No. 21-468

IN THE

Supreme Court of the United States

NATIONAL PORK PRODUCERS COUNCIL &
AMERICAN FARM BUREAU FEDERATION,
Petitioners,

v.

KAREN ROSS, *et al*.,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF AGRICULTURAL AND RESOURCE ECONOMICS PROFESSORS AS *AMICI CURIAE* IN SUPPORT OF NEITHER PARTY

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June 17, 2022

WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D.C. 20002

TABLE OF CONTENTS

TABLE OF AUTHORITIES

INTERESTS OF *AMICI CURIAE*[1]

Amici are economists who specialize in the economics of agricultural markets and policy, supply-chain economics, and markets for animal products. They have studied the implications of California's Proposition 12 for hog production and costs, hog and pork prices, and pork consumption for California and the rest of the United States.[2] *Amici* submit this brief to assist the Court in understanding the economic implications of Proposition 12 for California and the rest of the United States, and, in particular, to explain why the basic economic premises of Petitioners' arguments against to Proposition 12 are fundamentally flawed.

Amicus Richard Sexton is Distinguished Professor of Agricultural and Resource Economics at the University of California, Davis. He is a Fellow and Past President of the Agricultural and Applied Economics Association. His research focuses on agricultural

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[1] No counsel for a party authored this brief in whole or in part, and no person other than amici or their counsel made a monetary contribution to this brief's preparation and submission. All parties have consented to this filing.

[2] Some of their research on this topic was funded by the National Pork Board, a check-off funded research organization administered by the U.S. Department of Agriculture that sponsors scientific research on issues of importance related to pork production, marketing, and demand. Professor Sumner has also analyzed the economic effects of Proposition 12 as a part of a University of California study for the California Department of Food and Agriculture regarding proposed regulations to implement Proposition 12. *See* Hanbin Lee, Richard J. Sexton, & Daniel A. Sumner, *Voter-Approved Proposition to Raise California Pork Prices*, Univ. of Cal. Giannini Found. of Agric. Econ., 24 ARE Update, 5–8 (2021), https://s.giannini.ucop.edu/uploads/pub/2021/08/17/v24n6_2.pdf.

markets, industrial organization, and cooperatives. He has authored dozens of peer-reviewed journal articles and book chapters.[3]

Amicus Daniel Sumner is the Frank H. Buck, Jr. Distinguished Professor of Agricultural and Resource Economics at the University of California, Davis. He is a Fellow of the Agricultural and Applied Economics Association. He served as a Senior Economist for the President's Council of Economic Advisers from 1987 to 1988, as Deputy Assistant Secretary at the U.S. Department of Agriculture from 1990 to 1992, and as Assistant Secretary for Economics at the U.S. Department of Agriculture from 1992 to 1993. His research focuses on national and international agricultural economics and policy, and he has

[3] Professor Sexton's publications within the last ten years on topics relevant to this brief include Richard J. Sexton & Tian. Xia, *Increasing Concentration in the Agricultural Supply Chain: Implications for Market Power and Sector Performance*. 10 Ann. Rev. of Res. Econ., 229-51 (2018); Tina L. Saitone, & Richard J. Sexton, *Concentration and Consolidation in the U.S. Food Chain: The Latest Evidence and Implications for Consumers, Farmers, and Policymakers*, Econ. Rev., Special Issue, 25-59 (2017); Tina L. Saitone, & Richard J. Sexton, *Agri-food supply chain: evolution and performance with conflicting consumer and societal demands*, 44 Eur. Rev. of Agric. Econ., 634-57 (2017); Steven C. Blank, Tina L. Saitone, & Richard J. Sexton, *Calf and Yearling Prices in the Western United States: Spatial, Quality, and Temporal Factors in Satellite Video Auctions*, 41 J. Agric. & Res. Econ. 458-80 (2016). Tina L. Saitone, Richard J. Sexton, & Daniel A. Sumner, *What Happens When Food Marketers Require Restrictive Farming Practices?*, 97 Am. J. Agric. Econ., 1021-43 (2015); Richard J. Sexton, 95 *Market Power, Misconceptions, and Modern Agricultural Markets*, Am. J. Agric. Econ., 209-19 (2013); John M. Crespi, Tina L. Saitone, & Richard J. Sexton, *Competition in U.S. Farm Product Markets: Do Long-Run Incentives Trump Short-Run Market Power?*, 34 Applied Econ. Persps. & Policy, 669-95 (2012).

