Original Article

Protests of Abundance: Distributive Conflict Over Agricultural Rents During the Commodities Boom in Argentina, 2003–2013

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Abstract

Whereas the scholarship on rural contention mostly focuses on austerity and busts, we study protests by agricultural export producers in times of high agricultural prices. Aware of price volatility, farmers seek to take advantage of cycles' upswings to maximize their income and resist sharing the rents generated by higher prices. When farmers lack the formal political influence to avert redistribution, they are more likely to protest as their tax burden increases although they benefit from higher prices. Their strongest protest tool is lockouts, which halt commercialization activities and have significant economic consequences, but require coordination by farmer associations. Membership homogeneity and lower exposure to state retaliation by these organizations heightens contention. We test this argument using a local-level data set on rural lockouts across Argentine departments between 2003 and 2013, a time of high prices for Argentina's key export commodity: soybeans. We complement our empirical strategy with in-depth, semi-structured elite interviews.

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> Among farmers, what's more usual, is that when you have the feeling of increasing welfare and you perceive that's being threatened, that's a reason for mobilization.
>
> —Jorge Solmi, former vice-president of the Argentine Agrarian Federation (June 28, 2018).

Whereas the difficulties of collective action by dispersed farmers have long been noticed (Bates, 1981), their protests seem more puzzling at times of high agricultural prices when their grievances should decline. Indeed, a body of conventional literature focusing on both farmers and peasants underscores the impact of negative shocks on agrarian unrest. Farmers are exposed to climate risks and sudden fluctuations in agricultural prices, both of which jeopardize farm income. Thus, natural disasters (Mooney & Majka, 1995; Wells, 1979) and negative price shocks (Klepper, 1974; North, 1974) have been highlighted as major factors in fomenting farmers' contentiousness. Similarly, the literature on the political economy of contention emphasizes the impact of material grievances generated by austerity and economic liberalization to explain recent protest by agricultural producers in advanced nations (Bush & Simi, 2001; Della Porta, 2015) and Latin America (Eckstein & Wickham-Crowley, 2015; Simmons, 2016). By contrast, high agricultural prices are not expected to trigger farmers' protests even though price upswings have been associated with peasant unrest in reaction to the expansion of agrarian frontiers into common lands, landholding concentration, and environmental degradation (Hall, 2011). Protest in "moments of affluence," however, have been noticed in nonagrarian contexts by Kerbo (1982), who pointed to the higher prevalence of labor strikes in times of low unemployment and postmaterial protest movements in times of economic abundance. We follow this tradition, seeking to explain the conditions that underpin contention by farmers who benefit from the agricultural commodities boom.

The commodities super cycle that started in 2003 had a dramatic impact on soybean prices. Indeed, while the four major grains (maize, soybeans, rice, and wheat) doubled their price between 2003 and 2013, the price of soybeans reached the highest levels driven by Chinese demand. By 2012, wheat and corn hovered around US$200 per ton and rice at US$300, whereas soybean prices grew above US$500 per ton.[1] In response to world prices, the

fertile South American countryside turned to soybeans, which became a major export product in Argentina, Bolivia, Brazil, Paraguay, and Uruguay. Surprisingly, as prices peaked in 2008, soybean-producing farmers protested in Argentina, Bolivia, and Paraguay. These farmers were reacting to governments' efforts at redistributing to their constituencies part of the rents produced by high soybean prices, either through taxes or regulations. Paraguayan soybean producers took their trucks to the roads in December 2008 to avert a tax on soybean exports and the imposition of regulations in the use of agrochemicals by a newly elected left-wing president. Similarly, soybean farmers in Bolivia mobilized against leftist president Evo Morales in 2008 to resist export quotas and the obligation to sell a portion of their production at lower domestic prices, effectively taxing it.

In these cases, as in the Argentine one, farmers' perception of low political influence was crucial in explaining their mobilization in defense of the rents generated by higher agricultural prices. Yet, there were important variations in the incentives to join these protests at the local level. We focus on this variation to further our understanding of rural contention in times of affluence. Our argument focuses on the distributive conflict over rents generated by higher agricultural prices between farmers and governments while pointing to distinct organizational incentives shaping collective action.

Export crops have also been taxed in other Latin American countries and in much of sub-Saharan Africa and South Asia (Anderson, 2009; Estrades et al., 2017). Taxing export crops becomes especially tempting during commodity booms as these rents are easy to capture in export ports (Saylor, 2014). Therefore, our findings have broader implications for understanding incentives for rural contention in the context of high agricultural prices beyond Latin America. In addition, our study also contributes to the literature on the political economy of the commodities boom in Latin America by illuminating the revenue-side dynamics that sustained the expenditures of the Left Wave governments that ruled the region during the 2000s.

We study Argentina because soybeans were its main export product and we have access to local-level data to test our argument in the period of the commodities boom. We focus on farmers' lockouts, which interrupt commercialization activities—for example, withholding production, sabotaging the sale and transportation of food at customs and ports. As rural lockouts imply forgone opportunities to sell at high prices and contract cancelations while requiring storage capacity, they are used as a last resort by farmers. Yet, farmer lockouts are their strongest protest tool due to their significant economic impact. Freezing trade can induce macroeconomic instability by draining foreign-exchange reserves. If the government relies on tax monies levied from the agricultural sector, rural lockouts may also diminish fiscal revenues

and strain public budgets. In addition, hoarding can prompt food shortages, increase consumer prices, and exacerbate disputes over the distribution of basic supplies.

Farmers are aware of the volatility of international prices and try to maximize their income during the commodities boom. So are governments, who seek resources for redistributing to their urban constituencies. When farmers lack the formal political influence that would allow them to avert redistribution, they are more likely to protest as their tax burden increases, even if they are benefiting from higher prices. A higher tax burden relative to the cost of contention increases the stake they are competing for. In addition, because lockouts require coordination among farmers, the type of rural organizations modulate the impact of agricultural rents on rural protests at the local level. Membership homogeneity and lower exposure to state retribution heighten leadership incentives to call lockouts whereas heterogeneous membership and fear of state retaliation reduce leaders' preference for militancy.

We test our argument by using a novel county-level data set of Argentina for the years 2003–2013. Examining subnational variation in protest activity has the advantage of holding constant many institutional and cultural confounders that could vary on a cross-country basis, allowing us to test the local-level implications of our argument. In response to the upswing on soybean prices, the area planted with soybean in the Argentine countryside increased by more than 50% between 1990 and 2012 (Anlló et al., 2013, pp. 17–18). Taking advantage of farmers' weak political influence, a left-wing urban-based administration taxed soybean exports (Fairfield, 2015; Freytes, 2015; Richardson, 2012). Farmers reacted launching more than 700 lockouts in the soybean-producing provinces between 2003 and 2013, although this protest strategy had rarely been used during the prior decade (Lattuada, 2006) and even though Argentine farmers' concern with taxation preceded the commodity boom.[2] We concentrate on the effect of soybean export taxes and local associations across Argentine departments—equivalent to counties in the United States—to test our argument about local-level variation in rural lockouts. To shed light on the causal mechanisms we describe, we provide qualitative evidence. We offer evidence based on a ethnographic case study conducted by other scholar and from semi-structured, in-depth interview excerpts contextualized through hyperlinks as suggested by Moravcsik's (2014) guidelines on transparency in qualitative research (Supplemental Appendix, Section D). This mixed-method approach increases our confidence on the empirical results we present.

The rest of the article is divided into five sections. We start by developing our theoretical framework before introducing the Argentine case. We then put forward the hypotheses to be tested. Fourth, we describe our empirical

strategy, including the operationalization of our variables, model specifications, and results. We conclude in the last section.

The Political Economy of Contention: Distributive Conflict Over Agricultural Rents

Commodities booms provide an unexpected and extraordinary influx of wealth to producers, who have no control over world prices. This is particularly the case for agricultural commodities, which tend to be privately produced and fragmented across many production units in contrast to extractive commodities such as minerals or hydrocarbons, whose production is concentrated in multinational corporations and state-owned enterprises. The fragmentation of agricultural producers makes collective action necessary to foster their policy influence. Yet, this fragmentation also makes collective action difficult to achieve unless coordinated by encompassing organizations or associated with powerful political allies (Bates, 1981; Fairfield, 2011, 2015; Schneider, 2004). Farmers' need of political influence becomes salient because as agricultural prices increase, so do government incentives to tax their newly acquired rents. Taxing export crops is more common in developing countries for which agriculture is a significant source of revenue to finance redistribution or industrialization (Anderson, 2009; Estrades et al., 2017; Schulz, 2018). Export taxes accounted for a quarter of the restrictions imposed on world trade during the 2005–2014 period, but the majority of those have been adopted by developing countries (Estrades et al., 2017, p. 15) where agricultural producers tend to have lower political influence and state fiscal bureaucracies are weaker (Bates, 1981; Schulz, 2018).

