

Research Note

Fuel Scarcity and Social Mobilization in Bolivia

Francisca Castro^{*}

Abstract

Although fuel price shocks are a well-documented source of social unrest, it is less clear whether fuel shortages have the same effect. Bolivia's 2026 fuel crisis offers a test of this question, since a severe and geographically uneven shortage coincided with 54 days of roadblocks, the most common form of protest in the Andean country. I combine blockade reports recorded by the national road authority with daily fuel balances at service stations to build a station-week panel, and test whether stations holding less fuel than usual, or running out of it more often, saw more blockades nearby than other stations in the same week. Count models with station and week effects show no such relationship, for new blockades or for blocked section-days, at any lag up to two weeks. These results hold after accounting for selective reporting and reverse causation, and also in areas with a denser organizational capacity. Blockades instead began where roads had been blocked before, largely following the density of the road network, a finding that is relevant for anticipating where social unrest might occur as a result of international shocks that affect the supply of staple goods.

Keywords: fuel scarcity, road blockades, grievance mobilization, Bolivia

^{*}Universidad Carlos III de Madrid, francisca.castro@uc3m.es. I would like to thank Mauricio Foronda for his willingness to answer questions about Bolivia's administrative data, and Huascar Pacheco from Fundación UNIR Bolivia for his input on the Bolivian context.

In early 2026, the crisis in the Strait of Hormuz showed how directly daily life in import-dependent economies rests on the international flow of oil. The disruption of supply reached the Global South through shortages as much as through prices, and Bolivia, where domestic production covers 38 percent of gasoline demand and 10 percent of diesel demand (Fundación UNIR Bolivia 2025), was among the most exposed countries. Episodes of this kind raise the question of whether and where global commodity shocks turn into domestic contention, particularly in settings already marked by high levels of social unrest. Research on food and commodity prices links international price movements to urban unrest and armed conflict in the developing world (Hendrix and Haggard 2015; Dube and Vargas 2013); however, most of this work considers only shocks to international market prices or local production, leaving aside the hardship people face when supply itself fails.

In an effort to contribute to the literature on social unrest and global shocks, I examine the case of Bolivia, a country that has a long history of fuel shortages and an equally long history of mobilizing over them. Households are particularly sensitive to price changes, and the agroindustrial and business sectors depend heavily on diesel for their operations (Fundación UNIR Bolivia 2026). The grievances resulting from fuel price increases that raise the cost of living and compress incomes are a well-documented source of unrest (Von Uexkull, Rød, and Svensson 2024). Recent work finds that price rises spur anti-government demonstrations (Drabo et al. 2026), and that the relationship strengthens where state capacity and governance are weak and the economy performs poorly (Natalini, Bravo, and Newman 2020). Whether fuel scarcity works the same way is less settled. A fuel shortage affects people differently than a price shock, as it can be distributed unequally depending on location and can also change rapidly. Furthermore, when fuel runs out, access is completely restricted even for those who could afford to pay a higher price for it. A price increase and a shortage may therefore produce distinct grievances, a difference the literature has largely overlooked.

Between May and June 2026, road blockades affected Bolivia's national network for 54 days. The blockade is one of the most familiar repertoires of contention in the country because it is cheap and locally available. This is why Bolivians have used this mobilization strategy for various causes and demands, from fuel prices and availability to opposition to pandemic measures and disputes over election results (Castro and Retamal 2024). Recent scholarship treats the blockade as a way of contesting space and interrupting collective life, beyond the simple obstruction of a strategic point (Chua and Bosworth 2023), which makes the tactic worth

examining on its own terms. Whether these closures form a movement or a repertoire shared across many movements is open to debate, but in either case, grievance accounts would expect material hardship to produce precisely this kind of action. If fuel scarcity drives mobilization, blockades should have appeared where the shortage was worst. Where they occurred, therefore, offers a direct test of the link between material conditions and contention (Simmons 2014).

To analyze the relationship between fuel scarcity and road blockades, I bring together two high-frequency administrative sources. Road blockades are recorded by the Bolivian Highway Administration (Administradora Boliviana de Carreteras, ABC), which posts information about them on its website, including coordinates and the date and time of each report. Fuel availability comes from B-SISA, the sales-control system of the National Hydrocarbons Agency, which publishes how much fuel each service station has available for sale. From these balances I measure scarcity in two ways: how far a station’s stock fell below its usual level while it still had fuel, and how many days in a week it ran out altogether. As shortages in Bolivia were far from uniform, these sources make it possible to observe scarcity and contention around the same station in the same week. The resulting station-week panel offers a measure of local exposure to an international energy shock that studies of commodity shocks and unrest rarely have, and it links that exposure to the location of contention. I complement it with records of blockades from the years before the crisis, including event data that identify the organizations behind them.

I find that, throughout the crisis, stations holding less fuel than usual saw no more new blockades nearby than other stations, and neither did stations that ran out of fuel more often than usual, at any lag up to two weeks. The same holds for blocked section-days, i.e., the number of days road sections nearby remained closed. These results hold when accounting for selective dropout from the fuel data and for reverse causation, and they hold as well in areas where organizations had blocked roads in the year before the crisis.

Two additional findings contribute to the interpretation of these results. First, fuel availability at each station responded to nearby blockades. Diesel stations near blocked roads held more fuel than usual because halted transport reduced sales, while premium gasoline stations ran out more often as closures interrupted deliveries. This shows that the data are precise enough to capture local changes in supply and demand, and since blockades made stations run out, reverse causation would favor finding the relationship a grievance account predicts, making its absence more telling. Second, new blockades began about two and a half

times as often near roads that had been blocked in the previous two weeks, and blockades during the crisis concentrated where roads had been blocked in earlier years, a pattern that largely follows the density of the road network. All in all, these results show that in a setting where the tactic was familiar and the shortage severe, local hardship showed no detectable relation to contention. The geography of the blockades follows earlier closures and the roads whose closure is most disruptive, which fits an account in which organizations coordinating at the national level choose where to act. This aligns with previous studies examining the relationship between other livelihood-threatening grievances, such as food insecurity, and contentious action (Rudolfson 2023).

Bolivia's fuel crisis and the 2026 blockades

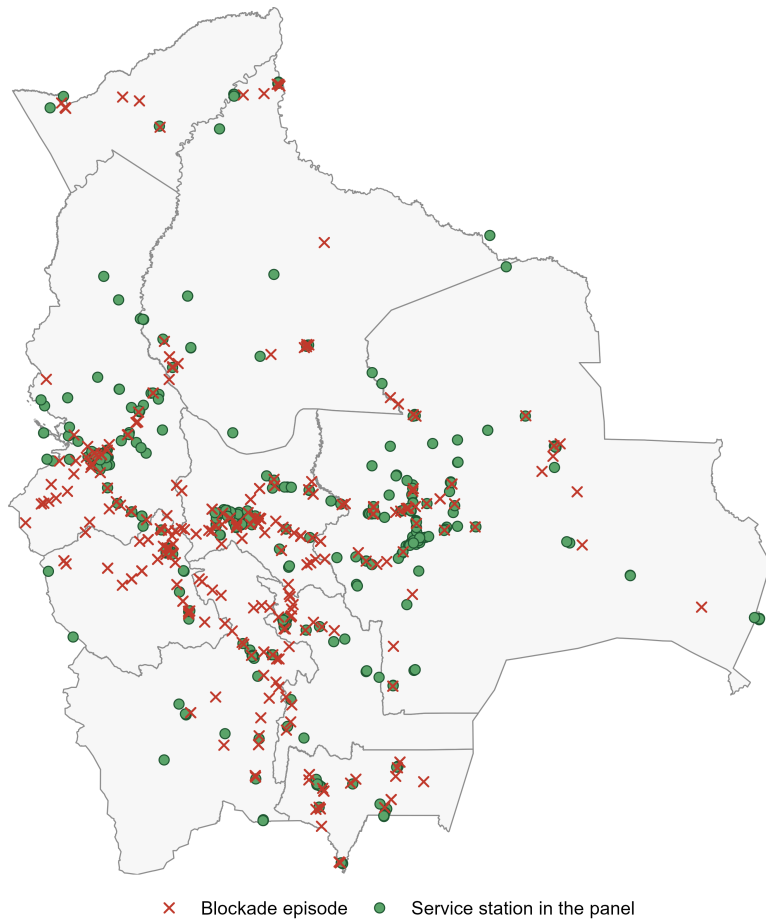
Rodrigo Paz assumed the presidency in November 2025 and began facing protests against his administration during the first six months of his term. Mass mobilization targeting his government began with the announcement of an agrarian reform that peasant and indigenous organizations read as a measure to open agricultural land to large owners. Protests escalated when Paz cut the fuel subsidies inherited from the previous government, which caused gasoline prices to rise sharply (Oliva 2026). The country was already facing a difficult situation with regard to fuel policy. With domestic production covering a small share of demand, a shortage of dollars had constrained import financing, and prices were fixed by decree while purchases were rationed (Fundación UNIR Bolivia 2025). The subsidy cuts therefore took place at a time when fuel was becoming scarce and distribution was being disrupted.

It was in this context that Bolivians turned to a familiar form of protest: roadblocks. The repertoire dates to the colonial period and was consolidated under the MAS governments, when highways became arenas of dispute in their own right (Sainz and Curti 2026). Chua and Bosworth (2023) describe blockades as direct interventions deployed across a wide range of movements to disrupt or control infrastructure and the movement of people and goods, and the way in which the blockades unfold in Bolivia fits that description. This tactic is also sustained by the country's strong organizational capacity at the local level. Bolivians are collectively organized along economic, regional, and ethnic lines (Evia, Laserna, and Skaperdas 2008), with the capacity to call and sustain a blockade existing in most parts of the country. The strength of these organizations is also visible at the national level, since Bolivia is the clearest

case in the region of an indigenous movement reaching national power, with the arrival of Evo Morales to the presidency in 2006 (Vogt 2016).

