature of industry labeling programs makes credible disclosure of animal welfare difficult to imagine.

A more subtle problem with current voluntary labeling practices is the potential crowd-out of credible welfare labels. Credible labeling *can* be achieved by producer participation in third-party certification programs that conduct external audits to ensure conformity with standards; examples include Certified Humane,¹¹¹ Animal Welfare Approved,¹¹² Global Animal Partnership,¹¹³ and American Humane Certified.¹¹⁴ Alternatively, individual producers might achieve credi-

¹⁰⁸ See e.g. Natl. Cattlemen’s Beef Assn., *Cattle Health*, <http://www.bqa.org/default.aspx> (accessed Apr. 13, 2013) (discussing the voluntary “Beef Quality Assurance” program); Natl. Pork Bd., *History: Pork Quality Assurance Plus*, <http://www.pork.org/Certification/2338/pqaPlus.aspx> (accessed Apr. 13, 2013) (discussing the voluntary “Pork Quality Assurance Plus” program).

¹⁰⁹ An exception is the United Egg Producer’s (UEP) “UEP Certified” program. See United Egg Producers, *Animal Husbandry Guidelines for U.S. Egg Laying Flocks 2010 Edition 5* (2010) (available at <http://www.uepcertified.com/pdf/2010-uep-animal-welfare-guidelines.pdf> (accessed Apr. 13, 2013)) (“To assure compliance with the Animal Husbandry Guidelines, each UEP Certified company will be audited annually by independent auditors . . . designated and approved by UEP.”).

¹¹⁰ See Mench, *supra* n. 17, at 309 (describing industry claims about the frequency and efficacy of self-auditing).

¹¹¹ Certified Humane, *Overview*, <http://www.certifiedhumane.org/index.php?page=overview> (accessed Apr. 13, 2013). The Certified Humane program is administered by Humane Farm Animal Care. Farmers are subject to inspection before certification is issued or renewed, with required welfare practices exceeding current industry standards. *Id.*

¹¹² Animal Welfare Approved, *Policy Manual* (2013) (available at <http://www.animalwelfareapproved.org/wp-content/uploads/2013/01/Policy-and-Guidelines-2013-v7.pdf> (accessed Apr. 13, 2013)). Animal Welfare Approved has rigorous certification standards and farmers are subject to audits by organization auditors. *Id.* at 76.

¹¹³ Global Animal Partn., *The 5-Step Program: Our Process*, <http://www.globalanimalpartnership.org/the-5-step-program/our-process/> (accessed Apr. 13, 2013). Global Animal Partnership maintains a five-step certification program in which farmers are audited by authorized third-party certification companies. *Id.*

¹¹⁴ Am. Humane Assn., *About Humane Heartland*, <http://humaneheartland.org/our-farm-programs> (accessed Apr. 13, 2013). American Humane Certified is maintained by the American Humane Association. It is a voluntary, third-party auditing process open to producers that adopt enhanced-welfare standards. In some cases, video monitoring has been used to ensure humane practices. *Id.*

bility by associating a label with transparency in husbandry practices (e.g., by streaming live videos of animal treatment online).¹¹⁵

The problem is that labeling itself may suffer a form of credence property. To hurried and uninformed consumers,¹¹⁶ the differences between credible and non-credible animal-welfare labels are unlikely to be immediately apparent. Consumers can research the verification methods behind different welfare labels, but the transaction costs involved in program checking may become prohibitive as the number and complexity of alternative labels grows. To the extent that credible labeling programs fail to distinguish themselves from non-credible programs,¹¹⁷ costly verification measures¹¹⁸ may be crowded out of strongly price-competitive markets.

2. *Current Labeling is Unclear*

Beyond credibility concerns, a fundamental barrier to effective animal-welfare disclosure is lack of clarity in animal-welfare labels. Unclear animal-welfare labeling results from an absence of standardized terminology, as well as from the misleading use of welfare claims.