Given price volatility, farmers prefer accumulating rents during the upswing of the cycle, especially after experiencing its downswing. This heightens the distributive struggles with governments over those rents. Politically influential farmers can rely on lobbing to press for their policy demands and avoid the costs involved in protesting (Fairfield, 2015; Fernández Milmanda, 2018). Conversely, if farmers lack political clout, protesting is their last resort for influencing policy (Fairfield, 2011). Farmers subjected to greater fiscal pressures should have stronger incentives to protest as their distributive stakes increase. Whereas the fiscal pressure varies depending on the volume of farm production and tax structure, farmers' propensity to protest should also consider the cost of collective action, which varies with protest repertoires. Lockouts are their strongest pressure tool but they involve significant costs, which include storage capacity, contract cancelations, lack of liquidity, and missed opportunities to sell at higher prices. For instance, neither peasants nor sharecroppers reap enough rents to afford

withholding their crops even at high prices. Thus, farmers who are likely to be more benefited by the upswing on prices are also more likely to engage in a distributive dispute over those rents with the government.

Lockouts are forms of collective action that require coordination among farmers, and thus local organizations are critical for this type of contention (Bates, 1981; Kurtz, 2004; Lattuada, 2006). Farmers' organizations offer fora for sharing grievances, establishing networks, and coordinating actions around leaders who aggregate demands and bargain with government officials (Offerle, 1988). Indeed, rural associations rather than individual farmers initiate lockouts. Rural associations, nevertheless, have different incentives, derived from their membership and organizational structure, which shape the propensity of their leadership to call lockouts. First, greater member homogeneity facilitates the aggregation of economic interests into common claims and a more even allocation of the costs of lockouts, which vary across types of producers and other actors in the agricultural sector. Therefore, it should heighten pressure on leaders to call lockouts. Second, organizational structures also shape leadership responsiveness to that membership. As Schneider (2004) describes for Latin American business more generally, financing mechanisms and exposure to corporatist subsidization by the state have a crucial effect on farmers' organizational incentives. If leaders fear that state retribution might endanger organizational survival, they should be more likely to seek restraining contentious activities. Hence, whereas membership homogeneity should facilitate contention, financial dependence on the state should reduce propensity to protest against the government.

In short, our theory suggests that distributive conflict emerges when both farmers and governments seeking redistribution vie for the rents produced by higher commodity prices. If farmers lack political influence to avert government redistribution, they will protest in defense of their share of agricultural rents. Farmers' propensity to protest should increase with tax burden, which defines their stakes in the distributive struggle, relative to the costs of contention. Furthermore, the membership type and financial autonomy of their local organizations shape the incentives of their leadership to coordinate farmer militancy.

We apply our argument to Latin America during the commodities super cycle sparked by China's demand for natural resources. Taking advantage of the upswing of commodities' prices and the immobility of natural resources, left-wing governments across Latin America fed their fiscal coffers to enact comprehensive redistributive policies during this period (Kaufman, 2012; Mazzuca, 2013). Whereas agricultural producers with political resources, such as Brazilian farmers, were able to stall government redistribution, those

lacking political influence, such as their Argentine counterparts, resorted to protests (Fairfield, 2015; Fernández Milmanda, 2018; Freytes, 2015; Richardson, 2012). In this study, we investigate variations in the incentives to join those protest while keeping farmers' lack of political influence in national arenas constant. We do so by using local-level data from Argentina between 2003 and 2013.

The Soybean Boom and Lockouts in the Argentine Countryside

Soybeans were the main export product of Argentina during the studied period. Following a threefold devaluation of the currency in 2002, the government imposed an export tax on soybean exports. Its rate increased during the price upswing to peak in 2008, reflecting a distributive conflict over agricultural rents between an urban-based left-wing administration and politically weak farmers. Farmers protested with lockouts. Yet, lockout activity varied across the country in the 2003–2013 period of the boom. We use our theory to explain this variation.

Distributive Conflict Over Soybean Rents

Argentine farmers lacked political influence since democratization in 1983 until the election of the first right-wing democratic president in 2015 (Mangonnet et al., 2018). In this period, farmers lacked ties to political parties or official consultation mechanisms and they were organizationally fragmented into four nationwide rural associations (Fairfield, 2011). Moreover, the electoral system favored the most populated cities at the expense of the fertile rural areas (Freytes, 2015) whereas farmers' investment in political organizations had declined in the 1990s (Lattuada, 2006; Richardson, 2012).

The low agricultural prices of the 1990s, however, brought farmers to invest in new technologies that boosted productivity (Anlló et al., 2013). Those included the expansion of no-till sowing, the use of agrochemicals (e.g., fertilizers and pesticides), and biotechnology (such as genetically modified [GM] seeds), as well as new management tools (including subcontracting of labor and machinery, insurance against climate risks, and futures markets). Most of these technologies—along with legal permission to use reproduced GM seeds without paying royalties—contributed to increase soybean yields, to reduce its production cost, and to expand its cultivation across the Argentine countryside (Bisang & Campi, 2013; Campi, 2013; Gras & Hernández, 2009; Regúnaga, 2009; Rosati, 2013).[3]
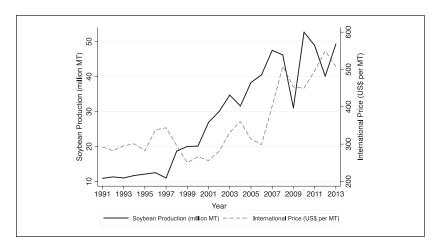
Figure 1. Soybean production and soybean international prices in Argentina, 1991–2013.
Source. Ministry of Agroindustry and the World Bank's Global Economic Monitor.

This boost in agricultural productivity was coupled with a devaluation of the Argentine peso in 2002 and an upward trend in international prices since 2003. Figure 1 shows the impact of this positive shock on Argentine soybean production, highlighting that "Argentina is a price-taker and the prices generate incentives to plant certain crops. The main incentive with soybeans was the high profitability."[4] Price hikes larger than productivity gains begot copious rents, which generated incentives for distributive conflict between farmers and the state.[5]

Taxes on exports of soybean bushels and by-products, as well as other crops, established in 2002, were subsequently raised during the boom by the administrations of Néstor and Cristina Kirchner (2003–2015). Soybeans were fully exported and the export tax on their production was collected by the federal government and not shared with the provinces—as with other taxes.[6] The tax rate was flat and calculated on sheer volume rather than profits so that the absolute burden increased with international prices and productivity.[7] Shifting to other crops was limited because beef, maize, and wheat were subject to export permits and price controls to reduce their domestic price, and thereby involved higher uncertainty than soybeans (Regúnaga & Tejeda Rodriguez, 2015). Indeed, between 2007 and 2011, Argentine farmers produced a net transfer to the Treasury of 45% of their total annual soybean production; by contrast, their counterparts in Brazil were net recipients of state funds in this period (Freytes & O'Farrell, 2017, p. 184).

The distributive conflict heightened as prices peaked in 2008, when a tax hike enacted right before the harvest season provoked a countrywide revolt, which included lockouts, marches, demonstrations, encampments, and even roadblocks (Hora, 2010).[8] Remarkably, neither lockouts nor roadblocks affected production on the farms as they happened outside farm gates.[9] The widespread mobilization, however, divided the ruling coalition and led to the defeat of a bill endorsing the tax hike. The tax rate remained unmodified for the rest of the studied period at 35% whereas other regulatory decisions seeking to capture farmers' rents, such as export permits and price controls of beef and grains, continued during the studied period.

Costs and Benefits of Rural Lockouts

Farmer lockouts were hardly used in Argentina before the commodities boom. Nevertheless, between 2003 and 2013, lockouts increased drastically in the rural countryside, with more than 700 lockout events recorded across the 15 soybean-producing provinces, which involved all four national organizations to different degrees. These included protests which spread nationally in 2008, as mentioned above.