The protest cycle ran from May 1st to June 23rd, 2026. Over those 54 days, 297 blockade episodes began on the national network, most of them in May. The typical episode was short, with a median duration of about three days, but one in ten lasted close to four weeks, and these long closures sustained the contentious cycle through June, when very few new blockades began. The road authority reports closures by section, i.e., the stretch of highway between two points, and the number of sections closed on a single day peaked at 98 at the turn of the month. On June 20th, the government declared a state of exception (BBC News Mundo 2026), and just a few days later the number of blocked sections dropped to zero, apart from a single section that remained closed until June 28th. Appendix A.1 provides further details on the blockade data. Figure 1 shows where the episodes occurred relative to the service stations in the analysis.

Figure 1: Blockade episodes and service stations, April to July 2026



Note: Episodes attributed to social conflict that began between 1 April and 31 July 2026, and stations included in the weekly panel of at least one fuel.

I use this episode to test whether material scarcity, particularly fuel shortage, produces contentious action. Roadblocks require little initial investment and are readily available locally, so the barrier between grievance and action is low. Existing research finds a strong association between grievances and participation in street protest (Donoso et al. 2022), especially when grievances originate from a large shock (Correa, Nandong, and Shadmehr 2025; Rudolfson 2023). At the same time, Bolivian blockades do not straightforwardly fuel riots in the sense Natalini, Bravo, and Newman (2020) use, meaning violent episodes motivated by grievances over fuel prices, subsidy removal, or availability. Because the tactic serves demands of every kind, how closely it tracks any single grievance is an open empirical question, and its low cost makes it a setting in which a grievance account should find support if it holds.

Data

The analysis combines two administrative sources that report at high frequency and with coordinates, one recording road blockades and one recording fuel availability at service stations. Blockades come from the ABC, which publishes a live map of the national road network and classifies the condition of each affected section (<https://transitabilidad.abc.gob.bo/>). Because ABC overwrites the map as conditions change and keeps no public archive, I rely on the record compiled by Foronda (2023), which has queried the map roughly every two hours since August 2020. ABC issues a new report every morning for each section that remains closed, which means that a single blockade appears in the record as a sequence of daily reports. I merge consecutive reports at the same location into a single blockade episode, making it a continuous closure of one road section with a start and an end date. Between April 1st and July 31st, 2026, this yields 350 episodes (Table A.1). Most were short, with a median duration of under two days.

Fuel availability comes from B-SISA, the biometric sales-control system operated by the National Hydrocarbons Agency (Agencia Nacional de Hidrocarburos, ANH). B-SISA registers every sale at more than 500 service stations and publishes each station’s current balance of diesel, gasoline and premium gasoline, that is, the volume of fuel in liters that the station has available for sale. I use a weekly archive of this source maintained by *sociedatos*,¹ together with a register giving the coordinates of every station. Since the balance rises with each delivery

¹<https://github.com/sociedatos/bo-combustible>, accessed 11 August 2026.

and falls with each sale, a low balance can therefore reflect interrupted deliveries as well as strong demand, but either way it captures how much fuel customers could actually find at a station.

From these balances I build two measures of scarcity, which correspond to the two ways in which a shortage reaches people. As stocks fall, queues form at stations and purchases become restricted, to the point where the government has had to limit sales (Unitel 2026). Once stocks are exhausted, stations stop selling altogether. Considering this, the first measure I construct, *relative allocation*, captures how much fuel a station held compared with its usual level while it still had fuel to sell. The second, *days run out*, captures how often in a week a station had no fuel to sell at all.

Relative allocation comes from the station’s daily balance. Since the balance changes over the day as fuel is sold and delivered, and because the archive recorded balances less often during the crisis, an average of all readings would shift with the number and timing of readings. For this reason, I keep the reading taken closest to midday per station, product, and day. Stations also differ greatly in size, meaning that a balance that is low for a large station may be normal for a small one. To compare each station with itself, I take the logarithm of the balance and express it relative to the station’s own mean over the period. Days on which a station held less than 100 liters, enough for only a handful of vehicles, are left out of this measure, since on a log scale small differences between nearly empty stations would appear as large swings in availability.

Days run out counts the days on which a station had effectively no fuel to sell. A day counts when the station’s balance stayed below 100 liters throughout the day. Because a station that runs out of fuel may close and stop appearing in the data, a day on which the station is missing also counts when three conditions hold, namely that (1) the last reading before the absence was already low,² which separates closures from reporting failures at stations that still had fuel; (2) at least half of the stations in the same department reported that day, which rules out gaps in data collection affecting a whole region; and (3) the station appears again later in the period, which rules out stations that closed for good.³ However, not every empty tank reflects a shortage: many stations registered to sell gasoline show an empty tank on almost every day,

²A reading is low when it falls below the station’s own 25th percentile of balances in the study period.

³Days on which a station ran out make up 9 percent of station-days for diesel, 10 percent for gasoline and 16 percent for premium gasoline. For diesel, most of these days are absences after a low reading, while for gasoline and premium gasoline most are days on which the station reported an empty tank.

including the months before the crisis, and nearly all of them regularly sell premium gasoline instead. Counting those days would mistake a station that does not sell a fuel for one that ran out of it, so this measure includes only stations that regularly had the fuel before the crisis, that is, stations that held at least 100 liters on at least half of the days they reported in the year before April 2026. Appendix A.2 describes both measures in more detail.

I build two panels of stations observed week by week over the 18 calendar weeks of the study period, one for each measure of scarcity. In both, a station-week is kept when the station has at least three usable days, which prevents a single reading from defining a station’s availability for the whole week, and a station is kept when it meets this condition in at least 12 of the 18 weeks, enough to estimate its usual level and to observe the two lags the models require. A usable day is one with a reading of at least 100 liters for relative allocation, and any day with a reading or counted as run out for days run out, so the second panel keeps the weeks in which stations ran out of fuel (Table A.3). Given that the stations differ between panels as well as fuels, each blockade episode is linked to its nearest station in each panel, separately for each fuel. Blockades more than 50 kilometers from that station are dropped, since at greater distances a station is unlikely to serve the people blocking the road. Appendix A.3 describes how blockades are linked to stations, and Appendix A.4 reports the construction of the samples and the pattern of missing weeks.

The analysis relies on four measures built from these data, two outcomes and two explanatory variables. The first outcome, *new blockades*, is the number of blockade episodes beginning within 50 kilometers of a station in a given week. The second outcome, *blocked section-days*, is the number of days on which any road section within 50 kilometers of the station was closed during that week, aggregated over sections, and also reflects how long closures were held.⁴ The explanatory variables are the two aforementioned measures of scarcity: relative allocation is the weekly mean of a station’s log daily balance minus the station’s mean over the whole period, so negative values indicate a station holding less fuel than usual, while days run out is the number of days in the week on which the station ran out, scaled to a full week and expressed relative to the station’s weekly mean over the period, so positive values indicate a station running out more often than usual.

⁴A section-day is one road section closed for one day. For example, a blockade covering two sections for three days adds six section-days.

Design

To examine whether blockades were more likely where fuel was scarcer, I exploit the uneven distribution of the shortage across Bolivia during the crisis. On any given day, diesel balances differed by an average of 1.38 log points between stations,⁵ with some localities close to running dry while others nearby still had fuel. The design compares stations within the same week, which holds constant the political events that coincided with the shortage, such as the subsidy cut and the state of exception, whose effects a comparison of national series over time would confound with scarcity. Because stations also differ greatly in size, the comparison relies on how far each station was from its own usual level in a given week, using the two measures of scarcity previously defined (relative allocation and days run out). If scarcity moved people onto the roads, blockades should have begun more often near stations holding less fuel than usual, and near stations that ran out more often than usual.

Regarding the two outcomes of interest, new blockades capture the moment at which a grievance turns into action, while blocked section-days also reflect how long closures were held. Both are counts of events within 50 kilometers of a station in a given week, which I model with negative binomial regressions of the form

$$\log \mathbb{E}[Y_{it}] = \alpha + \sum_{k=0}^2 \beta_k S_{i,t-k} + u_i + v_t \quad (1)$$

where Y_{it} is the number of new blockades or of blocked section-days within 50 kilometers of station i in week t , $S_{i,t-k}$ is the scarcity of station i in week $t - k$, measured either as relative allocation or as days run out, and u_i and v_t are station and week random effects. Because of the log link, each coefficient β_k can be read as a proportional change in the expected number of blockades. The sum includes scarcity in the same week and in each of the two previous weeks ($k = 0, 1, 2$). Estimating the three terms together separates an immediate response to scarcity from a delayed one. I stop at two weeks because each additional lag removes further observations from a window of only 18 weeks. Each measure and each fuel is estimated separately, since quotas are set by product and many stations do not sell all three.

A grievance account predicts negative coefficients for relative allocation, with less fuel than usual followed by more blockades nearby, and positive coefficients for days run out, with more

⁵In substantive terms, this difference means that one station held about four times as much fuel as another.

days without fuel followed by more blockades nearby. Two features of the data could distort these estimates. The first is reverse causation. Because the balance is a stock, blockades can move it in either direction, lowering it when closed roads interrupt deliveries and raising it when they bring traffic and sales to a halt. The direction of any bias is therefore unclear in advance, which is why I estimate the reverse relationship directly by regressing relative allocation on whether any section was blocked within 50 kilometers of the station in the same and the two previous weeks, with station and week fixed effects. This bias is likely to be strongest for the same-week coefficients and for blocked section-days, since an ongoing closure moves the balance for as long as it lasts. As a further check, I re-estimate the models for new blockades on station-weeks with no section blocked within 50 kilometers in the two previous weeks, where earlier blockades cannot have moved the lagged scarcity measures.