published extensively on the economic impacts of state and local regulations of agricultural production practices, including animal welfare regulations.[4]

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[4] Professor Sumner's publications within the last ten years on topics relevant to this brief include Daniel A. Sumner, Tristan M. Hanon, and Scott Somerville, *Effects of the COVID-19 Pandemic on the Western Dairy Industry*, 19 W. Econ. Forum, 33-50 (2021); Daniel A. Sumner, Robin Goldstein, Jarrett D. Hart, Hanbin Lee, William A. Matthews, & Josue Medellin-Asuara, *Standardized Regulatory Impact Assessment of Proposed Regulations to Implement Proposition 12*, Univ. of Cal., Davis & US Agric. Issues Ctr. (July 2, 2020), https://dof.ca.gov/wp-content/uploads/Forecasting/Economics/Documents/CDFA_Proposition_12_SRIA.pdf; Daniel A. Sumner & Ton Zuijdwijk, *The law and economics of Canada's WTO litigation contesting U.S. country-of-origin labeling (COOL)*, 67 Canadian J. Agric. Econ., 327-47 (2019); Daniel A. Sumner , *Comment on "The Impact of Farm Animal Housing Restrictions on Egg Prices, Consumer Welfare, and Production in California*,*"* 100 Am. J. Agric. Econ., 670-73 (2018); Sebastien Pouliot, & Daniel A. Sumner, *Traceability, Recalls, Industry Reputation and Product Safety*, Eur. Rev. Agric. Econ., 121-42 (2012); John Bovay & Daniel A. Sumner, *Animal Welfare, Ideology, and Political Labels: Evidence from California's Proposition 2 and Massachusetts's Question 3*, 44 J. Agric. & Res. Econ., 246-66 (2019); Daniel A. Sumner, *Economics of US State and Local Regulation of Farm Practices, with Emphasis on Restrictions of Interstate Trade*, 9 Ann. Rev. Res. Econ., 13-31 (2017); William A. Matthews & Daniel A. Sumner, *Effects of housing system on the costs of commercial egg production*, 94 Poultry Sci., 552-57 (2015); Sebastien Pouliot & Daniel A. Sumner, *Differential impacts of country of origin labeling: COOL econometric evidence from cattle markets*, 49 Food Policy, 107-16 (2014); Joy A. Mench, Daniel A. Sumner & John T. Rosen-Molina, *Sustainability of egg production in the United States—The policy and market context*, 90 Poultry Sci., 229-40 (2011); Daniel A. Sumner, William A. Matthews, Joy A. Mench & John Thomas Rosen-Molina, *The Economics of Regulations on Hen Housing in California*, 42 J. Agric. & Applied Econ., 429-38 (2010).

INTRODUCTION AND SUMMARY OF ARGUMENT

Proposition 12 sets forth restrictions on uncooked, pure pork products ("covered" products) sold in California. Most notably, Proposition 12 requires that, except for brief periods, sows whose progeny are used to make covered products sold in California must be afforded at least 24 square feet of space, other than during a brief period around farrowing. Proposition 12 does not impose any housing requirements for the fed hogs whose cuts of meat are eventually consumed in California. Proposition 12 also applies only to uncooked cuts of pork purchased in California; it does not apply to other pork products or to pork mixed with other ingredients.[5]

As part of their Dormant Commerce Clause arguments, Petitioners allege various economic effects of Proposition 12 on producers and consumers of pork outside California. *Amici* take no position on the Dormant Commerce Clause issues presented before the Court in this case, but submit this brief to explain why, as a matter of both economic theory and empirical data, Petitioners' central economic arguments are erroneous and implausible.

Petitioners' analysis rests on the unsupported and plainly incorrect assumption that all pork producers nationwide will be forced to comply with Proposition

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[5] Cal. Health & Safety Code §§ 25990–25994. Petitioners' assertion that "[i]f *any part* of a pig is sold in California, the sow it came from must be Proposition 12-compliant" is incorrect. Pet. Br. 3. Cooked pork and mixed pork products are not subject to Proposition 12, *see* Cal. Health & Safety Code §§ 25990(b), 25991(u), so when these products are sold in California, the sow from which they were derived need not have been Proposition 12-compliant.