An illustrative example is use of the term “free range” or “free roaming” on an animal-product label. It seems intuitively true that many consumers interpret “free range” to mean that animals spend considerable time in a pastoral environment.¹¹⁹ In contrast, USDA defines “free range or free roaming” as follows: “Producers must demonstrate to the Agency that the *poultry* has been allowed access to the outside.”¹²⁰ Commentators have been fast to note that conditions satisfying mere “access to the outside” can be jarringly disparate from the

¹¹⁵ See Olynk et al., *supra* n. 100, at 442 (“Self-verification can be accomplished through documenting production processes in various ways using video, photographs, or even detailed written records of production practices.”).

¹¹⁶ Julie A. Caswell & Daniel I. Padberg, *Toward a More Comprehensive Theory of Food Labels*, 74 Am. J. Agric. Econ. 460, 462 (1992) (“The consumer is often harried and hurried, and grocery shopping logistics limit the potential for significant use of labeling information in making purchase decisions.”).

¹¹⁷ See Olynk et al., *supra* n. 100, at 445 (noting consumers’ apparent lack of interest in different animal-welfare-claim verification measures). One interpretation of consumer disinterest is that *all* certification measures may be distrusted on the grounds that credible measures cannot be distinguished from non-credible measures.

¹¹⁸ See *id.* at 450 (discussing apparent variation in verification costs by farm and monitoring measures).

¹¹⁹ E.g. United Poultry Concerns, Inc., “Free-Range” Poultry and Eggs: Not All They’re Cracked Up To Be 1 (Oct. 12, 2009) (available at <http://www.upc-online.org/freerange/freerange.pdf> (accessed Apr. 13, 2013)) (“‘Free-range’ evokes a positive image of chickens and turkeys living outdoors with plenty of fresh air, sunshine and open space to roam in.”).

¹²⁰ U.S. Dept. of Agric., Food Safety Info. Serv., *Meat and Poultry Labeling Terms 1* (Apr. 2011) (available at http://www.fsis.usda.gov/PDF/Meat_and_Poultry_Labeling_Terms.pdf (accessed Apr. 13, 2013)) (emphasis added).

green fields and open air that a natural reading of the label would tend to conjure.¹²¹

At present, “free range/roaming” is the only label defined by USDA that directly relates to animal welfare,¹²² and even this is limited to poultry raised for consumption—excluding egg-laying hens and all other animals from the regulatory definition.¹²³ “Free range” as applied to animals *other than poultry raised for consumption* is similar to “Cage free,” “Grass fed,” “Pasture-raised,” and other enhanced-welfare-claim terminology used by industry without standardized definition and often to misleading effect.¹²⁴

While it is easy to focus on the potential for deception in animal-welfare labeling, lack of standardization is probably the more serious problem. For example, because a remarkably wide array of living conditions will presumably suffice to allow for a low-animal-welfare producer to label a product as “pasture-raised,” it may be difficult for a high-animal-welfare producer to effectively disclose to consumers that animals were actually raised in an environment closer to consumer expectations. As noted previously, the inability of consumers to distinguish between welfare standards through labeling may quickly result in an *unwinding* or *race-to-the-bottom* effect in highly price-competitive markets.¹²⁵

¹²¹ See Animal Welfare Approved, *What do Food Labels Really Mean?*, <http://www.animalwelfareapproved.org/consumers/food-labels> (accessed Apr. 13, 2013) [hereinafter *What do Food Labels Really Mean?*] (“[T]he type of outdoor access provided (such as pasture or dirt lot), the length of time animals are required to have outdoor access, and how this is verified is not legally defined, and therefore varies greatly from facility to facility. There is *no guarantee that birds actually go outside.*” (emphasis added)); see also Animal Welfare Approved, *Food Labeling for Dummies: A Definitive Guide to Common Food Label Terms and Claims* (2011) (available at <http://www.animalwelfareapproved.org/wp-content/uploads/2012/10/Food-Labeling-for-Dummies-screen-v8-10-26-12.pdf> (accessed Apr. 13, 2013)) (commenting on the meaning and value of many animal-product labeling terms); Animal Welfare Inst., *A Consumer’s Guide to Food Labels and Animal Welfare* (Aug. 2012) (available at http://www.awionline.org/sites/default/files/products/12_FoodLabelGuide080212.pdf (accessed Apr. 13, 2013)) (same).