Figure 2 presents the number of rural lockouts by Argentine geographic region since 1991. It shows a marked variation between the fertile Pampas region—peaking along with the tax rate at 329 lockouts in 2008—and the other soybean-producing provinces (the scale for the Pampas is larger). As taxes were calculated on volume rather than profit, this distribution maps to our argument about the most productive lands with a higher tax burden generating stronger incentives to protest. We expect our argument about fiscal distributive conflict to account for both longitudinal and cross-sectional variation across Argentine departments in this period.

Lockouts are commercialization strikes requiring coordination among farmers to impose costs on consumers and governments and usually follow the failure of negotiation and other means of persuading authorities. Even if farmers do not necessarily interrupt seasonal production inside their farms, they forego opportunities to sell their products at high prices, assume storage costs, and possibly default on contracts.[10] However, their cost of joining lockouts declined with the spread of silo-bags, which facilitated cheaper storage at the farm.[11] In Argentina, rural lockouts typically involve small- and mid-sized, market-driven farmers producing on farms that range from 100 to 500 hectares, rather than peasants, sharecroppers, or subsistence farmers, who cannot afford to withhold production. Rural organizations at the local level are essential to coordinate lockouts and reduce free riding through social pressure. In Argentina, there was competition between four distinct types of
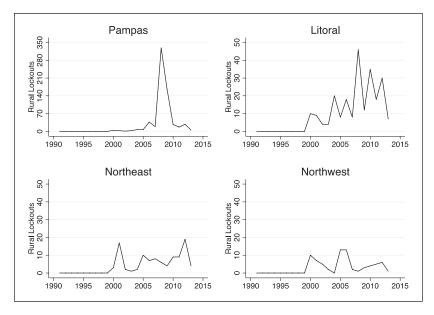
Figure 2. Rural lockouts in Argentina by geographic region, 1991–2013.
Source. Technical Investment Council.
For visualization purposes, the scale for the Pampas region was set to 0 to 350 whereas those of Littoral, Northeast, and Northwest were set to 0 to 50. Although it is actually located in the smaller Cuyo region, we placed the province of San Luis in the Northwest due to geographic nearness and visual convenience.

national agricultural associations bringing together local rural organizations, which could coordinate farmers' collective action. Each of them faced distinct organizational incentives affecting their leadership, which we expect to have conditional effects on the likelihood of farmers' lockouts. We turn now to these expectations.

The Rural Argentine Society (*Sociedad Rural Argentina* [SRA]), founded in 1866 by the wealthiest cattle ranchers seeking technical innovation and control of breed genealogy, has been linked to the Argentine elite. Since its inception, the SRA has staunchly defended free trade and relied on lobbying to exercise influence (Hora, 2002; Lattuada, 2006). Because the SRA is based on individual membership rather than on local associations (SRA, 2016) and we do not have membership data to trace their location, we cannot include it in our department-level analysis.

The Agrarian Federation of Argentina (FAA) was founded in 1912 by immigrant sharecroppers rebelling against large landowners. It is a federation organized around town-level collective affiliates. In the rich Pampas region,

the descendants of the founding sharecroppers became smallholders—that is, 50 to 200 hectares. In the Northern provinces, however, its membership also encompasses peasants and current sharecroppers involved in what is called "family agriculture."[12] Membership heterogeneity complicated demand aggregation bringing the FAA to demand differential export tax rates depending on farm size along with state subsidies for family farmers and landless peasants. This division was expressed in a political cleavage between a "kirchnerista" and a conservative faction in FAA elections.[13] In addition, the FAA's financing depended on state-provided selective incentives, such as export permits for its associated cooperative and the delegation of a tax charge (i.e., bills of landing) in exchange for a fee, which was withdrawn in retaliation for joining the 2008 protests.[14] Moreover, not only was its leadership exposed to retaliation but also had a high degree of control of local affiliates.[15] Given the combined negative effects of membership heterogeneity and exposure to state retaliation, FAA leaders should be concerned about the political cost of participating in lockouts demanded by members. Hence, we expect FAA affiliates to mitigate the effect of the tax burden on farmers' propensity to lockout, which will be measured at the departmental level using data on FAA locales.

The Confederation of Rural Associations of Buenos Aires and La Pampa (CARBAP) and other regional confederations founded the Rural Confederations of Argentina (CRA) in 1943. Its members are mid-sized producers not involved in commercialization, which facilitates preference aggregation. Its confederal structure decentralizes mandates to local associations (also known as *sociedades rurales locales*) facilitating the monitoring of free riding at the local level (Lattuada, 2006; Nun & Lattuada, 1991).[16] CRA's finances, moreover, were not dependent on state selective incentives, reducing the exposure of its leadership to retaliation.[17] Hence, as both effects point in the same direction, we expect local associations affiliated to CRA to heighten the impact of the tax burden on lockout propensity, which we test using their location at the departmental level.

Finally, the Confederation of Agrarian Cooperatives (CONINAGRO), established in 1956 to bring together all federations of rural cooperatives which provide services such as stockpiling, input provision, and commercialization to small farmers. The cooperatives' trading activities made them vulnerable to lockouts. As the CONINAGRO president, Elgidio Mailland, explained, "we have all the cooperatives and we have a strong commercial interest. The other organizations are more representative of producers . . .".[18] He continued ". . . a lockout of commercial activities has an economic damage [for CONINAGRO] . . . it's difficult to understand for the primary producer, not for those who are managers in cooperatives".[19] Indeed, cooperative
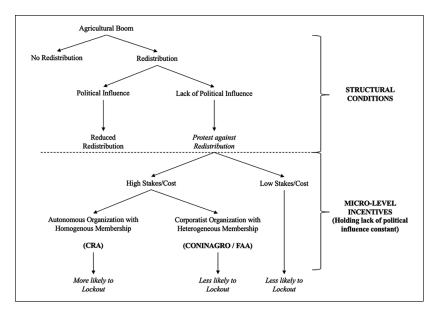
Figure 3. A theory on rural contentiousness and economic prosperity.
CRA = Rural Confederations of Argentina; CONINAGRO = Confederation of Agrarian
Cooperatives; FAA = Agrarian Federation of Argentina.

managers control the leadership, in particular, from its largest member, the
Argentina Cooperatives Association (ACA), a major export trader.[20] ACA,
moreover, enjoyed the discretionary distribution of export permits by the
government, and its share increased from 5.2% to 7.9% during the studied
period (Freytes & O'Farrell, 2017). Given the combined negative effects of
member heterogeneity—which includes trading cooperatives negatively
affected by lockouts—and its exposure to government retaliation, we expect
local cooperatives associated with CONINAGRO to reduce the propensity to
lockout at the departmental level. Figure 3 summarizes the implications of
our theory for Argentina.

Empirical Expectations

Our theory of distributive conflict suggests that higher tax revenues from
soybeans should increase farmers' propensity to engage in a lockout. Because
we do not have individual-level data on farmers, we must use administrative
data at the local level. Our data are at the department level (i.e., counties in
Argentina), which is the geographic reference to compute agricultural statis-
tics and the lowest administrative level where data are available in the

country.[21] Using these data, we hypothesize those departments with greater soybean yields can potentially contribute more to the Treasury as prices and tax rates go up and, therefore, should experience more lockouts.

> **Hypothesis 1a:** Higher tax revenues from soybeans should increase the likelihood of rural lockouts in a given department.

An implication of our argument is that farmers whose tax burden is mitigated should reduce their contentiousness. As agricultural prices grew so did land demand. The price of rentals to cover such demand increased faster than that of soybean in this period. Hence, rents accounted for half of soybean production cost for farmers relying on rented plots (Openagro, cited in Anlló et al., 2013, p. 193). Meanwhile, municipal property taxes remained mostly unchanged although land prices grew, thus lessening the burden of the export tax for those owning land. Therefore, we expect a negative impact on their propensity to lockout.

> **Hypothesis 1b:** Ownership as a form of land tenure should reduce the effect of soybean tax revenues on rural lockouts in a given department whereas rental as a form of tenure should increase it.

In seeking to distinguish the heterogeneous effects generated by local organizational incentives, we focus on CRA, FAA, and CONINAGRO, for which we have data on local-level associations that can be traced to the departmental level. These different organizational incentives for local associations affiliated with CRA, FAA, and CONINAGRO create various expectations for each group. As already described, we expect local CRA affiliates to increase the likelihood of lockouts and CONINAGRO and FAA affiliates to reduce it.