The second is selective dropout. Stations are not observed in every week, and if the missing weeks were those in which stations ran out of fuel, the analysis would exclude the very situations in which a grievance account expects blockades to be most likely. I test for this with a linear probability model that estimates whether a station with a usable week also had a usable week the following week, as a function of its relative allocation and of any section blocked within 50 kilometers, with week fixed effects. The days run out measure is designed to address this problem, since it keeps the days on which stations held no fuel, including those on which they disappeared from the data after running low. Relative allocation, by contrast, leaves those days out, so I re-estimate its models on stations that reported on at least 90 percent of days, and with a version of the measure that sets days below 100 liters to that level instead of dropping them. For days run out, I check that the results do not depend on the imputed absences, using only the days on which stations reported an empty tank, and do not depend on the condition of a low reading before an absence, counting every eligible absence as a day run out. Appendix A.4 reports the attrition models, and Appendix B reports all the checks.

To convey the precision of each estimate, I report its minimum detectable effect at 80 percent power and a 5 percent two-sided test. This is the smallest proportional change in expected blockades that a model could reliably distinguish from zero, per log point of relative allocation and per additional day run out in a week. A null result is informative only when

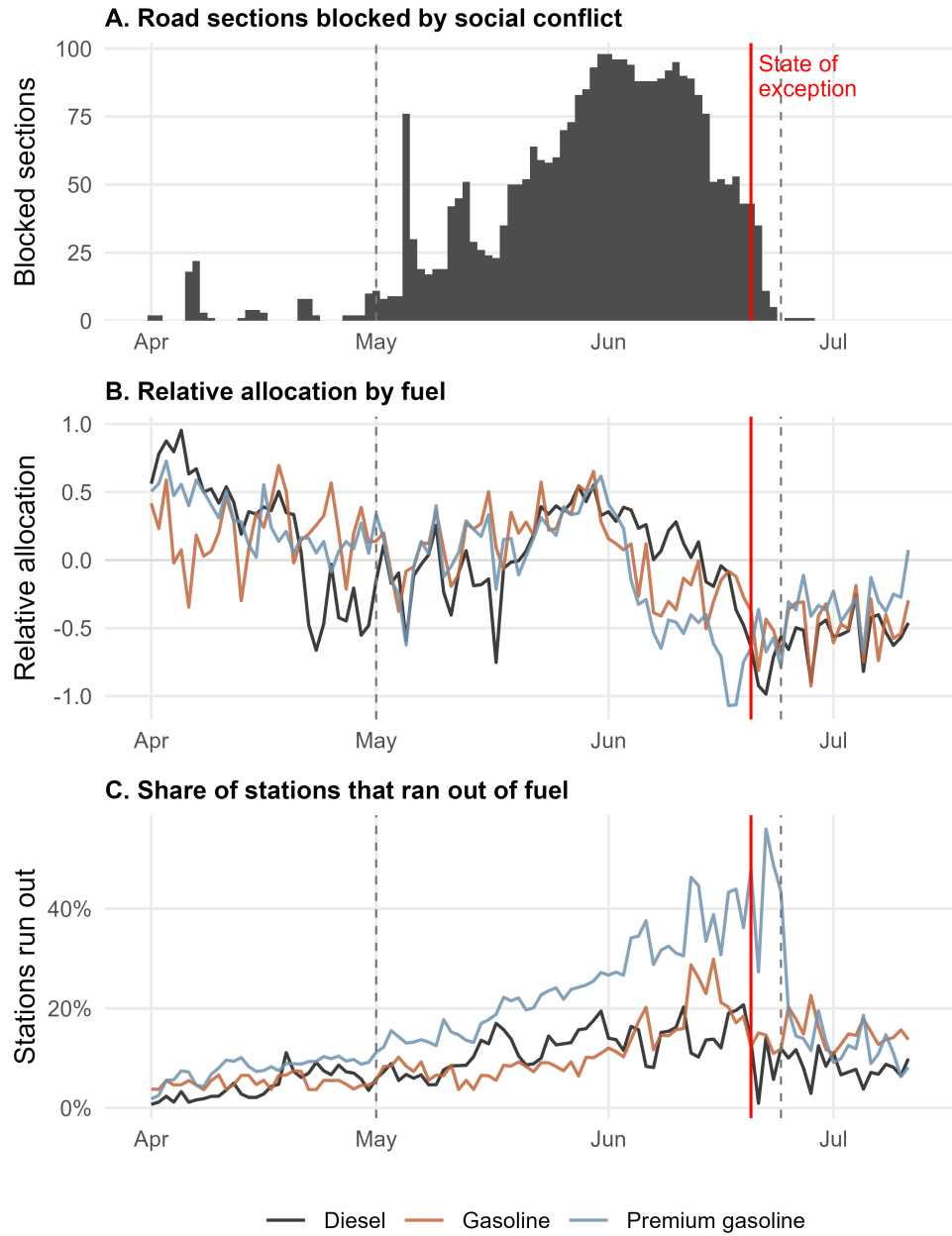
this threshold is small enough to rule out effects of a meaningful size.⁶

Results

Figure 2 shows the evolution of blockades (Panel A), relative allocation (Panel B) and the share of stations that ran out of fuel (Panel C). We see how the shortage preceded the blockades. Allocation of diesel and premium gasoline fell through April, while roads were still largely open, and recovered in the second half of May just as the wave gathered force, reaching a peak of 98 blocked sections at the turn of the month. Allocation fell again through June and reached its lowest point around the declaration of the state of exception on June 20th. Running out followed a different course, rising steadily with the wave for every fuel and most sharply for premium gasoline, which by late June had run out at more than half of its stations on some days. Both measures improved once the blockades ended, four days after the state of exception, although allocation remained below its April level through July.

⁶The within-station standard deviation of relative allocation is 0.87 log points for diesel, 0.86 for premium gasoline and 0.73 for gasoline, which makes a one log point shortfall close to a one standard deviation drop. The within-station standard deviation of days run out is 1.3 days for diesel and gasoline and 1.7 days for premium gasoline.

Figure 2: Fuel availability and road blockades in Bolivia, April to July 2026



Note: Panel B averages stations reporting on at least 90 percent of days. Panel C counts days with a balance below 100 liters and absences after a low reading. Dashed lines mark 1 May and 24 June, and the red line the state of exception on 20 June.

Read at face value, the national series point in different directions, since allocation improved in late May just as blockades intensified while the share of stations that ran out rose with the wave. National averages, however, mix the effect of scarcity on blockades with the effect of blockades on fuel availability, and Table 1 therefore turns to the station level. Panel A shows that a station holding less fuel than usual was no more likely to see blockades nearby, neither

in the same week nor in the two that followed. The estimates show no consistent pattern, with signs that change from one lag to the next within every fuel, and none reaches conventional significance. The closest are the two-week lags for gasoline, but both come from the smallest sample and rest on the same stations and lag. Panel B shows the same for stations that ran out of fuel. A station that ran out on more days than usual saw no more blockades nearby, and the only estimates that reach conventional levels, the same-week coefficients for diesel and gasoline, point, if anything, to slightly fewer. These null results are informative, since the models for diesel and premium gasoline could have detected an increase of about a third in expected blockades for a typical weekly shortfall, and effects of that size can therefore be ruled out. Across the 36 coefficients, four fall below conventional thresholds, about the number expected by chance alone.⁷

⁷For diesel, the minimum detectable effect is about 35 percent per log point of relative allocation, close to one within-station standard deviation, and about 30 percent per standard deviation of days run out, about 1.3 days. For premium gasoline, the thresholds are about 50 percent per log point and 35 percent per standard deviation of days run out.

Table 1: Local fuel scarcity and road blockades, April to July 2026

	New blockades			Blocked section-days		
	Diesel	Gasoline	Premium	Diesel	Gasoline	Premium
<i>Panel A. Running low</i>						
Relative allocation (t)	0.166 (0.106) [35%]	0.179 (0.190) [70%]	-0.192 (0.140) [48%]	-0.054 (0.104) [34%]	0.184 (0.193) [72%]	-0.234 (0.152) [53%]
Relative allocation ($t - 1$)	0.016 (0.116) [38%]	-0.273 (0.218) [84%]	0.102 (0.168) [60%]	0.060 (0.120) [40%]	0.133 (0.215) [83%]	-0.110 (0.188) [69%]
Relative allocation ($t - 2$)	-0.133 (0.107) [35%]	-0.411* (0.214) [82%]	0.011 (0.151) [52%]	-0.091 (0.104) [34%]	-0.360* (0.211) [81%]	-0.008 (0.161) [57%]
Stations	377	115	330	377	115	330
Observations	4,559	1,409	3,956	4,559	1,409	3,956
<i>Panel B. Running out</i>						
Days run out (t)	-0.155** (0.073) [23%]	-0.285* (0.148) [51%]	0.041 (0.063) [19%]	0.017 (0.064) [20%]	-0.053 (0.127) [43%]	0.074 (0.057) [17%]
Days run out ($t - 1$)	0.103 (0.073) [23%]	0.050 (0.165) [59%]	0.015 (0.079) [25%]	0.030 (0.071) [22%]	-0.177 (0.150) [52%]	0.060 (0.069) [21%]
Days run out ($t - 2$)	0.022 (0.076) [24%]	0.105 (0.135) [46%]	-0.076 (0.076) [24%]	-0.078 (0.078) [24%]	0.021 (0.146) [50%]	-0.070 (0.067) [21%]
Stations	442	110	404	442	110	404
Observations	5,611	1,507	5,490	5,611	1,507	5,490

Note: Negative binomial models with station and week random effects. The explanatory variable is relative allocation in Panel A and days run out per week in Panel B, both relative to the station's own mean. Standard errors in parentheses and minimum detectable effects in brackets, at 80 percent power and a 5 percent two-sided test. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Stations short of fuel were also more likely to drop out of the running-low panel (Appendix A.4), a problem the days run out measure addresses by keeping the days on which stations had no fuel. Six further checks, reported in Appendix B, restrict the sample to continuously reporting stations, exclude weeks following a nearby closure, and vary how dry days and absences are counted. None produces a consistent relationship.