12, and that the costs of complying with Proposition 12 accordingly will be passed on to all pork consumers nationwide. But Proposition 12 does not require any pork producer to comply with its provisions. And as *amici* know from their study of the pork industry and as a matter of basic economic incentives and common sense, only those producers for which it is economically beneficial to comply with Proposition 12 will do so. Most producers will have no incentive to comply and will choose not to do so. These non-complying producers will instead serve the vast majority of the North American pork market beyond California's border that does not demand compliance with Proposition 12 standards.[6] The choice to supply Proposition 12-compliant pork is also not all or nothing, as Petitioners suggest; based on amici's experience and interviews with industry experts, it is abundantly clear that processors and marketers, in particular, are likely to choose to segregate their supply chains and supply both compliant and non-compliant products.

Not only are Petitioners' arguments flawed as a reflection of basic economic incentives, but they are factually implausible. *Amici* assess and quantify the likely impacts of Proposition 12 with an economic model of the North American hog and pork markets using standard modeling of economic incentives and related supply and demand impacts.[7]

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[6] For this reason, and as explained further below, the Ninth erred in crediting Petitioners' allegation that, "[a]s a practical matter, given the interconnected nature of the nation-wide pork industry, all or most hog farmers will be forced to comply with California requirements." Pet. App. 9a.

[7] The technical specifications underlying the analysis and findings offered in this amicus brief are set out in Hanbin Lee,

Amici found that implementation of Proposition 12 would yield the following economic results: (1) Pork consumers in California will pay higher prices for uncooked pork cuts and consequently consume less of the products covered by Proposition 12, whereas the effect on pork consumers outside California will be marginal; (2) Only those producers for which market dynamics rationally support compliance (because they will earn higher profits on average) will convert their operations to satisfy Proposition 12, and those producers that choose not to supply the California market will suffer at most only marginal economic harm; (3) The quantity of live hogs produced in North America will not significantly change.

Richard J. Sexton, & Daniel A. Sumner, *Economics of Mandates on Farm Practices: Lessons From California's Proposition 12 Regulations on Pork Sold in California*, Selected Paper Presented at the Annual Meetings of the Agric. & Applied Econ. Ass'n (2021), https://ageconsearch.umn.edu/record/313920?ln=en; *see also* Hanbin Lee, Richard J. Sexton, & Daniel A. Sumner, *Economics of Mandates on Farm Practices: Lessons from Regulation of Pork Sold in California*, UC Davis Agric. Workshop (Oct. 6, 2020), https://arefiles.ucdavis.edu/uploads/filer_public/7f/7c/7f7ca688-9772-4b3a-aa87-1d9880a0b1ab/pork_ag_econ_workshop_hanbin_lee.pdf. These findings will be published as an article in a leading agricultural economics journal. *Amici* have also published a more broadly accessible summary of their findings. *See* Hanbin Lee, Richard J. Sexton, & Daniel A. Sumner, *Voter-Approved Proposition to Raise California Pork Prices*, Univ. of Cal. Giannini Found. of Agric. Econ., 24 ARE Update, 5–8 (2021), https://s.giannini.ucop.edu/uploads/pub/2021/08/17/v24n6_2.pdf; Cal. Health & Safety Code §§ 25990–25994.

ARGUMENT

Petitioners' central economic arguments are implausible and unsupported, both as a matter of economic theory and empirical data. Proposition 12 will affect only a small subset of those entities involved in producing pork in North America. Those entities that decide it is economically beneficial to comply with Proposition 12 will incur the costs to do so and, in turn, be compensated through market processes with higher prices to serve the California market. Out-of-State consumers will not have to pay higher prices for pork and so will see no material impact on their economic welfare.

I. Contrary To The Premise of Petitioners' Argument, Proposition 12 Will Affect Only A Discrete Subset Of Participants In The North American Pork Value Chain.