> **Hypothesis 2a:** The presence of local associations affiliated to CRA should increase the effect of soybean tax revenues on rural lockouts in a given department.
> **Hypothesis 2b:** The presence of local cooperatives affiliated to CONINAGRO or FAA affiliates should reduce the effect of soybean tax revenues on lockouts in a given department.

Empirical Strategy

To test the preceding arguments, we constructed a novel data set of the 378 departments in Argentina's 15 soybean-producing provinces: Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, La Pampa, Misiones, Salta, San Luis, Santa Fe, Santiago del Estero, and Tucumán.[22] The

data spans the decade 2003–2013, a period marked by a global rise in the price of agricultural commodities. The number of observations is 4,158.

Operationalization

The dependent variable is rural lockouts. It is measured as the annual count of department-level rural lockouts, compiled by the Technical Investment Council (CTI), a prestigious research institute on business and financial trends. The CTI provides the most comprehensive and respected source of data on social conflict in Argentina since democratization, and one of the most complete sources on labor and business protest in Latin America (McGuire, 1996).[23] To our knowledge, this is the best available source measuring variation in rural lockouts across departments and over time in each department.

There might be concerns with different biases. First, the coverage of the reports may be systematically biased toward underreporting rural conflict in remote areas. Hence, we check our main results by restricting our sample to only departments that have reported rural lockout activity. Second, lockouts entail coordination by farmers and always interrupt commercialization activities in multiple farms, but the CTI computes these events as one lockout per department. Although we are aware that counting lockouts involving multiple farms as single events could bias the results against our hypotheses, the CTI provides no information about the number of farms that participate in each lockout. For comparison, we show results using the number of farmers involved in lockouts as an alternative dependent variable.[24] Finally, there might be a systematic measurement error because of journalistic bias toward overreporting the number and size of lockouts. For this reason, we also examine a dichotomous measure of whether a lockout occurred in a department-year, which is less sensitive to measurement error. During the 2003–2013 period, lockouts were pervasive in the Pampas and Littoral regions of the country, particularly in those departments situated in the so-called Core Zone—northernmost part of Buenos Aires and southern regions of Córdoba and Santa Fe, as shown in Figure 4.

Our main explanatory variable is the national export tax on soybeans, which is the share of government rents derived from high international prices. The variable *Soybean Tax Revenues* gauges the monetary value of the fiscal resources that the national government can extract per soybean hectare. We construct it as the product of the international price of a metric ton of soybeans, weighted by the annual tax rate on soybean exports,[25] and the agro-climatically attainable yield for soybeans in metric tons per hectare. *Soybean Tax Revenues* is measured in Argentine constant pesos (using the
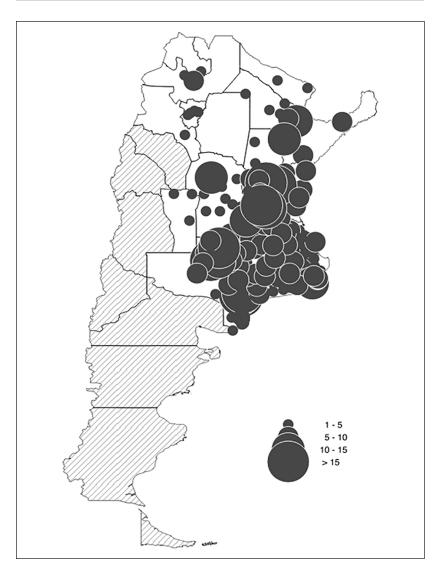
Figure 4. Rural lockouts in Argentina, 2003–2013.
Source. Technical Investment Council.
Striped provinces do not produce soybeans and thus are not part of our sample. Greater points denote higher frequency of lockouts.

natural log) to account for inflation and exchange rate fluctuations. We theorized in Hypothesis 1a that a higher value of amassed export revenues on soybeans should increase the likelihood of farmers to stage a lockout. Thus, as the fiscal pressure on soybean production increases, so does the contentious response from farmers in the form of lockouts in a particular department-year.[26]

The effect of this variable on rural lockouts relies on two identification assumptions. First, the real value of soybean export revenues is driven by fluctuations in global prices and Argentina's currency exchange rate, all of which are exogenous to local patterns of rural conflict. Even though Argentina is the third largest producer of soybeans, the country falls far behind the United States and Brazil, which together account for 72% of soybean production globally. As recorded in our interviews and demonstrated elsewhere (Margarido et al., 2007), Argentina is a price-taker in the world soybean market and has no capacity to drastically alter its supply.[27] Data for soybean prices were obtained from the World Bank's Global Economic Monitor.[28]

Second, this variable uses an average indicator of agro-climatic soybean suitability for different irrigation technologies and input levels, taken from Food and Agriculture Organization of the United Nations' (FAO) Global Agro-Ecological Zones (GAEZ) database.[29] These indices are based on geographic and weather-related factors such as rainfall, soil fertility, and temperature over the 1961–1990 period, and are uncorrelated with lockouts. Because planting soybeans may be endogenous to rural conflict, it is not advisable to use that to compute a measure of soybean taxation. Suitability, moreover, is invariant over time and hence cannot react to variations in lockouts.[30] Therefore, *Soybean Tax Revenues* should be viewed as a measure of soybeans' fiscal *potential* in a given department.[31] Figure 5 graphs the geographic distribution of soybean suitability across Argentine departments.[32]

Our second set of predictors pertains to land tenure. As indicated in the theory section, an implication of our argument is that the effect of soybean taxation should be tempered by landownership as a form of tenure. We assess this effect comparing ownership with rental as these are the two main land tenure systems used in Argentina. Landholding is classified as *Rental* when the tenant pays the owner a fixed amount as rent and *Ownership* when the landowner herself engages in production. Our measures for these variables are time-invariant as we use the proportion of a department's arable land under each system reported in the 2002 National Agricultural Census (CNA).[33] We expect substantive heterogeneity based on tenure, with the effect of *Soybean Tax Revenues* on rural lockouts being greater in departments where the proportion of arable land under rental contracts is larger and
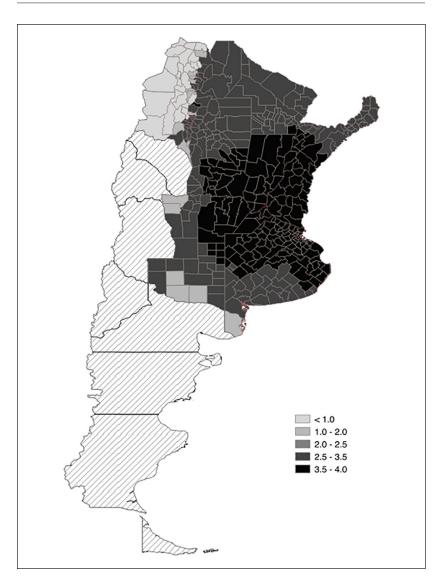
Figure 5. Soybean suitability in Argentina.
Source. FAO's GAEZ (3.0).
The measure was constructed using 0.083-degree resolution. FAO = Food and Agriculture Organization of the United Nations; GAEZ = Global Agro-Ecological Zones.

lower when ownership prevails (compensating the export tax burden with higher land value that is lightly taxed) as explained above.[34]

Subsequently, we test the conditional impact of local farmers' associations affiliated to CRA, CONINAGRO, and FAA.[35] We expect these to face different incentives to coordinate lockouts and assess these incentives by using three binary indicators, one for each organization, that measure whether there is at least one local association in a given department affiliated to any of them.[36] Data for these variables were taken from multiple sources, mainly organizations' membership webpages.[37] We expect the effect of *Soybean Tax Revenues* on lockouts to be higher in departments with a local association affiliated to CRA regional groups and lower in departments with a local cooperative associated with CONINAGRO or local FAA affiliates.

We also control for cost-related variables that might be correlated with lockouts. *Direct Costs* are farming inputs (e.g., seeds, agrochemicals, tillage, and maintenance) that the farmer has to afford per planted hectare of soybeans. *Land Value* is the average market price of a hectare of rural land in a given department. Both are measured in logs, in constant Argentine pesos. Data were requested from *Márgenes Agropecuarios*, an Argentine monthly magazine on agricultural economics.[38] We also proxy agricultural wealth with *Agricultural Production*,[39] which is the log of a department's total agricultural output (excluding soybeans) measured in metric tons per hectare. Finally, we control for the number of *Farms* (log) and size of *Population* (log)[40] in the department. Except for *Farms*, all these control variables are time-varying and lagged 1 year.

