

India's Supply Chains Unchained

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with research assistance from Pulkit Aggarwal, Simranjeet Dhir, Toshan Majumdar.

June 8, 2020

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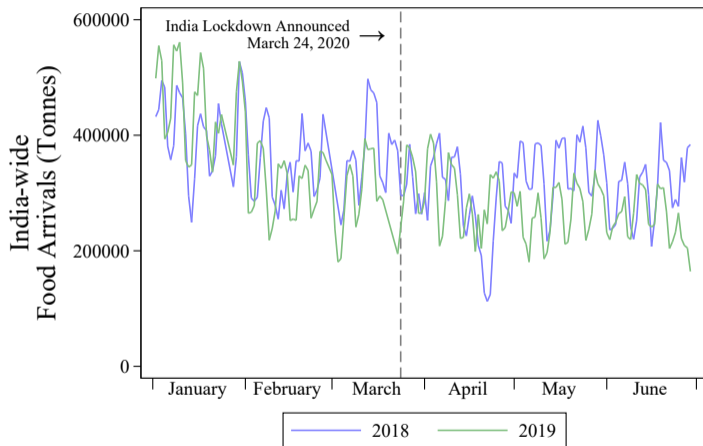
Coronavirus and the lockdown in India

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- March 24: strict nationwide lockdown announced by PM Modi (cases ~500)
- April 15, May 4, May 18: lockdown extensions, some relaxation
- June 8: phased reopening begins (“Unlock 1.0”)
- Today: ~250k confirmed cases, ~7k deaths (lower than expected, but rising)
- This talk: effects on volumes and prices at agricultural markets across India

Four Food Facts

- ❶ Volumes fell by over 60% but have since recovered
- ❷ Wholesale prices increased for a few weeks, then returned to a downward trend
- ❸ The initial volume shock was larger in high-covid states, but the recovery was similar
- ❹ Within a state, high-covid districts were no more affected than others

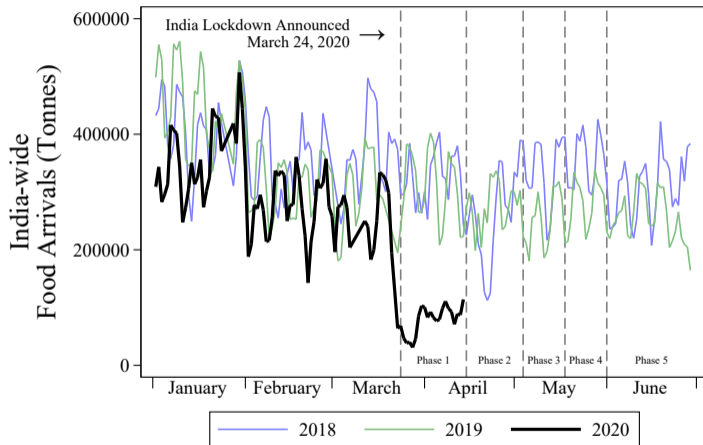
We use volumes in 2018 and 2019 for comparison



Y-axis is 3-day moving average of arrival volumes, excluding wheat.
Excludes Republic Day, Holi, Sundays. Source: agmarknet.gov.in.
Sample comprises 1804 mandis that reported data at least once in March 2020.

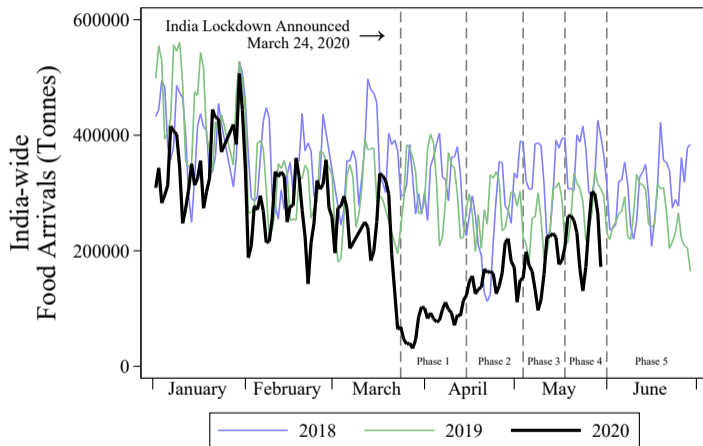
Volumes fell by over 60% initially

▶ Extensive Margin



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Volumes have since recovered



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What drove volume changes?