¹²² But note that some animal-welfare standards are subsumed in organic labeling. See 7 C.F.R. § 205.239 (2012) (“The producer of an organic livestock operation must establish and maintain year-round livestock living conditions which accommodate the health and natural behavior of animals, including: (1) Year-round access for all animals to the outdoors, shade, shelter, exercise areas, fresh air, clean water for drinking, and direct sunlight, suitable to the species, its stage of life, the climate, and the environment . . .”). See also *infra* nn. 143–146 and accompanying text (discussing different dimensions of food quality and the interaction of labels across dimensions).

¹²³ *What do Food Labels Really Mean?*, *supra* n. 121 (“When used to describe laying hens [i.e. poultry not raised for consumption] and other animals, the terms ‘free range’ and ‘free roaming’ are not legally defined at all, and there is no requirement to demonstrate that birds and animals have even had access to the outside, let alone any reference to other management practices.”).

¹²⁴ See *generally id.* (noting that many commonly used enhanced-welfare labels are not subject to any standardized definition or verification process).

¹²⁵ See *e.g.* Golan et al., *supra* n. 101, at 7–8 (noting that consumer skepticism may have a self-reinforcing effect, with the expectation of low-quality provisions actually leading to uniformly low-quality provisions).

Lack of standardization is also a problem for animal-welfare certification programs. Major animal-welfare certification programs¹²⁶ involve different welfare standards and auditing procedures.¹²⁷ Despite a common goal of certifying the use of adequate animal-welfare practices, these programs differ dramatically in terms of verification processes, transportation time limits, outdoor access requirements, rules for litter/waste management, sleep/dark requirements, and minimum space allowances.¹²⁸ Absent considerable prior research, consumers are unlikely to make informed decisions between competing certification programs at the point of purchase. Lack of standardization may also blur the distinction between unverified producer claims and externally audited certification programs.

B. Market Regulation in Theory (Revisited)

Previous theoretic treatment of the market-regulation hypothesis was based on an implicit assumption that consumers were able to observe animal welfare at the point of purchase. As this Article has argued, however, animal welfare is probably best understood as a credence attribute that cannot be observed by consumers either before or after consumption of an animal product. Intuitively, most economic models of goods with credence-type attributes result in under-provision of the attribute.¹²⁹ In the case of the market-regulation hypothesis, changes in theoretic predictions following integration of a credence property are particularly instructive.

Consider the model of animal-welfare provision described previously. The key insight into the effect of the credence property of animal welfare on consumer behavior is that while consumers may still prefer higher levels of animal-welfare provision, w , they cannot observe the particular level of animal welfare associated with a given product.¹³⁰ Consumer utility might thus incorporate a preference for higher aver-

¹²⁶ See e.g. *supra* nn. 111–114 and accompanying text (identifying certification programs administered by Humane Farm Animal Care, Animal Welfare Approved, the Global Animal Partnership, and the American Humane Association).

¹²⁷ See e.g. Humane Farm Animal Care, *Comprehensive Animal Welfare Standards Comparison by Program—Chickens, Beef Cattle, and Pigs* (Feb. 4, 2013) (available at http://www.certifiedhumane.org/uploads/pdf/Comparison_Charts/standardscomparisonchart.pdf (accessed Apr. 13, 2013)) (comparing standards between various labels: Humane Farm Animal Care, Certified Humane, Animal Welfare Approved, Global Animal Partnership, USDA Organic, and American Humane Certified).

¹²⁸ *Id.*

¹²⁹ See e.g. George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q. J. Econ. 488, 488 (1970) (“There are many markets in which buyers use some market statistic to judge the quality of prospective purchases. In this case there is incentive for sellers to market poor quality merchandise, since the returns for good quality accrue mainly to the entire group whose statistic is affected rather than to the individual seller. As a result there tends to be a reduction in the average quality of goods and also in the size of the market.”).