Estimation

Our estimation takes into account the discrete form of the dependent variable as well as the panel nature of the data. We proceed by implementing an unconditional, fixed-effects negative binomial model. Event-count models use maximum likelihood estimation to assess the probability of event occurrences. As event counts always take on nonnegative integer values, the distribution of events is skewed and discrete, producing errors that are not normally distributed or homoscedastic (Long, 1997). In addition, overdispersion and goodness-of-fit tests indicated that a negative binomial model is the best method of estimation for our data.[41] We estimate an unconditional fixed-effects version of the negative binomial to account for unobserved unit heterogeneity. We accomplish this by including a set of province dummy variables in the regression models—one for each province in the sample, minus one. We also incorporate province-specific time trends,[42] which control for unobserved time-varying factors across provinces. Because we are

concerned about the nonindependence of observations within departments over time, we present the models below with robust standard errors clustered by department.

We opt for an unconditional, fixed-effects negative binomial with dummies at the provincial (not departmental) level for methodological and practical considerations.[43] First, a large proportion of Argentine departments (61%) never had a rural lockout in the period. A conditional department fixed-effects model would severely restrict our sample in a nonrandom manner by dropping departments in which there were no lockouts and no (or very low) taxation on soybeans in ways consistent with our theoretical expectations. Allison and Waterman (2002) also demonstrated that the conditional maximum likelihood approach for negative binomial is not a true fixed-effects method as it fails to control for stable covariates. Second, an unconditional variant via inclusion of dummies at the department level is inadvisable. Fixed-effects estimators rely on within-unit variance and are problematic in a data set with many time-invariant or slow-moving predictors. Departmental dummies would also introduce an incidental parameter problem, yielding biased estimates (Cameron & Trivedi, 2013). More importantly, such a technique is computationally infeasible because our data have 378 departments and we are unable to attain convergence.[44]

Results

Tables 1 to 4 present our empirical findings. All models test the effect of *Soybean Tax Revenues* on rural lockouts. Table 1 introduces the base models. Table 2 shows the results for departments with at least one lockout (Models 1 and 2) and alternative specifications using different measures of the dependent variable, such as a dichotomous indicator of whether a lockout occurred in a department-year (Models 3 and 4) and the reported number of farmers involved in each lockout (Models 5 and 6). Tables 3 and 4 test the theorized heterogeneous effects based on land tenure and rural organizations.

As theorized, increasing soybean export taxes undermines farmers' rents from export wealth, thus affecting rural lockouts. Our results demonstrate a strong statistical regularity between *Soybean Tax Revenues* and lockouts (Tables 1–4), suggesting that the greater the government capture of soybean rents in the form of export taxes, the greater the number of rural lockouts. We interpret Model 2 (Table 1). As it is logged, coefficients can be interpreted such that a 1% increase in *Soybean Tax Revenues* is associated with a 64.4% increase in rural lockouts in a department-year.[45] *Soybean Tax Revenues* also suggest substantive effects. Setting the other variables to their mean values, a 1% increase is predicted to have, on average, 0.281 more lockouts in a given

Table 1. Soybean Taxation and Rural Lockouts in Argentina, 2003–2013.

Determinants of Rural Lockouts	Lockouts count	
	NB	NB
	(1)	(2)
Soybean Tax Revenues	1.452*** (0.149)	1.644*** (0.515)
Direct Costs (log)$_{t-1}$		−0.227 (0.677)
Land Value (log)$_{t-1}$		−0.104 (0.088)
Agricultural Product (log)$_{t-1}$		0.028* (0.0161)
Farms (log)	0.650*** (0.117)	0.600*** (0.116)
Population (log)	0.224*** (0.078)	0.244*** (0.082)
Constant	−18.18*** (1.440)	−17.36*** (1.495)
Pseudo R^2	.158	.159
Log likelihood	−1,164	−1,163
Observations	4,158	4,158

Standard errors clustered by department in parentheses. All models are unconditional fixed-effects negative binomial with dummies at the provincial level and provincial time trends. NB = negative binomial.
*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

department-year. The predicted number of lockouts rises, on average, from almost 0 at minimum levels of revenues to 0.682 at maximum levels, approximately one standard deviation from the sample mean (0.138). These results are robust to subsetting the data and using alternative specifications to deal with possible sources of bias, as shown in Table 2.

Tables 3 and 4 put our conditional expectations under empirical scrutiny. First, the effect of *Soybean Tax Revenues* exhibits substantial heterogeneity by land tenure system (Table 3). The interaction between *Soybean Tax Revenues* and *Rental* (Models 1 and 3) is positive and significant whereas *Ownership* has the expected sign, in line with the implications of Hypothesis 1b.

An interaction term made of two continuous predictors can result in a host of coefficients. Following Hilbe's (2011, Supplemental Appendix, Section A) advice for interpreting interactions in count models, we factor *Rental and Ownership* into four categories and interpret the effect of *Soybean Tax Revenues* for each of these.[46] For *Rental*, we select values at 0%, 10%, 15%, and 20% of a department's total arable land. We chose these values because (a) there is sufficient common support in the data to compute conditional marginal effects[47] and (b) those observations exhibit considerable variation on *Soybean Tax Revenues*[48] (Hainmueller et al., 2018). We focus on Model 1, holding the other variables at their mean values. When *Rental* equals 0—that

Table 2. Departments With Lockout Activity and Alternative Specifications.

Determinants of Rural Lockouts	Lockouts count		Lockouts binary		Number of farmers	
	NB	NB	Probit	Probit	OLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
Soybean Tax Revenues	0.846***(0.106)	1.076***(0.224)	0.438***(0.059)	0.596***(0.215)	861.3***(182.0)	562.8***(148.1)
Direct Costs (log)$_{t-1}$		−0.356(0.331)		−0.173(0.239)		5,640***(442.1)
Land Value (log)$_{t-1}$		−0.130**(0.062)		−0.061(0.043)		−483.5***(152.7)
Agricultural Product (log)$_{t-1}$		−0.002(0.009)		0.019**(0.009)		100.6*(53.67)
Farms (log)	0.178***(0.069)	0.167***(0.068)	0.269***(0.056)	0.235***(0.057)	1,263.0***(236.2)	1,166***(232.7)
Population (log)	−0.023(0.042)	0.012(0.042)	0.115***(0.041)	0.130***(0.043)	−218.8(202.7)	−27.03(199.5)
Constant	−6.459***(0.992)	−4.926***(1.141)	−7.072***(0.568)	−6.680***(0.485)	−11,191***(2,410.0)	−38,441***(3,709)
R^2	.082	.088	.157	.160	.081	.095
Log likelihood	−398	−395	−783	−781	—	—
Observations	261	261	3,498	3,498	4,158	4,158

Standard errors clustered by department in parentheses. Models 1 and 2 are unconditional fixed-effects NB Models 3 and 4 are unconditional fixed-effects probit. Models 5 and 6 are least squares. All models include dummies at the provincial level and provincial time trends. Pseudo R^2 for Models 1 to 4. OLS = ordinary least squares; NB = negative binomial.

$*p < .10.$ $**p < .05.$ $***p < .01$ (two-tailed).

Table 3. Soybean Taxation, Land Tenure, and Rural Lockouts in Argentina, 2003–2013.