- Why did volumes plummet? [Commodities](#)
 - Migrant labourers in urban areas returned home, reducing labour supply at markets
 - Retail vendors reduced procurement (due to demand drop and no weekly markets)
 - Uncertainty about the rules on inter-state transport of goods limited out-of-state supply
 - Many wholesale markets completely shut

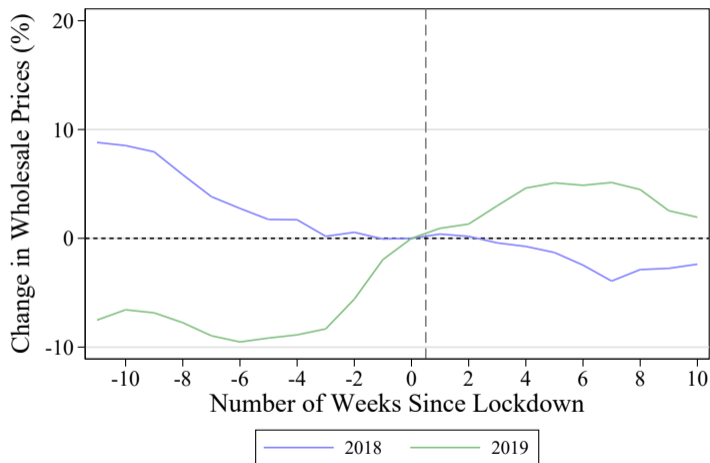
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- Why did volumes recover?
 - Wholesale markets re-opened with improved sanitation and social distancing policies
 - Demand is likely to be recovering given relaxation of lockdown rules

Four Food Facts

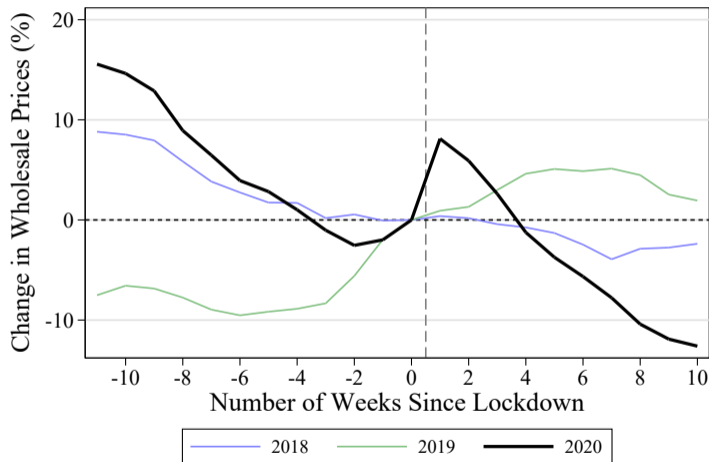
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Wholesale prices in 2018 and 2019



Controls for food-by-mandi category. Source: agmarknet.gov.in.
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Wholesale prices increased for a few weeks, then returned to trend



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Demand or supply shocks?

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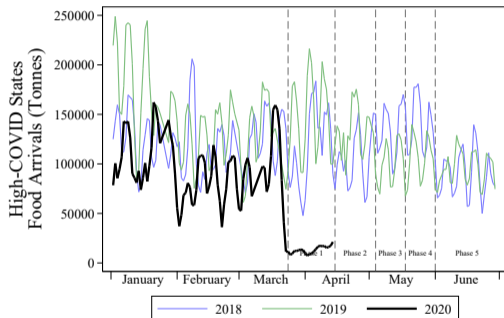
- The immediate price increase:
 - Consistent with the negative supply shock, not fully offset by demand falling
- Prices returning to trend:
 - Hard to say whether prices are lower than they would have been otherwise
 - If lower, consistent with supply back to normal, demand below normal levels

[▶ Commodities](#)

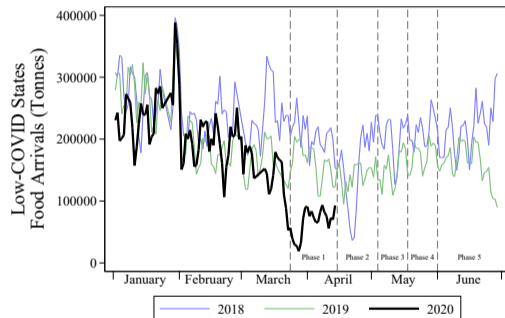
Four Food Facts

- I Volumes fell by over 60% but have since recovered
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The initial volume shock was higher in high-covid states ▶ States

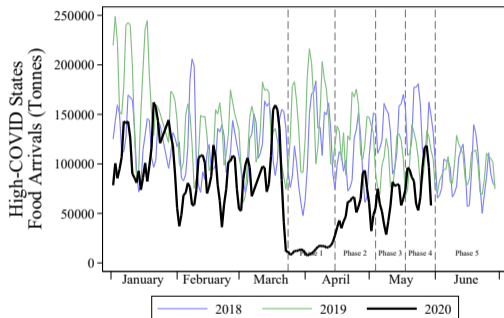


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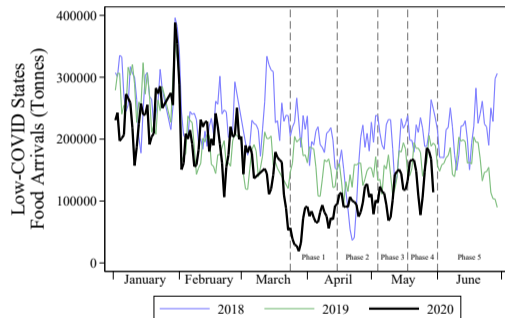