Table 2 reports the reverse relationship, from blockades to fuel availability. Diesel stations

with a section blocked within 50 kilometers held about 23 percent more fuel in the same week and 12 percent more in the following one,⁸ since most diesel is consumed by freight and passenger transport and blockades halt sales while deliveries continue. Premium gasoline balances were about 17 percent lower in the week of a blockade and about 10 percent higher in the two weeks after, consistent with deliveries being interrupted and then restored, and premium stations ran out about two-thirds of a day more in the week of a blockade. Gasoline shows no relationship. These estimates matter for the main results in two ways. They show that both measures register local disruption from one week to the next, so the null results are unlikely to reflect measures too coarse to capture local shocks. And because blockades made stations run out more often, reverse causation pushes the estimates for days run out toward the grievance prediction, which makes the absence of positive coefficients in Panel B of Table 1 more telling. The effects of blockades on fuel availability also account for part of the national pattern in Figure 2, since the late May recovery in allocation coincides with the peak of the blockades, when closed roads reduced diesel sales, and the June rise in premium stations running out matches the more frequent running out of premium stations near closures.

⁸A coefficient b on the log balance corresponds to a change of $e^b - 1$ in the balance.

Table 2: Road blockades and subsequent fuel availability, April to July 2026

	Diesel	Gasoline	Premium
<i>Panel A. Relative allocation</i>			
Blockade within 50 km (t)	0.204*** (0.045)	0.052 (0.067)	-0.187*** (0.040)
Blockade within 50 km ($t - 1$)	0.114*** (0.034)	0.084 (0.057)	0.098*** (0.036)
Blockade within 50 km ($t - 2$)	0.009 (0.038)	-0.004 (0.059)	0.098** (0.042)
Stations	377	115	330
Observations	5,149	1,562	4,473
<i>Panel B. Days run out</i>			
Blockade within 50 km (t)	0.105* (0.063)	0.004 (0.102)	0.675*** (0.080)
Blockade within 50 km ($t - 1$)	-0.051 (0.044)	-0.072 (0.131)	0.422*** (0.063)
Blockade within 50 km ($t - 2$)	0.196*** (0.051)	-0.204* (0.120)	0.257*** (0.062)
Stations	442	110	404
Observations	6,153	1,592	5,866
Station fixed effects	Yes	Yes	Yes
Week fixed effects	Yes	Yes	Yes

Note: Linear models with station and week fixed effects. The outcome is relative allocation in Panel A and days run out per week in Panel B. Standard errors clustered by station in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Although local scarcity shows no relationship with where blockades began, new blockades tended to begin near roads that had recently been closed. In the diesel sample of the main models, weeks with a section closed within 50 kilometers in the previous two weeks made up 45 percent of station-weeks but accounted for 67 percent of new blockades, so new blockades began about two and a half times as often where roads had recently been closed.⁹ This fits the course of the wave described by Pacheco and Ríos (2026), in which blockades reached their widest territorial extent when the mobilization had narrowed to fewer sectors. The comparison is descriptive, however, and cannot tell whether new blockades followed recent ones or occurred

⁹The ratio compares the number of new blockades per station-week in the two groups, 0.083 after a nearby closure and 0.034 otherwise.

in places that are blocked often, for instance because they lie on roads whose closure is most disruptive.

Prior mobilization and road geography

If blockades follow organizational capacity, the 2026 wave should have begun where organizations had mobilized before; conversely, if they follow strategic roads, they should have concentrated where the road network makes closures most disruptive, whoever called them. To tell these two readings apart, I use blockades that took place before the crisis, which capture where organized groups have the networks and experience to close roads and cannot reflect the 2026 shortage. The ABC record from August 2020 to March 2026 shows where roads were blocked but not by whom, which is why I supplement this data with data from the Armed Conflict Location and Event Data project (ACLED) (Raleigh et al. 2010), which records 577 road blockades in Bolivia between October 2024 and October 2025, 509 of which name at least one organization. I group these into peasant and indigenous organizations, labor groups, and supporters of former president Evo Morales. Appendix A.5 describes the use of this data in more detail.

Since service stations cluster in cities, counting earlier blockades around each station would count the same blockade many times over, which is why I use hexagonal cells about 20 kilometers across, keeping the 485 cells that contain at least one road section reported by ABC. Blockades during the crisis concentrated where roads had been blocked before: cells with an earlier closure made up 78 percent of all cells and received 89 percent of the 350 blockades of the crisis. Part of this pattern may reflect the road network itself, since cells with more road sections offer more places to block and ABC records each section separately. To separate the two, Table 3 reports negative binomial models of the number of blockades that began in each cell during the crisis, regressed on earlier closures, earlier organized blockades by type and the number of stations, then adding the number of road sections, and finally department fixed effects. Earlier closures predict where blockades began, but the coefficient falls by about 40 percent once the number of road sections enters and disappears within departments. Earlier blockades by peasant, indigenous and labor organizations show no relationship, and those by Morales supporters matter only before road sections are included. The concentration of crisis blockades in previously blocked places therefore follows, to a large extent, the density of the road network captured by the road sections in each cell.

Table 3: Earlier mobilization and 2026 blockade onsets across grid cells

	Baseline	Road sections	Department FE
Earlier closures (log)	0.467*** (0.105)	0.288* (0.159)	0.115 (0.111)
Peasant and indigenous blockades (log)	-0.265 (0.203)	-0.134 (0.267)	-0.172 (0.252)
Labor blockades (log)	-0.031 (0.220)	-0.143 (0.182)	0.036 (0.200)
Blockades by Morales supporters (log)	0.543*** (0.204)	0.334 (0.236)	0.068 (0.268)
Service stations (log)	0.190 (0.122)	0.068 (0.118)	-0.013 (0.121)
Road sections (log)		1.074*** (0.269)	1.512*** (0.126)
Department fixed effects	No	No	Yes
Cells	485	485	485

Note: Negative binomial models of blockade episodes beginning between April and July 2026, by cell. Earlier closures are ABC episodes between August 2020 and March 2026, and earlier blockades by type are ACLED events between October 2024 and October 2025. All counts enter as $\log(1 + x)$. Standard errors clustered by department in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A remaining possibility is that scarcity led to blockades only in places where organizations able to call them were already present. Table 4 tests this by estimating the main models at the level of cells and weeks, with scarcity averaged over the stations in each cell and interacted with an indicator for earlier organized blockades. If scarcity mattered only in those places, the interactions should be negative for relative allocation and positive for days run out. The results show that no coefficient for relative allocation comes close to significance. For days run out, the only significant estimates concern diesel. In cells without earlier organized blockades, diesel stations that ran out more often saw slightly fewer new blockades nearby, while in cells with earlier organized blockades, the number of days a station ran out made no difference at all, precisely where this possibility would predict more blockades. Scarcity therefore carries no weight even where organized actors were present.

Table 4: Scarcity and blockade onsets by earlier organized activity

	Running low		Running out	
	Diesel	Premium	Diesel	Premium
Scarcity (t)	0.227 (0.277)	-0.541 (0.386)	-0.448** (0.198)	0.117 (0.149)
Scarcity ($t - 1$)	0.267 (0.280)	0.487 (0.403)	-0.071 (0.191)	-0.261 (0.190)
Scarcity ($t - 2$)	-0.110 (0.243)	0.196 (0.361)	0.171 (0.163)	0.161 (0.164)
Earlier organized blockades	0.075 (0.260)	0.579 (0.386)	0.370 (0.246)	0.534* (0.319)
Scarcity (t) $\times$ earlier organized	0.012 (0.325)	0.645 (0.451)	0.393* (0.232)	0.120 (0.176)
Scarcity ($t - 1$) $\times$ earlier organized	-0.283 (0.346)	-0.709 (0.501)	0.195 (0.217)	0.037 (0.239)
Scarcity ($t - 2$) $\times$ earlier organized	-0.214 (0.298)	-0.091 (0.442)	-0.196 (0.206)	-0.152 (0.206)
Road sections (log)	1.428*** (0.227)	1.196*** (0.233)	1.312*** (0.205)	1.282*** (0.246)
Cell random effects	Yes	Yes	Yes	Yes
Week random effects	Yes	Yes	Yes	Yes
Cells	142	90	159	114
Observations	1,829	1,146	2,118	1,628

Note: Negative binomial models with cell and week random effects. Scarcity is relative allocation in columns 1 and 2 and days run out per week in columns 3 and 4, averaged over the panel stations in each cell. Earlier organized blockades indicates at least one ACLED road blockade naming an organization in the cell between October 2024 and October 2025. Standard errors in parentheses. Gasoline is omitted because it has too few cells. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Discussion and conclusion

This research note finds that local fuel scarcity did not predict where road blockades began during Bolivia’s 2026 crisis, or how long roads nearby remained closed, whether scarcity is measured as how much fuel stations held or as how often they ran out. Blockades instead began where roads had been blocked before, a pattern that largely follows the density of the road network. Bolivia in 2026 is a hard case for this null result. The shortage was severe and highly uneven, and the blockade is the most familiar form of social pressure available to Bolivians, with organizations able to call one in virtually every region. Grievances turn into

protest when those who hold them also have the resources to act (Zárate-Tenorio 2021), and the Bolivian case offered both.