The pork value chain—also referred to as the supply chain—in North America (Canada and the United States)[8] includes multiple actors and stages: farrowing (i.e., birthing) farms; hog nursery and feeding operations; primary pork processors; secondary pork processors and packaging operations; wholesalers; retailers; and pork consumers. The practicalities and specific rules of compliance with Proposition 12 are concentrated at the farrowing stage. Most farrowing operations will not anticipate enough revenue to cover the higher costs associated with complying with Proposition 12 and so will choose to focus their

[8] The United States and Canada represent an integrated market for the production and sale of pork products, meaning that prices and quantities move together. Accordingly, accurate analyses of economic effects require one to consider the North American market, not the United States alone.

sales outside California, where the vast majority of the pork market resides. Those farrowing operations that do comply will do so because having the ability to sell in California is best for their farm business. This economic logic, borne out in the research findings discussed *supra* Section II, applies similarly to the actors downstream in the value chain.

Farrowing, the first stage of the pork value chain, is where breeding sows produce piglets that generally stay with their mothers for roughly 21 days before being weaned and transferred to nursery operations. Proposition 12 applies at the farrowing stage. For producers that choose to comply, Proposition 12 requires that each sow have at least 24 square feet of space, except for a few days before giving birth and the three-week period after giving birth, when piglets remain with the sow. Currently, the majority of the approximately 7.3 million sows in North America are confined in individual gestation stalls of 14 to 18 square feet. The remainder—about 30% of North American sows (2.2 million)—are kept in forms of group housing, which allow an average of about 20 square feet per sow. Very little sow housing in North America complies with Proposition 12's requirements.

Farrowing operations that already house sows in group pens rather than individual stalls will typically face the lowest costs in adjusting their operations to comply with Proposition 12. These hog operations already have capital facilities for group housing of sows. They also have expertise and experience with management of sows in group housing. *Amici*'s data analysis has indicated that, given that they have fewer and less complex adjustments to comply with Proposition 12, farrowing operations in this category will have lower costs of adjustment to compliance.

Those farrowing operations that convert their facilities and practices to comply with Proposition 12 will incur one-time capital costs of conversion, as well as higher ongoing variable costs of operations due to, for example, higher labor and veterinary costs resulting from increased sow mortality, smaller litters, reduced rates of farrowing, and possibly, reduced feeding efficiency associated with keeping sows in group housing rather than individual stalls.

There are more than enough farrowing operations that presently have group housing to cover the California market, which consumes slightly less than 9% of pork produced in North America.[9] Because it will be least costly for farrowing operations that presently have group housing to comply with Proposition 12, and because there are more than enough such operations to cover the California market, few operations currently using stall housing will likely choose to convert their operations to produce pigs that can be used to produce Proposition 12-compliant products.[10] Other operations thus can maintain their status quo with no conversion or additional variable costs, and continue to supply the

[9] Petitioners assert that "Californians consume 13% of the pork eaten in the U.S." Pet. Br. 8. Because North America exports more pork than it imports, the relevant share of California consumption relative to the amount of pork produced in North America is less than its share of U.S. pork consumption. Also, Canada produces more hogs than it consumes, with many of its weaner pigs coming to the United States for feeding, slaughter, and consumption.

[10] Those farms that were already planning to convert to group housing and will now plan for added space per sow to meet the Proposition 12 standards may be the exception.

approximately 91% of the market for North American hogs beyond California's border.

A central premise of Petitioners' economic-effects argument is that *all* farrowing operations nationwide will be required to comply with Proposition 12. See Pet. Br. 16, 29, 46. But that argument is not plausible as a matter of basic economics, given the large amount of non-California demand for pork. Any processor that chose to supply Proposition 12-compliant pork and sell it outside of California would quickly be undercut on price by others that did not incur the higher costs to comply with California's regulations. The clear implication is that only processors for which selling in California makes economic sense will do so, whereas others will continue as they have been and sell to non-California markets.

Specifically, assume for the sake of the argument that a processor required all the hogs supplied to it by farmers to be compliant with Proposition 12. The processor would save on the costs of segregation that result from processing both compliant and non-compliant hogs, and the processor's pork products could be sold anywhere. But choosing to comply with Proposition 12 across all operations creates a profitable opportunity for competing processors *not* to comply, thereby avoiding paying higher costs for compliant hogs and consequently being able to more cheaply produce and sell pork to the rest of the North American market. The ability of some processors to choose *not* to comply with Proposition 12 is facilitated by the fact that supply-chain contracting for hogs ready for slaughter is largely accomplished through dedicated supply-chain relationships, meaning that farrowing operations, nurseries, and finishing operations usually have a contract to produce hogs for a specific processor. A processor that sees a profitable opportunity to tailor its business to the non-California market, which buys the vast majority of pork, will inform its upstream suppliers that it does not need hogs compliant with Proposition 12 and so will not pay extra for them. Those upstream operators (hog farmers) will then proceed with business as usual, rather than incurring higher costs to comply with Proposition 12. Their primary processors will then be able to sell to buyers supplying the rest of North America more cheaply than any processor that chooses to dedicate its entire operations to hogs compliant with Proposition 12.[11]