Determinants of Rural Lockouts	Lockouts count		
	NB	NB	NB
	(1)	(2)	(3)
Soybean Tax Revenues	1.243** (0.598)	2.412*** (0.532)	1.724*** (0.614)
Rental	−45.25** (21.81)		−39.78** (19.56)
Soybean Tax Revenues × Rental	5.764** (2.831)		4.973** (2.504)
Ownership	−0.431 (0.621)	9.279 (6.331)	4.693 (5.779)
Soybean Tax Revenues × Ownership	−0.107 (0.091)	−1.336 (0.850)	−0.756 (0.768)
Direct Costs $(\log)_{t-1}$	0.024 (0.016)	−0.338 (0.608)	−0.409 (0.579)
Land Value $(\log)_{t-1}$	0.521*** (0.129)	−0.129 (0.092)	−0.147 (0.095)
Agricultural Product $(\log)_{t-1}$	0.268*** (0.083)	0.027* (0.016)	0.0214 (0.016)
Farms (log)		0.588*** (0.121)	0.510*** (0.129)
Population (log)		0.237*** (0.086)	0.260*** (0.084)
Constant	−12.52*** (2.319)	−21.64*** (3.679)	−15.21*** (3.884)
Pseudo R^2	.155	.158	.156
Log likelihood	−1,154	−1,157	−1,153
Observations	3,971	4,103	3,971

Standard errors clustered by department in parentheses. All models are unconditional fixed-effects negative binomial with dummies at the provincial level and provincial time trends. NB = negative binomial.
*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

is, no arable land operates under rental contracts—a 1% increase in *Soybean Tax Revenues* is correlated with an average increase of 0.25 in the number of lockouts. When *Rental* is 20%, the average increase reaches 0.439. Predictions are significant across the four chosen values. At the risk of extrapolating, if *Rental* is set to its maximum value in the sample (almost 70%), a 1% increase in *Soybean Tax Revenues* is associated, on average, with 1.247 more lockouts in a given department-year, though it is not statistically significant. As these results show, soybean cultivation on rented farmland magnifies the impact of taxation due to the economic burden that leases impose on farmers.

Contrarily, and as expected, the sign of the coefficient for the interaction between *Soybean Tax Revenues* and *Ownership* is negative. Regardless of

Table 4. Soybean Taxation, Rural Organizations, and Rural Lockouts in Argentina, 2003–2013.

Determinants of Rural Lockouts	Lockouts count			
	NB	NB	NB	NB
	(1)	(2)	(3)	(4)
Soybean Tax Revenues	0.615* (0.351)	1.790*** (0.602)	1.760*** (0.562)	0.800* (0.436)
CRA	−10.00*** (2.299)			−11.43*** (2.388)
Soybean Tax Revenues × CRA	1.547*** (0.315)			1.740*** (0.330)
CONINAGRO		3.161 (2.178)		4.201** (1.990)
Soybean Tax Revenues × CONINAGRO		−0.410 (0.286)		−0.561** (0.258)
FAA			1.878 (1.862)	2.220 (1.695)
Soybean Tax Revenues × FAA			−0.246 (0.246)	−0.298 (0.223)
Direct Costs $(\log)_{t-1}$	−0.742 (0.478)	−0.237 (0.713)	−0.240 (0.689)	−0.802 (0.512)
Land Value $(\log)_{t-1}$	−0.137 (0.095)	−0.104 (0.089)	−0.106 (0.089)	−0.140 (0.097)
Agricultural Product $(\log)_{t-1}$	0.023 (0.015)	0.026 (0.016)	0.027* (0.016)	0.022 (0.0154)
Farms (log)	0.473*** (0.098)	0.582*** (0.117)	0.594*** (0.120)	0.464*** (0.101)
Population (log)	0.229*** (0.060)	0.232*** (0.083)	0.239*** (0.080)	0.225*** (0.061)
Constant	−6.553*** (2.375)	−18.17*** (1.432)	−18.05*** (1.621)	−7.456*** (2.440)
Observations	4,158	4,158	4,158	4,158
Pseudo R^2	.175	.159	.159	.177
Log likelihood	−1,140	−1,162	−1,162	−1,137

Standard errors clustered by department in parentheses. All models are unconditional fixed-effects negative binomial with dummies at the provincial level and provincial time trends. NB = negative binomial; CRA = Rural Confederations of Argentina; CONINAGRO = Confederation of Agrarian Cooperatives; FAA = Agrarian Federation of Argentina.
*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

being statistically insignificant[49] ($p < .116$ in Model 2), confidence intervals for different values of *Ownership* reveal that the average marginal effect of *Soybean Tax Revenues* can be distinguished from 0. Using the same criteria specified above, we set the values of *Ownership* at 25%, 50%, 75%, and 100% of the total arable land.[50] We focus on Model 2, setting other variables to their means. When the proportion of owned land is 25%, a 1% increase in *Soybean Tax Revenues* is associated with an average increment of 0.494 lockouts. When that proportion increases to 100%—that is, landowners cultivate all farmlands in a department—that quantity decreases to 0.118, though we are unable to reject the null hypothesis of no effect ($p < .249$).

Table 4 examines the impact of local rural organizations. The type of local association shapes the relationship between *Soybean Tax Revenues* and lockouts as predicted in Hypothesis 2. The direction of the interaction term with CRA (Models 1 and 4) is as expected. When a local association affiliated with
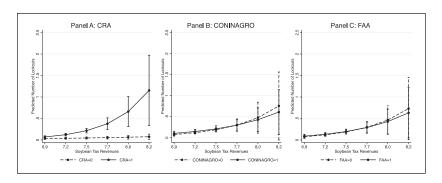
Figure 6. Predicted number of lockouts by rural organization.
*Soybean Tax Revenue*s is plotted from its mean to its maximum value. Based on Models
1, 2, and 3 (Table 4). Confidence intervals are shown at the 95% level. CRA = Rural
Confederations of Argentina; CONINAGRO = Confederation of Agrarian Cooperatives;
FAA = Agrarian Federation of Argentina.

CRA is present in a given department, a 1% increase in *Soybean Tax Revenues* is correlated, on average, with 54.7% (0.495) more lockouts in a department-year (Model 1).[51] Conversely, the interaction term with CONINAGRO (Models 2 and 4) is negative. A 1% increase in *Soybean Tax Revenues* is correlated with 79% more lockouts in a department without a local cooperative (Model 2). When a cooperative is present, however, a 1% increase in revenues leads to 41% (0.068) fewer lockouts, and the coefficient loses statistical significance. For FAA affiliates (Models 3 and 4), we found conditional effects similar to that of CONINAGRO but at a smaller magnitude.

Following the suggestions by Brambor et al. (2006), Figure 6 displays three graphs of the average predicted number of rural lockouts for different values of *Soybean Tax Revenues*, conditional on farmers' local associations. For visualization, the horizontal axis plots Soybean Tax Revenues from its mean to its maximum value. The vertical axis plots the predicted number of lockouts. These graphs are based on Models 1, 2, and 3, respectively.

Average predictions by rural organization vary at a nonlinear rate for different values of *Soybean Tax Revenues.* We plot the conditional predictions of CRA in Panel A. At mean values of *Soybean Tax Revenues*, there are, on average, 0.037 more lockouts when a local association from CRA is present in a given department. At maximum levels of *Soybean Tax Revenues*, the model predicts, on average, 1.090 more lockouts when a local affiliate to CRA is present—that is, one standard deviation and a half above its mean. If setting the control variables to their maximum levels too, the predicted number of lockouts rises to 1.153. Average predictions across all these values are statistically significant. We plot the conditional predictions for CONINAGRO in

Panel B. When *Soybean Tax Revenues* is set to the mean, the difference is close to 0. When increasing to its maximum, there are, on average, 0.60 fewer lockouts when a local cooperative from CONINAGRO is present. A similar prediction is found for FAA, as shown in Panel C. At its maximum levels there are, on average, 0.10 fewer lockouts in places with an FAA locale. In short, these graphs reveal that the greater the fiscal capture of soybean rents, the greater the involvement—either positive or negative, depending on the organizational incentives—of farmers' local associations in lockouts.

Conclusion

We develop a theoretical framework for understanding distributive conflicts over agricultural rents to account for farmers' contention amid economic prosperity. We test this framework using a novel data set on rural lockouts across Argentine departments over the 2003–2013 decade. We show that, absent political influence, farmers protested against government efforts to capture their rents with a soybean export tax. Contentiousness was higher when farmers faced a greater tax burden, but the effect was modulated by local associations of agricultural producers in light of their leaders' organizational incentives. We found that membership homogeneity and financial autonomy from the government increased leaders' propensity to call lockouts whereas heterogeneous membership and increased exposure to government retaliation reduced the organization's contentiousness. Hence, the impact of fiscal pressures on lockout propensity was intensified in departments with local associations connected to the CRA, and diminished where there was a CONINAGRO cooperative or an FAA locale. In building the hypotheses we tested, we relied heavily on qualitative evidence from contextualized in-depth interviews that were conducted in the field with key actors.