¹³⁰ *But cf.* Winand Emons, *Credence Goods and Fraudulent Experts*, 28 RAND J. Econ. 107 (1997) (providing a model where consumers correctly infer credence-good provision from observable market data).

age animal-welfare provision, $\tilde{w} = (w_A + w_B) / 2$, but utility cannot incorporate preferences over the (unobservable) animal-welfare provision of each individual producer, w_A and w_B .¹³¹ This substantially changes the market equilibrium.

In the third stage of the game, consumers decide which animal product to buy. Without the ability to perceive the level of animal welfare associated with a given product, all consumers buy the less-costly product, regardless of how strongly animal welfare is valued:

$$(6) \quad \theta \bar{w} - p_A \geq \theta \bar{w} - p_B \Leftrightarrow p_A \leq p_B \text{ for all } \theta$$

Intuitively, because average agricultural animal welfare is the same no matter which product the consumer chooses, it is only rational for the consumer to purchase the less-expensive product.

In the second stage of the game, producers select prices with the knowledge that full market demand will accrue to whichever producer chooses the lower price. This form of competition is commonly referred to as Bertrand price competition,¹³² and leads to the well-known result that both producers price at marginal cost.¹³³ That is, through fierce price competition, each producer lowers prices as far as they can without incurring negative economic profits.

In the first stage of the game, producers select animal-welfare provision levels. Anticipating subsequent play in stages two and three, each producer realizes their choice of welfare provision will not affect demand for their product (as consumers' purchasing decisions are based on relative product prices alone). As such, each producer faces the following (trivial) welfare-provision problem:

$$(7) \quad \max_{w_A} -cw_A \text{ and } \max_{w_B} -cw_B$$

As animal-welfare provision entails a positive marginal cost and no marginal benefit, each producer optimally selects the minimum possible level of welfare provision: $w_A^* = w_B^* = 0$.

In summary, when modeling animal welfare as a credence attribute, theory predicts all producers will adopt minimal animal-welfare practices. It is important to note the particular ways in which equilibrium under the credence property differs from the market-regulation

¹³¹ The following analysis generalizes to many alternative forms of animal-welfare valuation beyond a simple arithmetic average. Consumers do not even need to accurately perceive the average level of welfare provision in practice. The following results obtain generally under any form of utility in which all products are treated as having a common level of animal-welfare provision.

¹³² Joseph Louis François Bertrand, *Review of Walras's Mathématique de la Richesse Sociale and Cournot's Recherches sur les Principes Mathématiques de la Théorie des Richesses*, 67 *J. De Savants* 499 (1883) (translated in Jean Magnan de Bornier, *The "Cournot-Bertrand Debate": A Historical Perspective*, 24 *History Political Econ.* 623, 646–53 (1992)).

¹³³ See generally David M. Kreps, *A Course in Microeconomic Theory* 330–35 (Princeton U. Press 1990) (providing an approachable explanation of Bertrand competition and its properties).

hypothesis. First, all producers adopt minimal animal-welfare standards in equilibrium. Second, because all producers provide the same (minimal) level of animal welfare, price competition between producers becomes intense, with all consumers buying only the cheapest available product.

The consistency of the credence-good equilibrium predictions with empirical data on the market for animal-welfare provision is striking, and underscores the plausibility of the suggested explanation of the welfare-preference paradox: i.e., that consumers fail to demand enhanced-welfare animal products not out of any lack of concern or weakness of will on their part, but because the credence property of animal-welfare provision effectively forecloses the market for this good in the first place. If the credence-good explanation of the welfare-preference paradox is correct, then it follows that market regulation of agricultural animal welfare can be empowered simply by eliminating the credence property of animal-welfare provision.

V. EMPOWERING MARKET REGULATION

If the credence property of animal-welfare provision explains the failure of market regulation, then empowering market regulation is a simple matter of changing animal welfare from a credence attribute (unobservable even after consumption) into a search attribute (observable to consumers at the point of purchase). Put less abstractly, market regulation can be empowered by changing animal-welfare labeling so that it more effectively conveys actual animal-welfare practices to consumers. The remainder of this Part discusses practical details in the empowerment of market regulation, commenting on the structure of effective product labeling, but also noting inherent limitations in a labeling solution to animal-welfare provision.