Petitioners' suggestion that "buyers of market hogs everywhere will demand that their suppliers comply with Proposition 12" makes no economic sense and is directly counter to the economic incentives. Pet. Br. 16; *see also id.* at 29, 46. If a producer chooses to sell more expensive, Proposition 12-compliant pork "everywhere," it will be undercut by its lower cost competitors and lose market share.

Accordingly, the economic implications of Proposition 12 for farrowing operations are straightforward. The farrowing operations that convert to comply with Proposition 12 will farrow less than 9% of the pigs in

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[11] This reasoning does not preclude that a few processing facilities may specialize in shipping to the California market. They would have to pay more for the hogs that they buy and may have scale disadvantages and higher live-hog transport costs associated with sourcing hogs over an expanded geographic area. If this strategy were viable, they would make up for their higher costs by receiving a higher price for covered pork products that were documented as compliant with Proposition 12. These operations would not compete to sell pork products outside of California.

North America and will do so because such a shift—and the resulting ability to compete in the California market—is the best option for that farm business. Those that convert will generally anticipate sufficiently higher revenues from sales to the California market to cover the higher variable costs and annualized value of higher capital costs associated with Proposition 12 compliance. In contrast, farrowing operations that do not anticipate enough revenue to cover their own higher costs associated with compliance on their farm will choose not to sell in the California market and will instead continue to supply the rest of North America.

Looking to the stages of the pork value chain beyond farrowing, similar dynamics exist. Once piglets leave farrowing operations about 21 days after birth, they are transferred to nursery operations (sometimes on the same farm) and eventually to finishing operations (again, sometimes on the same farm) before being transported to processing facilities. Proposition 12 will have little direct effect on nursery and hog-finishing operations. Piglets that are the product of farrowing that is compliant with Proposition 12 must maintain identification of compliant stock in nursery and finishing operations, but otherwise require no special treatment.

As for the next steps in the chain, primary processors acquire market hogs primarily from their contract growers (hog farms with finishing operations). Processors then slaughter the hogs and produce cuts and pork products sold to a variety of secondary processing operations, wholesalers, retailers, and food-service operators. The resulting pork products include not only the covered uncooked cuts of pork (such as bacon and pork chops), but also pork destined for cooked products (such as lunch meats and fully cooked hams); pork used as ingredients in mixed foods (such as hotdogs, soups, pizza, and meat mixtures); and, finally, ground pork and sausage, which are not cuts of pork. Again, Proposition 12 applies only to the first category—uncooked cuts of pork.

As at the farrowing stage, processing operations that produce uncooked cuts of pork compliant with Proposition 12 will incur higher costs per animal and per pound of pork due to segregation of compliant from non-compliant hogs, and to segregation of pork products to allow traceability. Such processing costs include those related to batch processing compliant and non-compliant hogs, additional record keeping, the creation of new stock-keeping units to identify California-compliant pork, and possibly expanded warehouse capacity. The segregation and traceability costs also apply to shipping and marketing companies along the supply chain, including those that are consumer-facing, such as retail grocers, restaurants, and food-service operations.

However, just like the farmers at the farrowing stage, processors and other downstream segments of the pork supply chain may choose not to comply with Proposition 12 and thus not to participate in the California market, but instead to supply the massive non-California demand for pork. As with hog farms, processors will comply with Proposition 12 only if they anticipate a net revenue stream from serving California that meets or exceeds the higher costs of producing and marketing California-compliant pork.

II. Economic Modeling Quantifies That Only A Subset of Pork Producers Nationwide Will Choose To Comply With Proposition 12 And That Compliance Costs Will Be Borne Only By California Consumers.