Accounts centered on everyday life provide the clearest benchmark. A fuel shortage disrupts the daily routines whose breakdown Snow et al. (1998) identify as a trigger of collective action, and fuel belongs to the goods whose threatened provision Simmons (2016) links to protest in Latin America. Running out is the most direct form of this disruption, since it leaves drivers without fuel at any price, yet stations that ran out more often saw no more blockades nearby, and the estimates for diesel and premium gasoline rule out effects of moderate size. These accounts may still describe the national wave, since the subsidy cut and the shortage threatened a good whose meaning extended across the country. What the evidence excludes is a local version of the mechanism, in which the disruption experienced around a station shapes contention around it.

The organizational account fits the evidence better, although the data cannot fully separate it from a geography of strategic roads blocked by whoever mobilizes. The experience of shortage was local, whereas the blockades were called by sectoral federations, civic committees and the Bolivian Workers' Confederation (Central Obrera Boliviana, COB) in response to a political situation common to the whole country. Bolivia's popular organizations have long combined the capacity to mobilize their bases from the top with the capacity to pressure governments from below (Anria 2013), and when action is organized above the level at which the grievance varies, local intensity should carry little predictive weight (McCarthy and Zald 1977). The pattern of the wave fits this reading once the road network is taken into account. Blockades during the crisis concentrated where roads had been blocked before, but earlier blockades by particular organizations did not predict where the wave began, and the wave reached its widest territorial extent when the mobilization had narrowed to fewer sectors (Pacheco and Ríos 2026). Organizations that call blockades across the country can choose the roads whose closure is most disruptive, so the location of blockades reflects the structure of the network more than the local presence of any one group. The repertoire reinforces this pattern. Bolivian actors have turned to the blockade for demands of every kind as institutional channels have proven unreliable (Sainz and Curti 2026), and a tactic used for everything will track any single grievance loosely.

Two limitations add nuance to these conclusions. The fuel balance records what a station had available for sale, and people may also have experienced scarcity through queues and rationing that the balance at the nearest station does not capture, or as a national shortage

that moved them to act wherever they happened to be. The running-out measure also rests partly on an assumption, since for diesel most days counted as run out are absences from the data after a low reading, although the results hold when only days with an empty tank reported are counted. Information on the organizations behind each 2026 closure, from conflict monitoring or press coverage, would allow a direct test of the organizational account. The analysis does rule out one further channel: scarcity could have made long closures easier to sustain for transport operators already unable to work, but blocked section-days did not track local scarcity either.

The Bolivian findings bear on a recurring pattern in the region, where fuel subsidy reforms have repeatedly met mass mobilization. In Ecuador, the removal of fuel subsidies in 2019 and the rise in fuel prices in 2022 were each followed by national strikes that the Confederation of Indigenous Nationalities of Ecuador (CONAIE) convened together with peasant and labor organizations, and whose capacity to paralyze roads across the country rested on that coordination (Ponce et al. 2020; Bretón, Gascón, and Mármol 2023). Readings of such episodes as the direct product of hardship assume that contention follows the distribution of costs. For governments and lenders, who calibrate the pace of reform and the size of compensation to the hardship a measure imposes (Drabo et al. 2023; Von Uexkull, Rød, and Svensson 2024), the Bolivian case implies that the map of earlier contention and of the roads whose closure is most disruptive offers a better guide to where unrest will appear than the map of material deprivation. More broadly, where a global shock produces unrest depends on the organizations that contest it and the terrain on which they act, beyond the intensity with which it reaches each locality.

References

- Anria, Santiago. 2013. "Social Movements, Party Organization, and Populism. Insights from the Bolivian MAS." *Latin American Politics and Society* 55 (3): 19–46.
- BBC News Mundo. 2026. *Rodrigo Paz declara el estado de excepción en Bolivia "para liberar las carreteras del país"*. BBC News Mundo, June. Accessed October 2, 2026. <https://www.bbc.com/mundo/articles/clye81v6pk2o>.
- Bretón, Víctor, Jordi Gascón, and Camila del Mármol. 2023. "Indigeneity Coalesced. The 2022 National Strike in Ecuador." *Anthropology Today* 39 (3): 13–16.
- Castro, Francisca, and Renata Retamal. 2024. "Does electoral behavior change after a protest cycle? Evidence from Chile and Bolivia." *Electoral Studies* 89.
- Chua, Charmaine, and Kai Bosworth. 2023. "Beyond the Chokepoint: Blockades as Social Struggles." *Antipode* 55 (5): 1301–1320.
- Correa, Sofía, Gaétan Nandong, and Mehdi Shadmehr. 2025. "Grievance Shocks and Coordination in Protest." *American Journal of Political Science* 69 (1): 341–354.
- Donoso, Sofía, Ismael Puga, Cristóbal Moya, and Monica M. Gerber. 2022. "Is It Worth the Risk? Grievances and Street Protest Participation During the COVID-19 Pandemic in Chile." *Journal of Politics in Latin America* 14 (3): 338–362.
- Drabo, Alassane, Kodjovi Eklou, Patrick Imam, and Kangni Kpodar. 2023. "Social Unrests and Fuel Prices: The Role of Macroeconomic, Social and Institutional Factors." *IMF Working Papers* 2023 (228).
- Drabo, Alassane, Kodjovi M. Eklou, Patrick A. Imam, and Kangni Kpodar. 2026. "Social Unrest and Fuel Prices: The Role of Macroeconomic, Social, and Institutional Factors." *The Energy Journal* 47 (3): 247–289.
- Dube, Oeindrila, and Juan F. Vargas. 2013. "Commodity Price Shocks and Civil Conflict. Evidence from Colombia." *Review of Economic Studies* 80 (4): 1384–1421.
- Evia, Jose Luis, Roberto Laserna, and Stergios Skaperdas. 2008. *Socio-political Conflict and Economic Performance in Bolivia*. CESifo Working Paper 2249. CESifo. https://ideas.repec.org/p/ces/ceswps/_2249.html.
- Foronda, Mauricio. 2023. *Datos históricos de transitabilidad en carreteras de Bolivia*. <https://github.com/mauforonda/transitabilidad-bolivia>. Accessed 18 August 2026.
- Fundación UNIR Bolivia. 2025. *Del desencuentro a la crisis: Conflictividad política en Bolivia*. Research Report. Fundación UNIR Bolivia. <https://unirbolivia.org/productos/del-desencuentro-la-crisis-conflictividad-politica>.
- . 2026. *Documento de análisis de la conflictividad social en Bolivia y perspectivas*. Documento de análisis 7. Enero a junio de 2026. La Paz: Fundación UNIR Bolivia.
- Hendrix, Cullen S., and Stephan Haggard. 2015. "Global Food Prices, Regime Type, and Urban Unrest in the Developing World." *Journal of Peace Research* 52 (2): 143–157.
- McCarthy, John D., and Mayer N. Zald. 1977. "Resource Mobilization and Social Movements: A Partial Theory." *American Journal of Sociology* 82 (6): 1212–1241.
- Natalini, Davide, Giangiacomo Bravo, and Edward Newman. 2020. "Fuel Riots: Definition, Evidence and Policy Implications for a New Type of Energy-Related Conflict." *Energy Policy* 147.

- Oliva, Ayelén. 2026. ““Gasolina basura” y otros 3 motivos que explican las crecientes protestas en Bolivia que el gobierno atribuye a Evo Morales y su entorno.” BBC News Mundo, May 19, 2026. Accessed August 18, 2026. <https://www.bbc.com/mundo/articles/cx2131g09rlo>.
- Pacheco, Huascar, and Pablo Ríos. 2026. *Documento de análisis de la conflictividad social en Bolivia y perspectivas*. Technical report 7. La Paz, Bolivia: Fundación UNIR Bolivia, July.
- Ponce, Karina, Andrés Vasquez, Pablo Vivanco, and Ronaldo Munck. 2020. “The October 2019 Indigenous and Citizens’ Uprising in Ecuador.” *Latin American Perspectives* 47 (5): 9–19.
- Raleigh, Clionadh, Andrew Linke, Håvard Hegre, and Joakim Karlsen. 2010. “Introducing ACLED. An Armed Conflict Location and Event Dataset.” *Journal of Peace Research* 47 (5): 651–660.
- Rudolfson, Ida. 2023. “Food Insecurity and Unrest Participation: Evidence from Johannesburg, South Africa.” *International Studies Quarterly* 67 (3).
- Sainz, Rodrigo Vargas, and Christian Berón Curti. 2026. “From Seasonality to Semantics: Benchmarking a Hybrid Probabilistic Forecasting System for Roadblocks in Bolivia.” *arXiv preprint*, <https://doi.org/10.48550/arXiv.2607.21785>.
- Simmons, Erica. 2014. “Grievances Do Matter in Mobilization.” *Theory and Society* 43 (5): 513–546.
- . 2016. *Meaningful Resistance: Market Reforms and the Roots of Social Protest in Latin America*. Cambridge University Press.
- Snow, David A., Daniel M. Cress, Liam Downey, and Andrew W. Jones. 1998. “Disrupting the Quotidian: Reconceptualizing the Relationship between Breakdown and the Emergence of Collective Action.” *Mobilization* 3 (1): 1–22.
- Unitel. 2026. “Ministro de Hidrocarburos anuncia que compra de combustible en bidones se limitará a 5 litros por día tras detectarse irregularidades.” Unitel, June 29, 2026. Accessed October 28, 2026. <https://unitel.bo/noticias/economia/ministro-de-hidrocarburos-anuncia-que-compra-de-combustible-en-bidones-se-limitara-a-5-litros-por-dia-tras-detectarse-irregularidades-CD21772213>.
- Vogt, Manuel. 2016. “A New Dawn? Indigenous Movements and Ethnic Inclusion in Latin America.” *International Studies Quarterly* 60 (4): 790–801.
- Von Uexkull, Nina, Espen Geelmuyden Rød, and Isak Svensson. 2024. “Fueling Protest? Climate Change Mitigation, Fuel Prices and Protest Onset.” *World Development* 177.
- Zárate-Tenorio, Bárbara A. 2021. “State-targeted Grievances and Resources: Protest Participation during Economic Downturns in Latin America.” *Governance* 34 (1): 47–66.