A. *Eliminating Credence through Product Labeling*

At a high level of generality, effective animal-welfare labeling must be both clear and credible in disclosing the welfare practices associated with animal products.¹³⁴ As should be obvious, however, the gritty details of a realistic animal-welfare labeling regime are beyond both the scope and expertise of this (largely theoretic) Article. While leaving the difficult task of articulating the specifics of an effective animal-welfare labeling regime to future work, this Section offers three high-level *structural* features of product labeling that may provide a helpful framework for future efforts: these are (1) harmonization, (2) verification, and (3) integration.

¹³⁴ See McCluskey, *supra* n. 102 and accompanying text (emphasizing the importance of credibility in any strategy to eliminate a credence property through product labeling).

1. Harmonization

As noted previously, the current market for agricultural animal welfare is overrun by a profusion of competing animal-welfare labels.¹³⁵ Harmonization around a single, dominant certification program may provide a number of benefits. First, existence of a dominant labeling program may reduce transaction costs in consumers' search for high-welfare animal products and may offer retailers attractive logistical simplicity.¹³⁶ Second, a reduction in label variability may provide the related benefit of improving consumers' ability to consider animal welfare in comparison to other relevant information on animal-product labels.¹³⁷ Third, there is some evidence that social consensus on the importance of animal-welfare provision—better reflected by a dominant and focal labeling program than by fractious competing programs—may increase consumer valuation of enhanced-welfare animal products.¹³⁸

While harmonization of standards seems a likely aspect of any effective product-labeling regime, two important qualifications are in order. First, this Article makes no attempt to suggest from whence harmonization around a single welfare standard should come. There are strong arguments that central governments often have an advantage over private programs in setting labeling and certification standards,¹³⁹ but nothing in the present analysis argues against the

¹³⁵ See *supra* nn. 108–114 and accompanying text (describing a variety of labeling schemes, including some programs administered by industry groups and others administered by third-party organizations).

¹³⁶ This has been largely the experience of unified organics labeling in the EU. See *EU Labeling Study*, *supra* n. 77, at 20–21 (“First, [the introduction of a unified UE organic label] helped to overcome the former fragmentation of the market resulting from the existence of several much smaller, in many cases national private standards and made organic products much more interesting for professional retail chains for which efficient logistics and constant and large-scale supply are crucial. Second, the introduction of an EU logo improved the recognisability of organic products for low involvement consumers who were not willing to understand the (often complex) world of private organic standards.”).

¹³⁷ Cf. Lars Noah, *The Imperative to Warn: Disentangling the “Right to Know” from the “Need to Know” about Consumer Product Hazards*, 11 *Yale J. on Reg.* 293, 381–91 (1994) (commenting that “[i]ndiscriminate and cumulative warnings” lead to “the twin evils of dilution and overreaction”: the former occurring when excessive labeling overwhelms consumers to the point where they “begin to ignore product labels altogether,” and the latter occurring where consumers develop exaggerated interpretations of risks and rewards from label warnings and claims).

¹³⁸ Bennett & Blaney, *Social Consensus*, *supra* n. 14, at 510–11 (noting that an induced perception of social consensus appears to drive willingness to pay in contingent valuation surveys).

¹³⁹ *E.g.* Golan et al., *supra* n. 101, at 11 (“Services provided by entities that are trusted and well known by a large number of consumers will be most successful in reducing search and information costs, facilitating market transactions, and increasing market efficiency. In many cases, national governments or associations of national governments may be the most widely recognized and reputable third-party providers of labeling services.”).

possibility of coordination on a single private-sector animal-welfare certification program.¹⁴⁰ Second, it should be noted that harmonization around a single animal-welfare label may (by necessity of achieving coordination) imply a more moderate level of animal-welfare provision than some extant certification programs currently require.¹⁴¹