Our findings confirm a larger literature in Latin America and sub-Saharan Africa, which points to the importance of agricultural producers' political influence to understand their exposure to policies that redistribute the wealth that international prices engender (Bates, 1981; Fairfield, 2015; Fernández Milmanda, 2018; Freytes, 2015; Kasara, 2007; Richardson, 2012; Schulz, 2018). This enabled the Argentine government to appropriate commodity rents by means of export taxes during the commodities boom (Fairfield, 2011). Farmers were left with no choice other than protests to resist taxation. The weight of political influence—constant in our study—is highlighted by the victory of the first democratically elected right-wing president of Argentina in 2015. Farmers were a fundamental constituency of his electoral coalition, and he rewarded their support by eliminating export restrictions and appointing farmers to crucial policymaking positions (Mangonnet et al., 2018).

We also illuminate the determinants of contention by agricultural producers at times of high prices. Although the literature focuses on contention by despairing farmers whose subsistence is at stake in hard times (Scott, 1976), we show that, in periods of affluence, farmers with resources to bear the cost of protesting and who were hit by higher taxes on their newly acquired wealth have a higher propensity to join lockouts. The beneficiaries of the boom are thereby more likely to use the most damaging tool in farmers' protest repertoire. This finding speaks not only to Kerbo's (1982) insights on "protests of affluence" but also to the economic literature on industrial protest, which points to its heightening during economic upswings when labor unions seek to share the gains of prosperity (Ashenfelter & Johnson, 1969). As in the case of workers, agricultural producers would rather avoid collective action, but lack of success with lobbying or other forms of policy influence give them no alternative. Finally, whereas our organizational findings contribute to a literature on business corporatism, which focused on the effects of government subsidies on producers' capacity to protest (Schneider, 2004), we also highlight the previously ignored aspect of membership homogeneity. Our findings show the weight of preference aggregation in shaping leadership strategies. Common preferences facilitate aggregation and heighten leadership incentives to follow members. We expect this argument to hold for agricultural producers in other contexts as well.

To conclude, by focusing on the beneficiaries of the commodities boom and lockouts as a protest tool, we seek to generate a more nuanced, fine-grained understanding of contentious politics in the rural countryside. We aim to distinguish the incentives of market-driven farmers to protest government tax policy from those of peasants and other rural minorities, such as indigenous communities, to rebel against landed elites. Whereas farmers mobilize to defend their cut of export rents, they may themselves face situations of peasant unrest due to land grabs or town residents' protests over the environmental and health-related hazards that agrochemicals pose. Even though the commodities boom heightens all of these conflicts, there is a diverse constellation of actors relying on distinct repertories of contention as well as locally delimited economic and political conditions shaping the pace and geography of rural mobilization. Future work should explore the connection between different contentious dynamics that the same kind of agricultural production generates in response to higher global prices, with the goal of establishing a more comprehensive theory of rural contention in times of economic abundance.

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Supplemental Material

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Notes

1. Prices, FAOSTAT (http://www.fao.org/faostat/en/#data).
2. Surveys of Argentine farmers conducted in the 1995–2000 period, when agricultural prices were low, show that tax pressures were their main source of grievance, even surpassing prices over which they had not control (Investigación y Consultoría Agropecuaria [ICASA], 2000, p. 40; Richardson, 2012; N. Richardson, personal communication, January 2, 2015).
3. For instance, the arable land planted with soybeans doubled between 1996, when the GM soybean resistant to glyphosate was approved, and the 2001–2002

season (Bisang & Campi, 2013, p. 51). Despite Monsanto's pressure, the use of self-reproduced GMO (genetically modified) seeds was not restricted, according to author's interviews with Oscar Solis, Undersecretary of Added Value of the Ministry of Agriculture, April 15, 2014, and Gabriel Delgado, former Secretary of Agriculture, Buenos Aires, December 12, 2015 (see http://mangonnet.com/poainterviews/2014/04/15/citation-1/).

4. Authors' interview with Oscar Solis (see http://mangonnet.com/poainterviews/2014/04/15/citation-2/).

5. Soybean yields grew dramatically between 1996 and 2002 and remained relatively constant afterward (Regúnaga, 2009, p. 39).

6. From 1989 to 2006, 94% of the soybean oil and 99% of the soy meal produced in Argentina were exported (Richardson, 2012, p. 33).

7. Export taxes hovered around 20% to 25% of total annual revenue in the 2003–2011 period while they increased from a quarter of a billion dollars in 2003 to 1 billion in 2008, 2010, and 2011 (Richardson, 2012, pp. 73–74).

8. According to Fairfield (2011), producers "believed they should rightfully reap increasing profits as international prices rose, and they denounced the reform as confiscatory" (p. 440).

9. Agricultural roadblocks targeted trucks transporting agricultural products and not tractors, which used secondary roads, according to author interview with Alberto Casey, former leader of the "self-organized" (autoconvocados), Fundación Barbechando, Buenos Aires, July 2, 2015 (see http://mangonnet.com/poainterviews/2015/07/02/citation-3/).

10. Farmers are prevented from taking advantage of positive price hikes and, in view of weak financial systems, they might be cash-strapped for paying their production costs. See description of costs for producers and agricultural towns in the ethnographic case study by Millán (2010; Supplemental Appendix, Section D.1) and interview with Martin Rapetti, Vice-President of the CRA, July 14, 2015 (see http://mangonnet.com/poainterviews/2015/07/14/citation-4/). Fairfield (2011, p. 442) calculates that Argentine farmers lost US$95 million on potential revenue given change in prices in the protests of March 2008.

11. Silo-bags widespread adoption was propelled by the 2001 financial crisis as farmers tried to keep their stock in the face of financial uncertainty (National Agricultural Technology Institute [INTA], 2014). Millán (2010) case study refers to 200 hectares as a minimum scale to rely on silo-bags in the area he studies whereas, our interviewers suggested it was 100 hectares in the most fertile areas (Supplemental Appendix, Section D.1).

12. Author communication with Lattuada. Author interviews with Jorge Solmi, Vice-President of Agrarian Federation of Argentina (FAA), Buenos Aires, July 2, 2015; Pedro Peretti, Executive Director of FAA, Buenos Aires, July 15, 2015; and Carlos González, local representative and FAA dairy commissioner, Buenos Aires, April 14, 2015 (see http://mangonnet.com/poainterviews/2015/04/14/citation-5/). According to the 2002 National Agricultural Census, less than 1% of productive units (1,592 farms) work under sharecropping arrangements, a third have between 1 and 25 hectares, and 4% have no title.

13. See Richardson (2012, p. 71); Pedro Peretti and Carlos González also pointed to this division (authors interviews) (see http://mangonnet.com/poainterviews /2015/04/14/citation-6/).

14. Authors interviews with Jorge Solmi, Pedro Peretti, Carlos González, and Gabriel Delgado (see http://mangonnet.com/poainterviews/2015/04/14/citation-7/). The AFA (Federation of Argentine Farmers), a cooperative involved in commercialization, was associated with the FAA and favored in the distribution of export permits during the studied period (Freytes & O'Farrell, 2017).

15. FAA presidents had very long mandates although their tenure is for 1 year, suggesting vertical control of the organization. In some instances, there had been accusations of rigged electoral processes (author interviews with Pedro Peretti and Carlos Gonzalez [see http://mangonnet.com/poainterviews/2015/04/14/citation-8/]).

16. Author interview with Juan P. Merbilhaa, former president of CARBAP, Buenos Aires, July 28, 2016 (see http://mangonnet.com/poainterviews/2015/07/14/citation-9/).

17. The Rural Confederations of Argentina (CRA) leadership had a restricted budget based on the provision of selective incentives to members (Nun & Lattuada, 1991, p. 122). Authors interview with Dardo Chiesa and Martín Rapetti (see http://mangonnet.com/poainterviews/2015/04/12/citation-10/). It also had a more contentious behavior in the 1980s and 1990s. It had called 12 national lockouts between 1983 and 2003, although only one of those was supported by other agricultural associations in 1999 (Lattuada, 2006, p. 203; Nun & Lattuada, 1991, pp. 121–128; Pérez Trento, 2015).

18. Author interview, Buenos Aires, March 17, 2015 (see http://mangonnet.com/poainterviews/2015/03/17/citation-11/).

19. Author interview, Buenos Aires, March 17, 2015 (see http://mangonnet.com/poainterviews/2015/03/17/citation-12/).

20. Confederation of Agrarian Cooperatives (CONINAGRO) by-laws give votes by number of members and assets, allocating a fourth of the assembly and executive committee to Argentina Cooperatives Association (ACA).