To demonstrate the cost implications of Proposition 12 for the pork value chain described above, *amici* constructed an economic model of the North American pork industry. *Amici*'s model is built on standard economic principles and calibrated to fit current market conditions based on economic data and supply and demand estimates from the scientific literature.[12] It is also based on data collected from written surveys and interviews that *amici* conducted with key personnel operating at various stages of the hog/pork supply chain regarding the effect of compliance with Proposition 12 on practices, outcomes, and costs.

The model includes specifications for: (1) the supply of live hogs; (2) consumer demand for both covered and non-covered pork products; and (3) processing and wholesale marketing costs for compliant and non-compliant pork. The model yields projections for the farm prices of both California-compliant and non-compliant hogs. It also provides projections for quantities of production and marketing of compliant and non-compliant hogs and pork products, as well as California and non-California consumer prices for covered and non-covered pork products. The model can generate prices and quantities both in the presence of Proposition 12 and in a baseline world without Proposition 12.

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[12] The study's calibration year is 2018. Although prices for hogs and pork products have risen since 2018, the forecasted percentage effects from the analysis are unaffected.

One key goal for the model is to explicate the magnitude of costs that would be incurred throughout the supply chain in producing pork products that comply with Proposition 12 as compared to the costs of non-compliant pork products, as well as who will bear those costs. In other words, how much would compliance add to costs at the farm and along the supply chain and who pays? The overarching conclusion yielded by this model is that only the farms, processors, and marketers for which market dynamics support compliance will convert their operations to satisfy Proposition 12; others will choose not to serve the California market and incur no cost impacts as a result. Regarding consumers, Proposition 12 will increase prices of uncooked pork cuts in California, that the majority of California voters willingly accepted in passing Proposition 12, but will have almost no impact on prices for consumers outside California for the reasons discussed above and demonstrated below.

A. Only Some Producers Will Choose To Bear The Costs Of Complying With Proposition 12; Others Will Choose To Serve The Rest Of The North American Market.

Below, *amici* describe the costs for producers of complying with Proposition 12. Importantly, these cost impacts are *not* costs that an average pork producer will need to incur because of Proposition 12. The law does not compel compliance for all pork producers nationwide. Rather, these costs will accrue only to those hog operations that choose to comply with Proposition 12 given market-based incentives. Because California consumes less than 9% of the pork produced in North America, as a matter of the simple economic incentives outlined above, the average hog operation will choose not to become compliant.[13]

For those farrowing operations that choose to comply with Proposition 12, the most tangible increase in capital recovery costs per sow is due to fewer sows occupying a given housing facility. Because about 20 square feet of usable space per sow is allowed on average among extant group-housing operations, to increase the space allowance per sow from 20 to 24 square feet, facility costs per sow rise by about 20%. Based on farm cost data from the scientific literature, *amici* estimate that the incremental capital costs are about $3 per piglet produced in farrowing operations that comply with Proposition 12, and that the variable operating costs created by compliance with Proposition 12 with respect to breeding, farrowing, and nursing rise by about $2 per piglet. The $5 cost per weanling pig implies a $5 increase per retail weight of 160.8 pounds of pork per pig, or about $0.03 per pound of carcass meat available for retail sales.

Proposition 12's restrictions on the farrowing operations of those that opt to comply also impose additional costs on the rest of the supply chain. These costs are relatively small for hog nursery and finishing

[13] Petitioners' suggestion that Proposition 12 will put small hog farms out of business because they will not be able to make the necessary conversions to their facilities and operations, *see* Pet. Br. 4, 15, 46, is thus incorrect. More than 90% of the North American market remains available to those small farms—and indeed, farms of any size—that choose not to comply with Proposition 12. Moreover, none of the farm practices needed for Proposition 12 compliance are scale intensive. Indeed, small farms are more likely to produce specialty pork, such as that from hogs raised on pasture, that may already be compliant with Proposition 12.

operations, but are more substantial for primary pork processing operations. Given California's relatively small market share of the North American pork market and the geographic dispersion of California-compliant farming operations, most processing facilities that elect to produce California-compliant pork will not be solely dedicated to compliant operations, but rather will also process non-compliant pork in order to effectively utilize their plant capacity and achieve scale economies. Thus, hogs that will be used for California-compliant products must be identified, segregated, and traced. These compliant hogs are likely to be processed at different times from other hogs to ensure that no non-compliant pork is co-mingled with uncooked cuts of pork that are destined for the California market.