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But the recovery is nationwide



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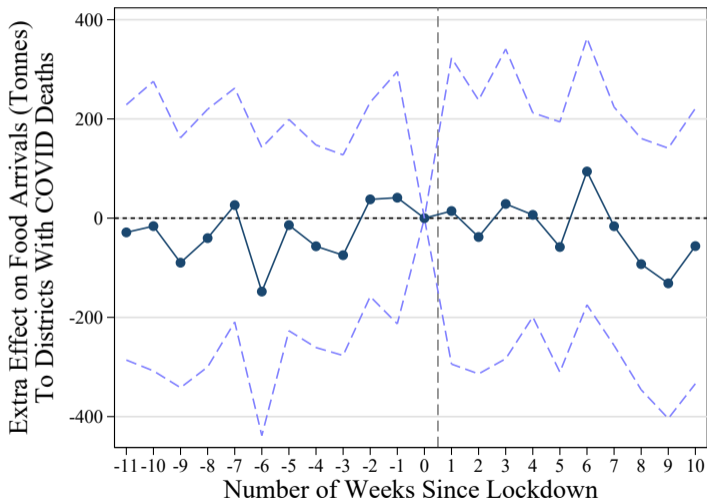
How local are volume shocks?

- High-COVID states were hit more, but what about high-COVID districts within states?
- Compare evolution of volumes for districts with ≥ 1 COVID death by June 1 vs. others

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- High-COVID states were hit more, but what about high-COVID districts within states?
- Compare evolution of volumes for districts with ≥ 1 COVID death by June 1 vs. others
- Comparing within states, estimate *additional* impact of lockdown if have COVID deaths
- This shuts down any state-specific policy responses

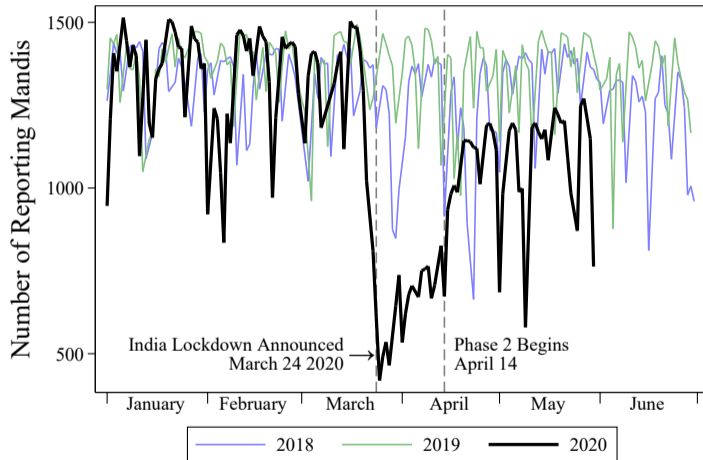
High-COVID districts were no more affected

[▶ All Variation](#)

Summing Up

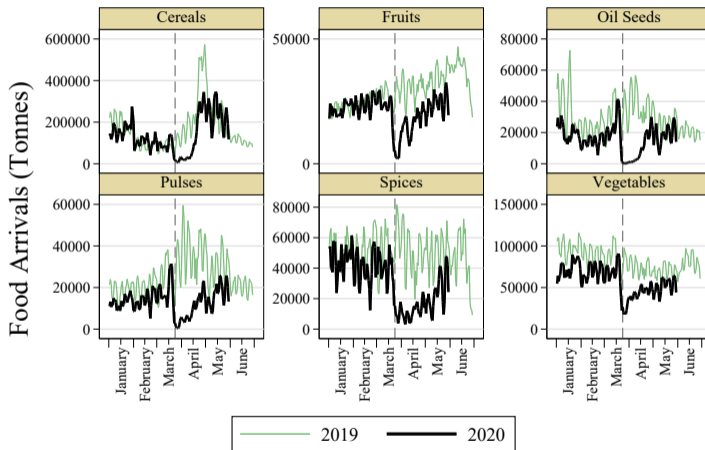
- Four Food Facts summarised:
 - After an initial shock, volumes and prices have largely recovered
 - Surprisingly, this recovery seems unrelated to coronavirus across- and within-states
- An interpretation:
 - Volume responses driven by state responses more than local fears
 - Recovery likely to continue since more policy-driven than covid-driven

The extensive margin: many markets shut down entirely ▶ Back



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Volumes evolved similarly across commodity groups [▶ Back](#)