Fuel Scarcity and Social Mobilization in Bolivia

A Data

A.1 Road blockade data

Road blockades come from the incident reports of the Bolivian Highway Administration (Administradora Boliviana de Carreteras, ABC), which maintains a live map of the national road network. ABC reports conditions by section, defined as the stretch of highway between two named points, and classifies the condition of each affected section. Because ABC replaces the map as conditions change and keeps no public archive, I use the record compiled by Foronda (2023), which has queried the map roughly every two hours since August 2020. Each record contains the coordinates and name of the road section, the time at which ABC first displayed the report and the time at which it last appeared. I retain records whose condition is given as impassable due to social conflict (*no transitable por conflictos sociales*).

A record does not necessarily correspond to a blockade. ABC issues a new report every morning for each section that remains closed, and a blockade lasting ten days therefore enters the source as about ten consecutive records at the same coordinates. This schedule is reflected in the timing of the records, whose start times cluster at 6 am and 6 pm and whose durations concentrate around one day, with a median of 22.5 hours. Counting records would treat a single long closure as a sequence of new events. I therefore merge consecutive records at the same coordinates into one episode whenever less than 24 hours separate the end of one record from the start of the next. The choice of threshold makes little difference, since 3,177 of the 3,565 records begin less than six hours after the previous record at the same coordinates ended, and only 38 more fall between six and 24 hours. An episode begins with its first record and ends with its last, and the calendar days on which each episode kept its section closed provide the measure of blocked section-days used in the main analysis.

Table A.1 documents each step. Between 1 April and 31 July 2026, merging the 3,565 records with coordinates produces 350 episodes. Most are short, with a median duration of 1.8 days, although one in ten lasts more than 24 days. These long closures sustained the wave through June, when only 46 new episodes began against 252 in May. ABC also attaches an event label to many records, such as *bloqueo por motivos sociales* (blockade for social reasons) or *bloqueo por demandas locales* (blockade for local demands), but 17 percent of episodes have no label despite being attributed to social conflict. I keep all of them, since the condition of the section is recorded for every report while the event label is often empty or generic.

Table A.1: From ABC records to blockade episodes

ABC records, 1 April to 31 July 2026	
Records blocked by social conflict	3,583
Records without coordinates	18
Records without an end time	0
Records retained	3,565
Episodes	
Episodes after merging records	350
Median records per episode	3
Median duration (days)	1.8
90th percentile of duration (days)	24.8
Episodes by event label	
Social motives	187 (53%)
Blockade, unspecified	61 (17%)
No event recorded	59 (17%)
Local demands	43 (12%)
Episodes within 50 km of a station, running-low panel	
Diesel	90% (median 11.1 km)
Gasoline	45% (median 56.4 km)
Premium gasoline	66% (median 21.8 km)
Episodes within 50 km of a station, running-out panel	
Diesel	91% (median 9.8 km)
Gasoline	43% (median 57.4 km)
Premium gasoline	67% (median 19.1 km)

Note: Records and episodes are counted by the day on which they start. Consecutive records at the same coordinates less than 24 hours apart form one episode. Distances refer to the nearest station in each fuel’s panel, for the running-low and the running-out panels.

A.2 Fuel balances and the two measures of scarcity

Fuel data come from B-SISA, the biometric sales-control system operated by the National Hydrocarbons Agency (Agencia Nacional de Hidrocarburos, ANH). Under this system, buyers are registered and each sale at a service station is recorded. B-SISA publishes the balance of every station for each product, i.e., the volume of fuel in liters it has available for sale. The *sociedatos* collective queries this source repeatedly and archives the results in weekly files from March 2025 onward, together with a register that gives the coordinates of each station. I use the three products the archive reports most consistently, which are diesel, gasoline and premium gasoline.

The archive records each station’s balance many times a day but did so less often during the crisis, falling from an average of about 13 readings per station and day in April to about 5 in June. This matters because a station’s balance follows a daily cycle. On average, it sits about 5 to 7 percent above its daily mean in the late morning and 5 to 15 percent below it in the late evening, as deliveries arrive and fuel is sold over the day. If the number or timing of readings changes, an average of them would change as well, even if the station’s situation did not. To avoid this, I retain one reading per station, product and day, the positive reading taken closest to midday in Bolivian time, along with the highest reading of the day, which shows whether the station had fuel at any point.¹⁰ The retained midday readings have a median time of noon for all three fuels, and 80 percent of diesel readings fall between about 10 am and 2 pm. A small number of readings show isolated spikes far beyond any plausible station capacity, in some cases hundreds of millions of liters. I treat a reading as a recording error when it exceeds 100,000 liters and is more than five times the station’s median balance, and discard it. This

¹⁰The archive records timestamps in Bolivian time (UTC−4) and balances in liters, according to its documentation (<https://github.com/sociedatos/bo-combustible>).

rule removes 167 of the 98,544 midday readings in the study window while keeping the few large stations whose balances genuinely approach 100,000 liters.

The balance is a stock, rising with each delivery and falling with each sale, so a low balance can reflect either interrupted deliveries or strong demand, and a high balance either a recent delivery or a halt in sales. During a wave of blockades, both can happen at once, since closed roads can cut deliveries and stop traffic at the same time. Table 2 in the main text shows that both occurred during the crisis. Diesel balances rose in weeks with a blockade within 50 kilometers, consistent with halted freight reducing sales faster than deliveries, whereas premium balances fell in the same week and premium stations ran out more often. I therefore read the balance as the fuel available for sale at a station, which captures scarcity as customers would experience it.

The first measure, relative allocation, captures how much fuel a station held while it still had fuel to sell. It takes the logarithm of the midday reading and expresses each week's mean relative to the station's mean over the period. Days on which the reading stayed below 100 liters are left out, since a balance of zero has no logarithm and on a log scale small differences between nearly empty stations would appear as large swings in availability.

The second measure, days run out, captures how often a station had no fuel to sell at all. A day counts as run out when the station's highest reading of the day was below 100 liters. A station that runs out may also close and stop appearing in the data, so a missing day also counts as run out when three conditions hold. The station's last reading before the absence must be below its own 25th percentile of midday balances in the study period, which separates closures after a decline in stock from reporting failures at stations that still had fuel. At least half of the stations in the same department, one of Bolivia's nine first-level administrative units, must have reported that day, which rules out gaps in data collection affecting a whole region. Finally, the station must appear again later in the study period, which rules out stations that closed for good. The weekly measure is the share of days run out, expressed in days per week and relative to the station's mean over the period.

Many stations registered for gasoline report an empty tank almost every day, before and during the crisis, which reflects a product they rarely sell more than a shortage. Because the archive begins a year before the study period, the running-out measure can be restricted to stations that regularly sold each fuel before the crisis, defined as those holding at least 100 liters on at least half of the days they reported before April 2026, with at least 30 days observed. The rule removes most gasoline stations, leaving 119 of the 548 that report at least once, and few diesel and premium stations (Table A.3). Table A.2 shows how the days run out divide between days on which stations reported an empty tank and days on which they were absent after a low reading. For diesel, about three quarters are absences, consistent with stations closing when they run out instead of reporting a zero balance, while for gasoline and premium gasoline most are days with an empty tank reported. Both kinds of days peak in June for every fuel, so the imputed absences follow the same course as the crisis and the observed dry days.

Table A.2: Days run out by fuel and month, April to July 2026

	Diesel	Gasoline	Premium gasoline
Panel A. Balance below 100 liters all day			
April	1.3%	3.3%	5.6%
May	2.9%	4.0%	11.8%
June	2.6%	6.8%	20.2%
July	1.6%	11.6%	4.2%
April to July	2.1%	6.1%	10.3%
Panel B. Absent from the data after a low reading			
April	3.1%	1.8%	2.3%
May	7.8%	3.7%	6.6%
June	10.4%	10.1%	12.2%
July	5.7%	1.8%	4.1%
April to July	6.6%	4.2%	6.1%

Note: Stations in the running-out panel. Share of station-days on which the station’s highest reading was below 100 liters (Panel A) and on which it was absent from the data after a low reading (Panel B), among all days on which the station was observed or counted as run out. The two panels add up to the share of days run out.

A.3 Linking blockades to stations

Each fuel is analyzed separately, using only the stations whose availability of that fuel can be measured. For the diesel models, the question is whether blockades were more frequent near stations running short of diesel, and the relevant station for each blockade is therefore the nearest one in the diesel panel. I link each blockade episode to its nearest station separately for each fuel and each panel, so the same episode can be linked to one station in the diesel analysis and to a different one in the premium gasoline analysis, or in the running-low and the running-out panels. Linking each episode only once, to its nearest station overall, would lose every episode whose nearest station does not sell a given fuel or is not in the panel. In a first version of the data that linked episodes only once, about a third of the episodes near a station were lost from the diesel models and most were lost from the gasoline models.