2. Verification

Current agricultural animal-welfare labeling also suffers from an acute lack of credibility.¹⁴² It is practically unlikely that any labeling regime will be able to eliminate the credence property of animal-welfare provision, unless it provides for external monitoring of standard compliance.¹⁴³ Additionally, it should be noted that credibility is a function of both the verification process (e.g., random auditing, continuous monitoring, etcetera) *and* the reputation and trustworthiness of the verifying entity.¹⁴⁴ While government programs are often thought particularly credible in providing monitoring services,¹⁴⁵ a history of delinquent animal-welfare enforcement practices by the U.S. Department of Agriculture may act to undermine this presumption.¹⁴⁶

¹⁴⁰ In fact, in their seminal work on credence goods, Darby and Karni conclude that “no strong case can be made for governmental intervention even in markets where deliberate deception is a regular practice. This is because governmental evaluators will be subject to much the same costs and temptations as are present for private evaluators.” Darby & Karni, *supra* n. 93, at 87.

¹⁴¹ *But cf. EU Labeling Study, supra* n. 77, at 21 (“[T]he somewhat lower but more harmonised EU standard for organic products marked a change from the ‘gold standard’ strategies formerly followed by private standards to a ‘broad market change’ strategy that addresses modern retail and low involvement occasional buyers. Interestingly, this strategy did not damage private standards but allowed the internal segmentation of the market for organic products into a ‘(somewhat) lower standard, mass market’ segment addressing occasional buyers with a limited willingness to pay and ‘higher standard, niche market’ segments addressing the traditional intensive buyers of organic products.”).

¹⁴² *See supra* nn. 104–118 and accompanying text (arguing that current labeling is non-credible due to lack of regulatory enforcement and a reliance on unverified conformance to ambiguous standards).

¹⁴³ *See e.g. McCluskey, supra* n. 102, at 8 (“The analysis in this paper shows that both a repeat-purchase relationship and third-party monitoring are required for high-quality credence goods to be available.”); *EU Labeling Study, supra* n. 77, at 21 (“With regard to the design of animal welfare certification standards, independent audits are often perceived as the single most important element of a certification standard.”).

¹⁴⁴ Golan et al., *supra* n. 101, at 11 (“In general, the value of the labeling service depends on the credibility and reputation of the entity providing the service. Services provided by entities that are trusted and well known by a large number of consumers will be most successful in reducing search and information costs, facilitating market transactions, and increasing market efficiency.”).

¹⁴⁵ *Id.*

¹⁴⁶ *See supra* nn. 29–33, 104–106, and accompanying text (noting historic deficiencies in USDA’s enforcement of current agricultural animal-welfare regulations and labeling claims, which may substantially undermine consumer confidence in any labeling scheme predicated on USDA monitoring of conformance). *See also* Darby & Karni, *supra* n. 93, at 86–87 (noting that government monitoring may have little value when

Beyond external monitoring, standardization of animal-welfare claims may lead to improved credibility through endogenous monitoring practices. The informal theory is that the producers of (truly) enhanced-welfare animal products are unfairly prejudiced when relatively low-welfare competitors dishonestly claim to employ similarly enhanced-welfare practices in their own production.¹⁴⁷ Harmonization around a clear and definite standard of welfare provision may achieve sufficient organizational structure to allow such prejudiced farmers to inform on perceived defectors—providing a sort of continuous monitoring of claim compliance through enhanced-welfare producers' pursuit of their own self-interests.¹⁴⁸

3. Integration

A final—and often overlooked—structural element of a labeling program is how it integrates with other labeling initiatives. In the context of agricultural animal-welfare labeling, two possible opportunities for integration are particularly important. The first is *integration in degree*. If the dominant animal-welfare certification program does not allow for ordinal labeling of animal welfare (e.g., moderate, high, very high),¹⁴⁹ then it may be important that the dominant label integrate cleanly with other third-party labels that can provide higher levels of animal welfare to niche markets serving particularly concerned consumers.¹⁵⁰

government evaluators are “subject to much the same costs and temptations as are present for private evaluators”).

¹⁴⁷ Cf. Mortlock, *supra* n. 29, at 274 (commenting that the “lower production costs” afforded by failure to comply with the Humane Slaughter Act may “give the non-complying slaughterhouse an unfair and illegal competitive advantage in the marketplace”). See generally McInerney, *supra* n. 5, at 26–32 (discussing the cost profile of different marginal improvements in animal-welfare provision).