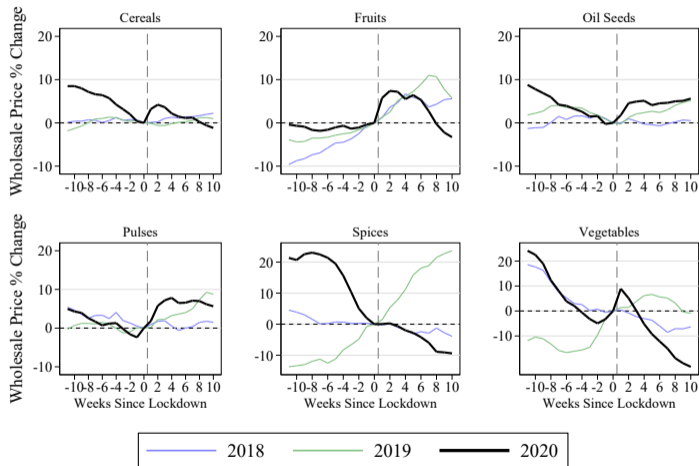


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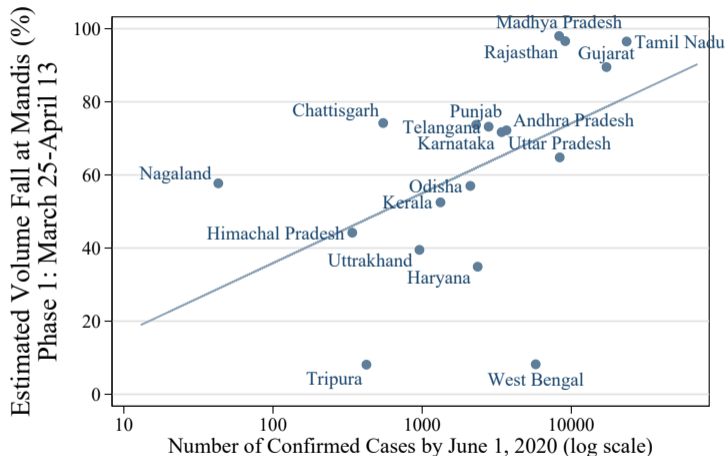
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Price evolution is mostly similar across commodities [▶ Back](#)



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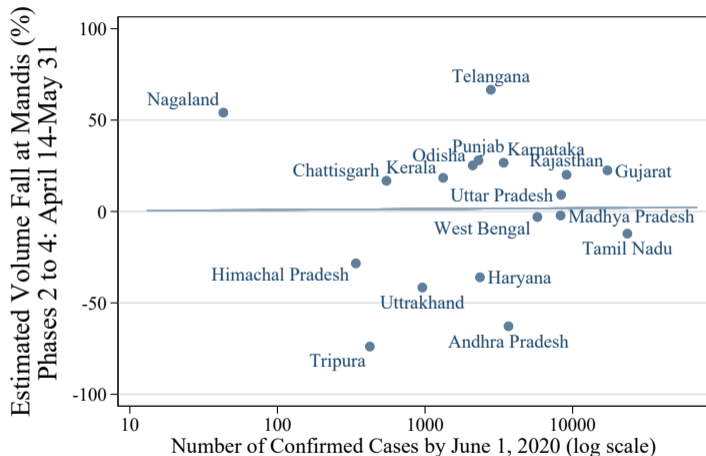
The initial volume shock was higher in high-covid states



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The lockdown non-wheat volume drop is estimated from state-by-state diff-in-diff regressions, using data from March to May in 2019 and 2020.

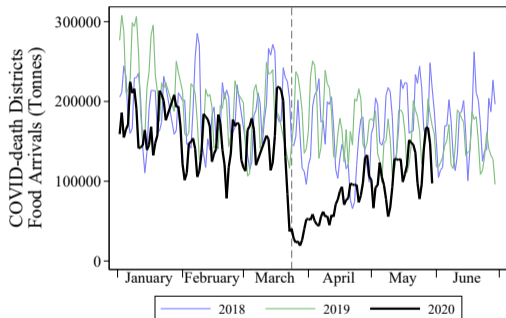
But all states are moving back to 2019 levels [▶ Back](#)



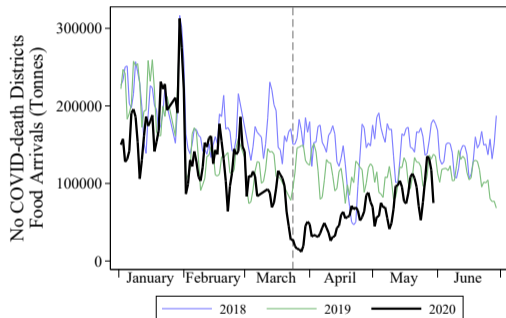
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