21. Official municipal-level statistics are nonexistent in Argentina.

22. These provinces have at least one department with effective cultivation of soybeans at some point during our period, according to the Ministry of Agroindustry (see http://www.siia.gov.ar). These are the leading agricultural districts in the country, exhibiting marked variation in soybeans—from Catamarca, where soybeans grew in only two departments (out of 16) to Córdoba, which concentrates 13% of Argentina's soybean production, with 24 (out of 26) soybean-producing departments. We also excluded 24 fully urbanized departments from the metropolitan area in Buenos Aires, which lack arable land and do not satisfy the scope conditions of our theoretical predictions about agricultural distributive conflict.

23. Technical Investment Council (CTI) records the date, site, size, layoffs, suspensions, and approximate duration of all protests in the formal economy in the five most important Argentine newspapers: Clarín, Crónica, Cronista Comercial, La Nación, and Página 12. Once collected, CTI publishes the list of conflicts in a

yearbook called The Argentine Economy. All CTI's yearbooks can be requested at the Ministry of Finance's public library (see http://cdi.mecon.gov.ar/green-stone/cgi-bin/library.cgi).

24. Lockouts are measured as the number of events that took place in every department on each month of the year, and every single month in which farmers mobilize is counted as an additional lockout. For example, the 2008 farm crisis lasted 4 months, so CTI counted four different lockouts in an affected department in that year. Although a measure of daily duration is provided, we do not count lockouts by day because much of that information is missing or incomplete.

25. We weigh by the export tax rate that the national government sets for unprocessed soybean bushels, not that applied to by-products such as oil and meals. The rate has been changed 5 times in the decade. When more than one rate is implemented in a fiscal year (e.g., in January 2007 the rate was raised to 27.5% and, in November, to 35%), we use the simple mean of the two. Official information about changes in the export tax scheme can be accessed at the Argentine Oilseed Industry Chamber (see http://www.ciaracec.com.ar/estadisticasNac.php).

26. This variable is the product of longitudinal (soybean taxation) and cross-sectional (suitability) predictors. To allay concerns that variation in lockouts might be mainly driven by longitudinal changes in soybean prices or national tax rates rather than cross-department differences in soybean suitability, or vice versa, we replace Soybean Tax Revenues with its two components using an interaction term between them in Supplemental Appendix (Section B.1). Neither the interaction or the constitutive terms are indistinguishable from 0.

27. Figure 1 shows that, in 2009, Argentine farmers suffered the worst drought in 60 years. Exports of soybean bushels plummeted from 11.7 to 4.3 million tons—about 63% in just a year, but global prices remained unchanged. Yet, there may be concerns that during the 2008 farmers' countrywide protests, soybean international prices moderately increased as a result of the conflict. In Supplemental Appendix (Section B.3), we exclude 2008 from the main analysis.

28. See http://data.worldbank.org/data-catalog/commodity-price-data

29. We downloaded Global Agro-Ecological Zones (GAEZ) satellite rasters and spatially merged them with departmental boundaries to obtain department-level soybean suitability. This gives us an average measure of suitability within each department, weighted by the area of overlap with each suitability grid cell. There is variation in soybean suitability by province—in Córdoba, the average potential yield is 3.55 metric tons, but in Jujuy is close to 0. GAEZ data are available at http://www.fao.org/nr/gaez/about-data-portal/agricultural-suitability-and-potential-yields/en/

30. Government tax policy may be endogenous to lockouts, but lockouts occur at the local level at varying degrees per department whereas export taxes are set by the federal government and affect all departments equally. Nevertheless, the 2008 rural protests were associated with Kirchner's failure to increase the soybean export tax rate from 35% to 45%, also preventing further raises in such rate. Our results in Supplemental Appendix after excluding 2008 remain unchanged. In

Supplemental Appendix, Section B.4, we also exploit this intertemporal variation in export tax policy by subsetting the data in two samples: 2003–2008 (when the rate was raised 4 times) and 2009–2013 (when it became flat at the 35%). Although our coefficients are in the predicted direction, they do not reach statistical significance in 2009–2013 as they do in 2003–2008.

31. Farmers switched or remained harvesting soybeans despite the high export tax because of its profitability relative to other crops. This measure is similar to those used in recent developments on commodity potential and distributive conflict in the Latin American rural countryside (see Albertus, 2019).

32. Because soybeans could be suitable in places where other crops can grow too, we are worried that Soybean Tax Revenues might be proxying agricultural activities rather than soybean cultivation specifically. We conduct placebo tests in Supplemental Appendix (Section B.5) by investigating the tax revenue of maize exports. Like soybeans, maize is a warm-season grain requiring similar technological inputs. In 2003–2013, Argentina became the fourth largest maize producer.

33. See http://www.indec.mecon.gov.ar/agropecuario/cna_principal.asp

34. Although partisan alignments have shaped subnational protest activity in Argentina in meaningful ways (Arce & Mangonnet, 2013; Moseley, 2018), we have concerns about this variable. Mangonnet et al. (2018) show that farmer discontent in Argentina has altered local electoral preferences, thus suggesting problems of endogeneity. As an exploratory analysis, we interact Soybean Tax Revenues with a dichotomous variable indicating whether the provincial governor is an opponent of the president in the Supplemental Appendix (Table A2). We test if opposition governors compensate local farmers with policy benefits or are more responsive to their demands, thus decreasing contention. The results are in the expected direction, yet they should be interpreted cautiously given endogeneity concerns.

35. Local farmers' associations are not tied to more than one national organization at the same time. Individual members of *Sociedad Rural Argentina* (SRA), which has no local-level association, could participate in CRA local associations.

36. Local associations date back to 1920–1956, and there is no record of department-level association from CRA, CONINAGRO, or FAA that has been founded after 2003.

37. Data for CRA were taken from provincial confederations' websites, at http://www.cra.org.ar/0/vnc/institucional.vnc?id=10. Data for FAA and CONINAGRO were obtained through interviews with the organizations' secretaries, as no official member list is published in their respective websites. A full list with the name, affiliation, and location of each local association can be obtained upon request.

38. See http://www.margenes.com

39. Ministry of Agroindustry.

40. Instituto Nacional de Estadística y Censos (INDEC).

41. Likelihood-ratio test of the alpha parameter and Pearson goodness-of-fit are significant with $p < .000$, suggesting that the counts are overdispersed.

Overdispersion causes inefficient estimates and downwardly biased standard errors in Poisson regression models, making the negative binomial model a better fit (Long, 1997, p. 230).

42. We obtained nearly identical results using year dummies; see Supplemental Appendix (Section B.2).

43. Our estimation strategy is very similar to that of Albertus et al. (2016).

44. Due to the sensitivity of panel data analysis to estimation choices, we check the robustness of our results by rerunning our models using alternative estimators in the Supplemental Appendix (Section C).

45. Refer to Barrera-Gómez and Basagaña (2015) for this simple method to interpret logged predictors in event-count models.

46. We plot the slopes of the conditional marginal effect for both types of land tenure in the Supplemental Appendix (Figure A2).

47. Almost 90% of the observations for Rental lies within the 0 to 12.5 range.

48. Its mean and variance in the 0 to 12.5 range are 6.944 and 2.224, respectively. Choosing other values would lead to uninformative inferences (Brambor et al., 2006, p. 74).

49. As Brambor et al. (2006, p. 74) warn, meaningful conditional effects cannot be inferred from the significance of the coefficient of the interaction term. It is possible for the marginal effects of a predictor to be significant for values of a modifying variable even if the coefficient for the interaction term is insignificant. Statistical significance matters for marginal effects across real-world observations of the conditioning variable.

50. They represent 95% of observations. The mean and variance of Soybean Tax Revenues equal 6.987 and 2.001, respectively.

51. Because local organizations could be capturing the type of farmers rather than organizational incentives, we fit alternative models using farm sizes as a predictor. Our theoretical interest is on properties between 100 and 500 hectares, so we use their proportion of arable land within the department as our indicator. The results are not in the expected direction and are statistically significant only at medium levels of the conditioning variable. Hence, we are confident that our results are driven by organizational effects and do not result from the predominance of mid-size farmers in CRA affiliates (see Table B2.1 in the Supplemental Appendix).

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