Episodes more than 50 kilometers from the assigned station are dropped. The test assumes that people blocking a road experience scarcity at the stations where they usually buy fuel, and these are likely to lie within their own area. Beyond 50 kilometers, a shortage at the assigned station is unlikely to be one that the people blocking the road actually faced. Coverage is best for diesel, where about 90 percent of episodes lie within 50 kilometers of a panel station, at a median distance of about 10 kilometers. The shares are about two-thirds for premium gasoline and under half for gasoline, whose panel stations are few and thinly spread across the country (Table A.1). For diesel and premium gasoline, most episodes lie within 25 kilometers of a station, so the cutoff mainly removes isolated episodes far from any station.

The reverse-direction models and the robustness checks that exclude recent closures use a different measure of exposure, namely whether any section was closed within 50 kilometers of a station at some point during the week. A closed road can affect a station’s supply or sales regardless of which station is nearest to it, so this measure counts every episode in range of every station, including episodes that began in earlier weeks and were still in place.

A.4 Sample construction and attrition

The study period runs from April 1 to July 31, 2026, covering 18 calendar weeks. Both panels follow two criteria designed to ensure that each measure of scarcity reliably compares a station with its own norm. The first defines which weeks of a station’s data contain enough information to measure its availability, and the second which stations have enough of these weeks to establish their usual level.

First, a week is usable for a given station when it contains at least three usable days, since a weekly mean built from one or two days would mostly reflect when a delivery happened to arrive. For relative allocation, a usable day is one with a reading of 100 liters or more. For days run out, it is any day on which the station was observed or counted as run out, so the weeks in which stations ran out of fuel stay in this panel. Second, a station enters a panel when it has at least 12 usable weeks out of 18. Because both measures compare each week with the station’s mean over the period, a mean estimated from only a few weeks would make every deviation from it unreliable, and twelve weeks also leave enough consecutive observations to define the two lags the models require. Lags are defined over calendar weeks, so a week that was not usable leaves the following two weeks without lagged values.

Table A.3 reports the number of stations and station-weeks at each step. In the running-low panel, about three-quarters of the diesel and premium gasoline stations that report at least once are included, while for gasoline only 115 of 548 stations meet the criteria, mostly because of the zero balances described in Appendix A.2. The running-out panel starts from the stations that regularly sold each fuel before the crisis and keeps most of them, and it includes more diesel and premium gasoline stations than the running-low panel, since it keeps those whose balance often fell below 100 liters. In both panels, the requirement of two observed lags removes about a fifth of the station-weeks.

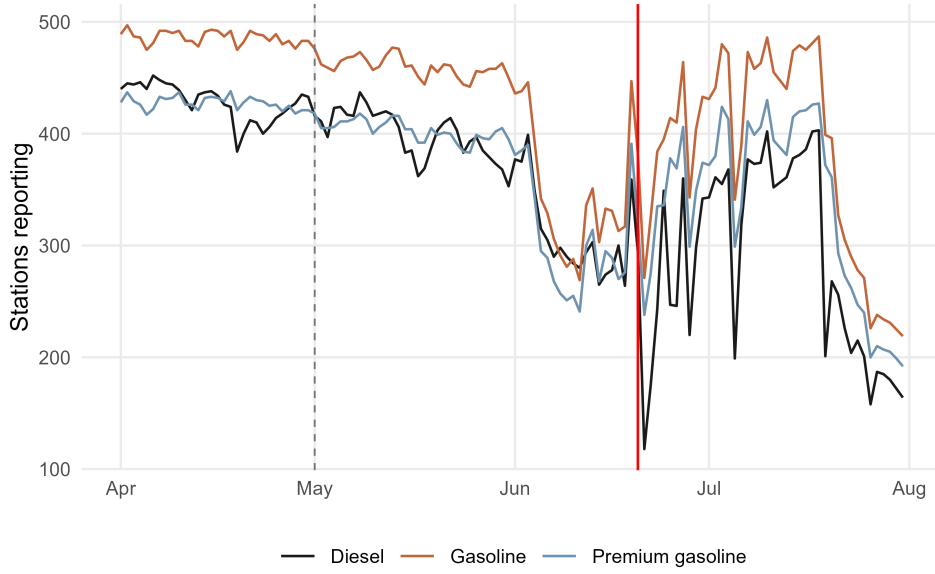
Table A.3: Sample construction by fuel

	Diesel	Gasoline	Premium gasoline
Running low (relative allocation)			
Stations reporting at least once	505	548	479
Stations with a balance of at least 100 liters	505	433	458
Stations in the panel	377	115	330
Station-weeks in the panel	5,881	1,774	5,114
Station-weeks in the models	4,559	1,409	3,956
Running out (days run out)			
Stations that regularly sold the fuel before April	477	119	433
Stations in the panel	442	110	404
Station-weeks in the panel	7,011	1,810	6,654
Station-weeks in the models	5,611	1,507	5,490

Note: Counts for 1 April to 31 July 2026, except for stations that regularly sold the fuel, which refer to the year before April 2026. Station-weeks in the models exclude weeks without both lagged values.

The composition of the samples also depends on which stations appear in the archive each day, a number that varies considerably over the period (Figure A.1). It stays close to its April level through May and falls by about a third in the first days of June, just after the number of blocked sections peaked. Coverage recovers unevenly after the state of exception, with sharp one-day drops, and falls again in the last days of July, when about 200 stations stop appearing in the source. This second fall is the reason Figure 2 ends on 12 July.

Figure A.1: Stations reporting each day, April to July 2026



Note: Stations with at least one balance reading on each day, including readings of zero, by fuel. The dashed line marks 1 May and the red line the state of exception.

If stations dropped out of the sample for reasons related to scarcity or to blockades, the running-low panel would compare a selected group of stations. To check whether this happened, I follow each station from one week to the next and estimate whether stations with less fuel than usual, or with a road blocked nearby, were less likely to have a usable week the following week. The test includes every station-week with at least three readings of 100 liters or more, including stations that never meet the panel criteria, and each coefficient can be read as the change, in percentage points, in the probability that a station remains in the sample.¹¹

Table A.4 shows that dropout is not random. Stations holding less fuel than usual are less likely to remain in the sample the following week, particularly for premium gasoline, and gasoline and premium stations with a blockade nearby are also less likely to remain. Diesel is the exception for blockades, with a positive and only marginally significant relationship, consistent with the higher diesel balances near blocked roads reported in Table 2. These relationships are modest, but they imply that the weeks missing from the running-low panel are disproportionately those in which stations were short of fuel or near a closure, so its estimates describe variation among stations that still had some fuel. The running-out panel is designed to address this, since it keeps the days on which stations held no fuel, including those on which they disappeared from the data after running low.

¹¹The estimates come from linear probability models with week fixed effects, which compare stations within the same week and keep the national falls in coverage from driving the results. Standard errors are clustered by station.

Table A.4: Attrition, station reporting in the following week

	Usable week at $t + 1$		
	Diesel	Gasoline	Premium
Relative allocation (t)	0.015*** (0.005)	0.015 (0.011)	0.037*** (0.006)
Blockade within 50 km (t)	0.018* (0.010)	-0.120*** (0.017)	-0.046*** (0.011)
Mean of outcome	0.88	0.82	0.89
Week fixed effects	Yes	Yes	Yes
Stations	504	359	452
Observations	6,729	2,614	5,750

Note: Linear probability models with week fixed effects. The outcome equals one when the station has at least three readings of at least 100 liters in the following week. Premium refers to premium gasoline. Standard errors clustered by station in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.5 Earlier blockades and the territorial grid

The analysis of earlier mobilization requires knowing who blocked roads before the crisis, which the ABC records do not report. ACLED fills this gap by naming the organizations involved in each event, but because it relies on press reports, it may miss closures that the road authority records. I use the ACLED events for Bolivia between 26 October 2024 and 24 October 2025, the most recent year available at the time of the analysis, which ends six months before the study period begins.

ACLED events are kept as road blockades when their description mentions blocking together with a road, highway, route or bridge, which excludes blocked offices, plazas and urban streets. Of the 815 Bolivian events that mention blocking, 577 meet this condition, and 509 of them name at least one organization in the associated actor field. I group these organizations as peasant and indigenous (farmers, the CSUTCB¹² and indigenous groups), labor (labor groups, teachers, health workers, miners and transport workers) and Morales supporters (Evo Pueblo and the MAS-IPSP). The groups are not exclusive, since many events name organizations of several types, and they cover 262, 201 and 265 events, respectively.

The two sources record blockades in different units. ABC reports the closure of a road section, which I merge into episodes, while ACLED records one event for each place and day on which a blockade was reported, so a closure lasting a week can appear as seven ACLED events. Table A.5 therefore counts an ABC episode as matched when an ACLED road blockade lies within a given distance and falls between the day before the episode began and the day after it ended. About half of ABC episodes have a match within 20 kilometers, rising to three quarters for closures lasting more than three days, as expected from press coverage that reports long closures more often than short ones. Of the matched episodes, 89 percent carry at least one named organization. A smaller share of ACLED events match an ABC episode, since ACLED also records blockades on roads outside the network ABC monitors and locates each event at the nearest named town, which can lie more than 20 kilometers from the blocked section.

The grid consists of hexagonal cells 20 kilometers across, the same distance used to match the two sources, drawn on a Lambert azimuthal equal-area projection centered on Bolivia so that all cells cover the same area. I keep only cells containing at least one section that ABC has reported for any reason since 2020, including landslides and road works, which approximates the network the road authority monitors and limits the comparison to places where a closure could have been recorded. Each cell is assigned to the department nearest its centroid, using the

¹²Confederación Sindical Única de Trabajadores Campesinos de Bolivia, or United Trade Union Confederation of Rural Workers of Bolivia.

official administrative boundaries, which defines the department fixed effects and the clusters for the standard errors. For each cell, I count the ABC episodes attributed to social conflict that began between August 2020 and March 2026, the ACLED road blockades by organization type, the service stations, the road sections and the episodes that began between April and July 2026, and all counts enter the models as $\log(1 + x)$.