¹⁴⁸ By contrast, the current regime of voluntary and nonstandard animal-welfare labeling provides few opportunities for such endogenous monitoring. Cf. *EU Labeling Study*, *supra* n. 77, at 31–33 (noting, in the context of a certification program, the difficulty of assessing producer conformance with minimum requirements in the absence of sufficiently definite “operational standards” against which producer conformance can be gauged).

¹⁴⁹ E.g. Fraser et al., *supra* n. 75, at 96 (“[In Austria,] a producer-initiated program uses a numerical scoring system to assess standards of hygiene, disease prevention, animal handling skill, and appropriate housing. Producers achieving a certain overall score can use a distinctive label to identify the product. The program is credited with retaining consumer loyalty for small-scale Austrian producers in the face of lower-priced imports from countries where animal production is more intensive.”).

¹⁵⁰ See Brian Roe & Ian Sheldon, *Credence Good Labeling: The Efficiency and Distributional Implications of Several Policy Approaches*, 89 Am. J. Agric. Econ. 1020–21 (2007) (“First, there is the choice between discrete and continuous labeling: specifically, a label either communicates that a good meets a certain quality threshold (the tuna-fish is dolphin safe) or the exact level of quality being produced (electricity costs for this appliance are \$55 under normal operating conditions). . . . Third, if government labeling is mandated, a choice has to be made between whether or not to allow private certifiers to further communicate quality differences.”); see also *EU Labeling Study*, *supra* n. 77,

A second opportunity for integration is *integration in scope*. While this Article focuses narrowly on consumer preferences for agricultural animal welfare, it is clear that consumers value many other aspects of animal-product quality as well: examples in a food context include environmental practices, use of chemicals and pesticides, taste, and nutritional content.¹⁵¹ Transparency in standards and a strict limitation to issues of animal welfare may improve the ability of a dominant animal-welfare standard to integrate with other standards of quality, allowing for complementarities between different dimensions of product quality and providing consumers with a greater range of options when purchasing animal products.¹⁵²

B. *The Limitations of a Labeling Solution*

Empowered by an effective product-labeling regime, market regulation of agricultural animal welfare has many attractive properties. Because animal-welfare provision is driven directly by consumer preferences (through purchasing decisions), a market-regulation approach avoids the difficult problem of trying to craft direct regulations that appropriately reflect abstract social preferences.¹⁵³ Market regulation also replaces a one-size-fits-all model of animal-welfare provision with a menu-style approach, allowing concerned consumers to purchase products that suit their preference for improved agricultural animal welfare without pricing all animal products outside the tastes of less concerned consumers.

But a labeling solution to market regulation is not without limitations. For one thing, a labeling approach does not address potential externality problems that may exist in the market for animal welfare. For example, in making purchasing decisions, the marginal benefit of welfare provision to a given consumer will not necessarily account for the external benefit that others in the population derive from knowing

at 21 (noting that the EU standard for organic products did not damage private standards but rather allowed for internal market segmentation).

¹⁵¹ *E.g.* Caswell & Mojduzka, *supra* n. 95, at 1248 (“Major categories of food product quality attributes include food safety (e.g., levels of microbial pathogens, residues), nutritional, value (e.g., compositional integrity, taste), package, and process (e.g., animal welfare, environmental impact) attributes.”).

¹⁵² *EU Labeling Study*, *supra* n. 77, at 23 (“An animal welfare labelling scheme should account for the need of other schemes to likewise include all or at least some animal welfare aspects. Therefore, the possibility to integrate an animal welfare label into existing standards or harmonise existing standards with a newly created animal welfare label appears to be important. In addition, transparency that allows interested consumers to find out differences between competing standards is also important.” (emphasis omitted)).

¹⁵³ *Cf.* Charles A. Holt et al., *Water Externalities: Tragedy of the Common Canal*, 78 *S. Econ. J.* 1142, 1153–54 (2012) (noting the impracticality of direct regulation in many circumstances, and the comparative advantage of market-based allocation solutions when socially optimal resource allocations are not *a priori* obvious).

that animals are on average being treated marginally better.¹⁵⁴ The failure of consumers to internalize this external benefit means that market regulation may result in a lower-than-socially-optimal level of welfare provision.