Plants that process both compliant and non-compliant hogs will incur added transport, storage, and scheduling costs. Such costs include maintaining separate holding pens, more complicated and less flexible scheduling, interruptions in plant operations between processing compliant and non-compliant hogs, additional storage capacity so that up to double the number of stock-keeping units of fresh pork can be kept in distinct lots, a more complicated labeling process, and more complex shipping of labeled products. *Amici*'s research indicates that these additional costs will be about $15 per compliant hog slaughtered, or $0.0933 per pound, assuming 160.8 pounds of meat per processed hog. Because approximately 63.6% of products from a processed hog will be covered under Proposition 12 regulations,[14] the cost per

[14] As explained above, Proposition 12 does not apply to pork destined for retail products that are precooked and sold in ready-to-eat form, nor to combination food products such as soups,

hundredweight (cwt) for covered pork is about $0.1467 per pound ($0.0933/0.636).

In addition to higher costs at the primary processing plants, there will be additional costs for handling compliant pork throughout the downstream marketing chain. Based on information from secondary processors and marketers, *amici* estimate these costs to be about $0.05 per pound of compliant uncooked cuts of pork.

Across all stages of the supply chain, *amici*'s estimates indicate that the incremental cost for bringing compliant pork to California consumers is $0.23 per pound in 2018 prices. As detailed in the next section, these costs will be passed forward to California consumers through ordinary market processes. Although Petitioners premise their argument about the economics of Proposition 12 on the contention that farmers, processors, and marketers that choose to comply with Proposition 12 may be harmed by an inability to pass along the increased costs, *see, e.g.*, Pet. Br. 15, 19, 28-29, 34, 46, 50, there is no basis for that concern: nothing in Proposition 12 stops California consumers from bearing the costs of compliance in the form of higher prices. Nor are the practicalities of segregating supply chains between complaint and non-compliant products a practical barrier, *contra* Pet. App. 206a, 214a-215a, as demonstrated by producers' ability for years to produce various forms of higher-priced pork products that claim special treatment of hogs or some other farm practice that is attractive to some consumer segment.

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sandwiches, pizzas, or hot dogs. It also does not apply to ground pork products or sausage, which are not a "cut of pork." Cal. Health & Safety Code § 25991(u).

In short, Proposition 12 does not compel any actor within the supply chain to convert its operations to comply with Proposition 12. For those that do so choose, the economic logic and pork market realities indicate that the costs of compliance with Proposition 12 will be passed along to California consumers in the form of higher prices. If California is to continue to consume pork—as, of course, it will—then the supply chain must be incentivized through higher prices to supply compliant pork products to the State.

Petitioners rely on a series of declarations from hog farmers who describe the problems they would have if they were required to convert their operations to comply with Proposition 12. *See* Pet App. 158a, ¶ 56; Pet. Br. 16, 44-45. Those statements do not demonstrate the market effects claimed by Petitioners, but rather are entirely consistent with *amici*'s analysis and findings. Specifically, hog farmers are not required to comply with Proposition 12, and for more than 90% of the North American hog supply chain, supplying the California market will not be economically worthwhile, such that they will not do so and will remain almost completely unaffected by the law.

Petitioners likewise rely on a declaration from economist Steven Meyer, who describes his calculations of some farm-level capital cost increases that would be incurred by average farms that currently use stall housing for sows, if those operations were required to convert to new housing that meets Proposition 12 standards. *See* Pet. App. 171a-214a, ¶¶ 69, 70, 152, 162, 285, 308, 309, 314, 334, 342, 343, 346; Pet. App. 341a. Again, these statements are entirely consistent with *amici*'s model and do not demonstrate the ultimate market effects claimed by Petitioners. Moreover, as explained above, average farms that currently use stall housing for sows will have no need or incentive to convert to Proposition 12 compliance. Therefore, for these operations, Proposition 12 will have no practical impact.