The cell-week panels behind Table 4 take, for each fuel, the cells containing at least one station of the corresponding panel, and average the scarcity measure over those stations in each week, with lags defined over calendar weeks as in the station-week panels. This leaves 142 cells for diesel and 90 for premium gasoline in the relative allocation panels, and 159 and 114 in the days run out panels. A cell counts as having earlier organized blockades when at least one ACLED road blockade naming an organization lies within it.

Table A.5: Correspondence between ACLED and ABC, October 2024 to October 2025

	ABC episodes matched	ACLED events matched
By distance		
10 km	36%	29%
20 km	52%	42%
30 km	58%	47%
By duration of the ABC episode, at 20 km		
Up to 1 day (115 episodes)	44%	
1 to 3 days (64 episodes)	47%	
Over 3 days (46 episodes)	76%	

Note: Share of ABC episodes with at least one ACLED road blockade event nearby, and share of ACLED road blockade events near at least one ABC episode. Events match when they fall between the day before an episode began and the day after it ended.

B Robustness

The main specification regresses the number of new blockades and of blocked section-days within 50 kilometers of each station on its scarcity in the same week and the two previous weeks, measured either as relative allocation or as days run out, using negative binomial models with station and week random effects (Table 1). Two features of the data could hide a relationship between scarcity and blockades. First, stations tend to drop out of the running-low panel in the weeks in which they run short of fuel (Appendix A.4). Second, blockades themselves move fuel balances and make stations run out (Table 2), which can obscure the relationship running from scarcity to blockades. Table B.1 re-estimates the main specification six times, each time changing one element to address one of these problems. Panels A to C concern relative allocation and Panels D to F days run out. All checks use new blockades as the outcome, since blocked section-days also count closures that began in earlier weeks and were still in place, and an ongoing closure keeps moving the balance for as long as it lasts.

Panel A addresses selective dropout from the running-low panel. If the null result were driven by stations entering and leaving the sample, it should change when the composition of the sample is held fixed. This check restricts the sample to stations reporting on at least 90 percent of days, which leaves 110 stations for diesel, 112 for premium gasoline and 48 for gasoline. No coefficient approaches significance.

Panel B addresses reverse causation for relative allocation. Because closures can raise or lower a station's balance, the lagged allocation of a station near a recent blockade may reflect that blockade instead of the station's underlying supply. This check drops every station-week with a section blocked within 50 kilometers in the two previous weeks, which removes about half of the station-weeks and most of the new blockades, since most began near recent closures. Every coefficient remains far from significance.

Panel C combines running low and running out in a single measure. Instead of dropping days below 100 liters, it sets them to 100 before taking logs, so that a day on which a station ran dry counts as the lowest possible level and the week stays in the sample. For premium gasoline, every coefficient is close to zero. The same-week coefficient for diesel is positive and significant ($p = 0.04$), the opposite of the grievance prediction and in line with blockades raising diesel balances in the week they occur. The two-week lag for diesel is negative and significant ($p = 0.03$), in the direction a grievance account predicts.

Panel D addresses reverse causation for days run out, dropping every station-week with a section blocked within 50 kilometers in the two previous weeks. This check matters for this measure because blockades made stations run out more often, which pushes the estimates toward the grievance prediction. Without those weeks, no coefficient points in that direction, and the only significant estimate, the two-week lag for premium gasoline ($p = 0.01$), is negative.

Panel E checks that the results do not depend on the imputed absences, counting only the days on which stations reported a balance below 100 liters all day. Since absences make up most of the days run out for diesel (Table A.2), this check changes the measure most for that fuel. For premium gasoline and gasoline, the coefficients are small and far from significance. For diesel, the two-week lag is positive and significant ($p = 0.05$), in the grievance direction, while the same-week coefficient points the other way.

Panel F checks that the results do not depend on the condition of a low reading before an absence, counting every eligible absence as a day run out. The two significant estimates, the same-week coefficients for diesel and gasoline ($p = 0.04$ for both), are negative, against the grievance prediction.

Across the six checks, 6 of 54 coefficients reach the 5 percent level, close to the number expected by chance alone. Four of them point against the grievance prediction. The other two are diesel two-week lags, in Panels C and E, but neither appears in the main estimates for either measure, nor in the checks that exclude weeks following a nearby closure (Panels B

and D), which suggests that they reflect the clustering of blockades near recent closures more than a delayed response to scarcity. None of the checks changes the conclusion of the main estimates.

Table B.1: Robustness of the estimates for new blockades

Fuel	Lag	Coef. (SE)	p	Stations	Obs.
Panel A. Running low, stations reporting on at least 90 percent of days					
Diesel	Same week	-0.165 (0.208)	0.43	110	1,667
Diesel	1 week	0.229 (0.245)	0.35	110	1,667
Diesel	2 weeks	-0.205 (0.212)	0.33	110	1,667
Gasoline	Same week	0.442 (0.337)	0.19	48	729
Gasoline	1 week	-0.296 (0.399)	0.46	48	729
Gasoline	2 weeks	-0.530 (0.359)	0.14	48	729
Premium gasoline	Same week	-0.226 (0.324)	0.49	112	1,637
Premium gasoline	1 week	-0.019 (0.377)	0.96	112	1,637
Premium gasoline	2 weeks	-0.294 (0.327)	0.37	112	1,637
Panel B. Running low, no closure nearby in the two previous weeks					
Diesel	Same week	0.189 (0.184)	0.31	376	2,494
Diesel	1 week	0.044 (0.173)	0.80	376	2,494
Diesel	2 weeks	-0.022 (0.172)	0.90	376	2,494
Gasoline	Same week	0.119 (0.281)	0.67	115	904
Gasoline	1 week	0.493 (0.334)	0.14	115	904
Gasoline	2 weeks	-0.486 (0.302)	0.11	115	904
Premium gasoline	Same week	-0.026 (0.309)	0.93	330	2,189
Premium gasoline	1 week	0.081 (0.326)	0.80	330	2,189
Premium gasoline	2 weeks	-0.096 (0.317)	0.76	330	2,189
Panel C. Running low and running out combined, dry days set to 100 liters					
Diesel	Same week	0.192 (0.095)	0.04	395	4,859
Diesel	1 week	-0.064 (0.101)	0.53	395	4,859
Diesel	2 weeks	-0.203 (0.095)	0.03	395	4,859
Gasoline	Same week	0.266 (0.163)	0.10	105	1,387
Gasoline	1 week	-0.106 (0.191)	0.58	105	1,387
Gasoline	2 weeks	-0.208 (0.183)	0.26	105	1,387
Premium gasoline	Same week	-0.043 (0.100)	0.67	386	4,915
Premium gasoline	1 week	-0.000 (0.119)	1.00	386	4,915
Premium gasoline	2 weeks	0.021 (0.115)	0.86	386	4,915
Panel D. Running out, no closure nearby in the two previous weeks					
Diesel	Same week	-0.113 (0.134)	0.40	442	3,000
Diesel	1 week	0.023 (0.122)	0.85	442	3,000
Diesel	2 weeks	-0.120 (0.140)	0.39	442	3,000
Gasoline	Same week	-0.062 (0.187)	0.74	110	1,060
Gasoline	1 week	-0.179 (0.231)	0.44	110	1,060
Gasoline	2 weeks	-0.282 (0.229)	0.22	110	1,060
Premium gasoline	Same week	0.044 (0.179)	0.81	404	2,766
Premium gasoline	1 week	0.133 (0.213)	0.53	404	2,766
Premium gasoline	2 weeks	-0.447 (0.179)	0.01	404	2,766
Panel E. Running out, dry days observed in the data only					
Diesel	Same week	-0.181 (0.126)	0.15	397	4,879
Diesel	1 week	0.186 (0.117)	0.11	397	4,879
Diesel	2 weeks	0.223 (0.112)	0.05	397	4,879
Gasoline	Same week	-0.137 (0.197)	0.48	107	1,407
Gasoline	1 week	-0.031 (0.225)	0.89	107	1,407
Gasoline	2 weeks	-0.068 (0.233)	0.77	107	1,407
Premium gasoline	Same week	0.063 (0.074)	0.40	386	4,915
Premium gasoline	1 week	0.037 (0.097)	0.70	386	4,915
Premium gasoline	2 weeks	0.002 (0.091)	0.98	386	4,915
Panel F. Running out, every eligible absence counted as dry					
Diesel	Same week	-0.124 (0.060)	0.04	464	6,428
Diesel	1 week	0.054 (0.064)	0.40	464	6,428
Diesel	2 weeks	0.085 (0.062)	0.17	464	6,428
Gasoline	Same week	-0.282 (0.140)	0.04	115	1,609
Gasoline	1 week	0.017 (0.150)	0.91	115	1,609
Gasoline	2 weeks	0.137 (0.128)	0.28	115	1,609
Premium gasoline	Same week	0.020 (0.059)	0.73	412	5,796
Premium gasoline	1 week	-0.023 (0.075)	0.76	412	5,796
Premium gasoline	2 weeks	-0.051 (0.073)	0.49	412	5,796

Note: Negative binomial models of new blockades within 50 kilometers of the station, with station and week random effects. In Panels A to C the explanatory variable is relative allocation, where negative values indicate scarcity, and Panel C sets days below 100 liters to that level instead of dropping them. In Panels D to F it is days run out per week, relative to the station's mean, where positive values indicate scarcity. Panel E counts only days with a balance below 100 liters, and Panel F counts every eligible absence from the data as a day run out.