Another limitation of market regulation is that it involves no direct consideration of animals themselves. Welfare is provided not out of direct social concern for animals, but as an indirect corollary of satisfying consumer preferences (one dimension of which is that animals are perceived to be treated adequately well). An implication of this correlative provision process is that the accommodations afforded to animals are tied to what consumers *perceive* to be important, which may not always be the same as what animals actually care about.¹⁵⁵ It should also be noted that a market approach to the regulation of agricultural animal welfare does not necessarily weigh the importance of animal welfare correctly: welfare provision turns on how important animal-welfare practices are to consumers, not on a philosophically satisfying conclusion as to the relative importance of animals vis-à-vis humans.¹⁵⁶

These are important limitations to keep in mind, but should not be seen as an argument against seeking to empower market regulation *now*. Put bluntly, each of the above limitations involves deep questions of theory and philosophy that are simply nowhere near to being resolved at present. By contrast, while a labeling solution to empowering market regulation may be imperfect, the outcome is a concrete and obtainable improvement in the ability of consumers to buy animal products that suit their preferences and, as a corollary, an incremental improvement in the average welfare of agricultural animals. *Perfect* should not act to obstruct *better*.

VI. CONCLUSION

In summary, while consumers in the U.S. evidently value agricultural animal welfare, this country's preferred "market-regulation" approach to the provision of agricultural animal welfare is currently

¹⁵⁴ *E.g.* Jim MacDonald, Panel, *Weighing the Costs and Benefits of Certification Programs: Economic Analyses of Certification Programs* (D.C. Sept. 21, 2005), in *Certification and Education Programs: Current Status of Farm Animal Welfare* 7–8 (U.S. Dept. Agric. 2005) (discussing welfare provision as a positive externality); Norwood & Lusk, *supra* n. 67, at 204 (“[T]here are many people who care about farm animal well-being who do not eat eggs or meat, and thus, as they already do not buy farm animal products at all, they cannot use their food purchases to communicate which farm production processes they prefer . . . this implies that animal welfare is a public good.”).

¹⁵⁵ *See e.g.* Clive Phillips, *The Welfare of Animals: The Silent Majority* 82 (2009) (“There may be a distinct difference between the perceived and actual animal welfare. Both will be relevant for welfare assessment, but the former will be most useful to understand the public position on welfare requirements and the latter for objective improvement.”).

¹⁵⁶ *Cf.* Joshua M. Frank, *The Actual and Potential Contribution of Economics to Animal Welfare Issues*, 10 Socy. & Animals 421, 423 (2002) (arguing that animal welfare should itself be valued as a component of social utility).

falling short of its promise. The welfare-preference paradox is that consumers consistently report a willingness to pay substantial premiums for improved agricultural animal welfare in theory, while simultaneously failing to buy anything other than the cheapest animal products in practice. In this Article, I have argued that the welfare-preference paradox is best understood as evidence of a market failure: current animal-welfare labeling practices are insufficient to rescue animal welfare from its default position as a credence attribute fully unobservable to consumers. This effectively forecloses any actual market for enhanced-welfare animal products, leaving consumers and producers to focus solely on relative product prices when making production and consumption decisions.

The credence property of agricultural animal welfare is attributable to deficiencies in the current practice of voluntary and nonstandard animal-welfare labeling. I argue that current animal-welfare labeling provides neither clear nor credible indication of the actual treatment of animals associated with a particular product. Empowering market regulation of animal welfare is a matter of removing the credence property from animal welfare by improving both the clarity and credibility of product labeling. I propose that future efforts at designing improved animal-welfare labeling focus on harmonization of current standards, provision of credible verification measures, and consideration of opportunities for integration with other labels relevant to animal product quality. Finally, while it must be conceded that market regulation of agricultural animal welfare is far from a perfect solution to this complicated allocation problem, I suggest that empowered market regulation of agricultural animal welfare is a clear step in the right direction.