B. California Consumers, Not Out-Of-State Consumers, Will Bear The Costs Of Proposition 12.

Based on the foregoing analysis of the economic effects of Proposition 12 and a comparison to the non-Proposition 12 world, *amici* were able to project the impacts of Proposition 12 on consumer and producer prices, market quantities, and economic welfare. As illustrated by the following table and discussed further below, amici's model projects that the average farm price equivalent of compliant pork will rise by 3.5%. Prices must rise sufficiently to induce just enough operations to convert to meet the quantity demanded by California consumers at those higher prices. The upshot is that the marginal operation, which is nearly indifferent between converting to Proposition 12 compliance and not, expects to just break even from conversion. However, those operations that can convert more efficiently than the marginal operation increase their profits when they take advantage of the opportunity presented by converting their operation to meet Proposition 12 standards and consequently receiving higher prices for their pigs.

Table 1: Impacts of Proposition 12 on Hog and Pork Prices and Quantities in North America

Variable	2018 Base	% Change due to Prop 12
Impacts on Prices		
Average price, all slaughter hogs	$79.20/cwt.	0.0
Price, hogs for California pork	$79.20/cwt.	3.5
Price, hogs for non-California pork	$79.20/cwt.	-0.3
Retail price, California uncooked pork cuts	$3.30/lb.	7.2
Retail price, non-California uncooked pork cuts	$3.30/lb.	-0.2
Retail price, non-covered pork	$3.79/lb.	0.1
Impacts on Quantities		
Retail weight, all hogs slaughtered	233.1 mil. cwt.	-0.2
Share of hogs for the California market	8.9%	-6.4
Retail uncooked pork cuts, all	11.95 bil. lbs.	-0.5
California retail uncooked pork cuts	1.30 bil. lbs.	-5.9

Non-California retail uncooked pork cuts	10.65 bil. lbs.	0.1
Retail quantity non-covered pork	8.55 bil. lbs.	0.1

For California consumers, the model projects that the average price of uncooked cuts of pork in California (*i.e.*, the regulated products) will rise by 7.2%, roughly equal to the higher production cost per pound discussed above. California consumers also will eat 5.9% less of the covered products as a consequence of the higher prices implied by Proposition 12. Because of lower California consumption, the share of North American live hogs whose pork products are destined for California will decline from 8.9% to 8.3%.

California pork consumers thus lose economic welfare under Proposition 12 because they will pay more for uncooked cuts of pork and so will buy less.[15] The economic benefits for California consumers from buying pork—known to economists as "consumer surplus"—will decline by about $298 million annually, or about $7.60 per California resident in 2018 dollars. That cost, of course, will not be borne equally by all California residents, but rather will be borne by those California consumers who purchase covered pork

[15] The retail prices of non-covered pork products will not measurably change under Proposition 12 because such products from Proposition 12-compliant hogs must compete in the market, including in California, with products from hogs that are not compliant with Proposition 12. The cost of production of these non-covered products, such as sausage or cooked hams, will not have risen and there is no reason for their prices to rise as a consequence of Proposition 12.

products, with heavy users bearing a higher share of the cost.

Notably, *amici*'s model shows very little impact from Proposition 12 for consumers outside of California; for the segments of the supply chain that do not convert to supplying compliant pork; and for pork products not covered under Proposition 12. Although Petitioners allege that Proposition 12 will "raise prices in transactions with no California connection," leading to cost increases for "customers everywhere," Pet. Br. 4; *see also id.* at 15, 28-29, 50, there appears to be no plausible basis for that assertion. To the contrary, *amici*'s analysis actually projects a tiny 0.3% *decrease* in the price of hogs that produce non-compliant pork, and a tiny 0.2% decline in the price of retail pork outside California. The tiny decrease in farm and consumer prices for pork products outside California is due to the fact that the higher price for covered pork products in California reduces California's pork consumption relative to the rest of the nation, and when California eats less pork, there is slightly more pork to supply to the rest of North America.

The model also indicates no significant change (-0.2%) in the quantity of live hogs produced in North America. The decrease in consumption in California (5.9% for covered products) is largely offset by a small percentage increase in consumption (due to slightly lower prices) of pork products in the rest of the North American market and a slight increase in the consumption of non-covered pork products.

CONCLUSION

Petitioners' key economic arguments regarding Proposition 12 are based on fundamentally flawed and implausible economic premises. Only those producers for which compliance with Proposition 12 is economically beneficial will choose to do so, while all others will continue to supply the vast majority of the North American pork market beyond California's border and face little or no economic impact. Likewise, Proposition 12 will reduce the economic welfare of pork consumers in California but not those outside the State.

Respectfully submitted,

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June 17, 2022