AMRO
ASEAN +3 MACROECONOMIC RESEARCH OFFICE

Analytical Note

Thursday, May 28, 2020

THE COVID CONUNDRUM: REOPENING IN A TRULY GLOBAL PANDEMIC[1]

"A strategy that sacrifices people in favor of, supposedly, a better economic outcome is a false dichotomy and has been shown to produce the worst of both worlds: loss of life and prolonged economic pain."

Jacinda Ardern
Prime Minister of New Zealand
April 4, 2020

I. Backdrop

1. **The COVID-19 pandemic has infected more than 4 million people worldwide, with more than 280,000 reported deaths, and the challenge for governments now is when and how to safely reopen their economies.** AMRO's Covid Cycle estimates that the outbreak is moving to the later stages in many countries (Figure 1), including many in the ASEAN+3 region, and in heavily affected Europe.[2] China, the first country hit by the coronavirus and a key global supply chain node, is largely at the end of the Covid Cycle, although the risk of reappearance remains for it and all other countries as long as the virus is not fully eliminated worldwide or a vaccine is not yet available.

2. **Policymakers are planning their containment exit strategies, to gradually ease lockdown measures and restart economic activity.** Governments are taking tentative steps domestically, to resume production, reopen retail businesses and schools, and restart sport competitions. But even in Wuhan, "ground zero" for the pandemic, the eventual success in containing the virus—and consequent easing in restrictions more than 10 weeks later—have shown that any return to normalcy in daily life and economic recovery will take some time (Culver, 2020; Zhong and Wang, 2020).

3. **Importantly, the global economy is unlikely to fully recover until cross-border trade and travel are restored, but the "readiness" of each country to do so will differ significantly.** While a country might be reasonably assured of having stamped out the virus within its own borders, it will remain vulnerable to imported infections as long as the pandemic has not been similarly contained in other countries (Choo and others, forthcoming). This problem is particularly difficult to gauge for very large countries, where outbreaks might be concentrated in certain states and move like a wave from one to another over time, just as they have done across countries in various regions and across regions globally.

4. **More specifically, pandemic developments in major economies, such as the United States, will have crucial implications for the rest of the world.** As a major trading partner for the ASEAN+3 region and key driver of global growth, the US situation will be closely watched given the potential implications in two key areas:

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[1] Prepared by Marthe Hinojales, Anne Oeking, and Li Lian Ong (all Regional Surveillance team); reviewed and authorized by Hoe Ee Khor (Chief Economist). The views expressed in this note are the authors' and do not necessarily represent those of the AMRO or AMRO management.

[2] See Hinojales, Oeking, and Ong (2020).

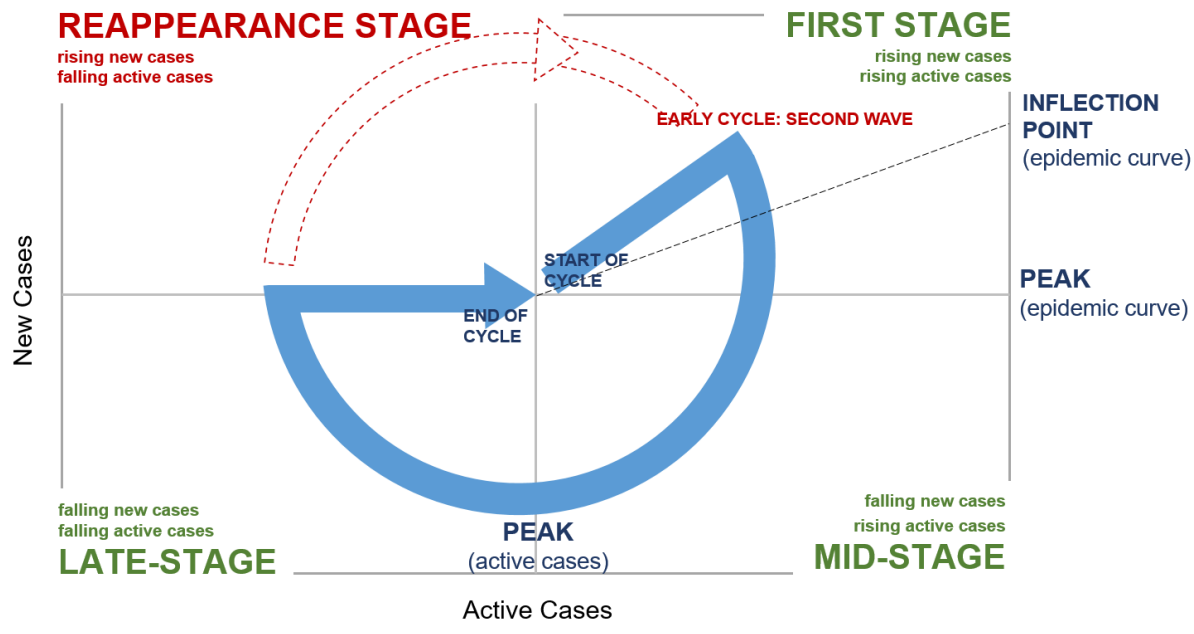
- A second wave of infections, causing further economic disruptions to the US economy, would have significant negative growth spillovers for the region, already battered and bloodied by developments so far.

- The eventual lifting of travel restrictions by regional economies will be complicated if the United States, one of the region's most important business counterparts, represents a threat to domestic health and safety.

5. **As countries begin to ease restrictions and demand gradually strengthens, the trade-off between reviving the economy and risking a second wave of infections will be one of the greatest challenges faced by policymakers.** This note compares the pandemic situation in individual US states as important considerations for the ASEAN+3 economies when designing the lifting of current curbs on cross-border travel and transportation and, possibly, preparing for another major hit to growth. Our analysis would also be applicable to other economic regions or countries where central oversight and enforcement may not be legally possible.

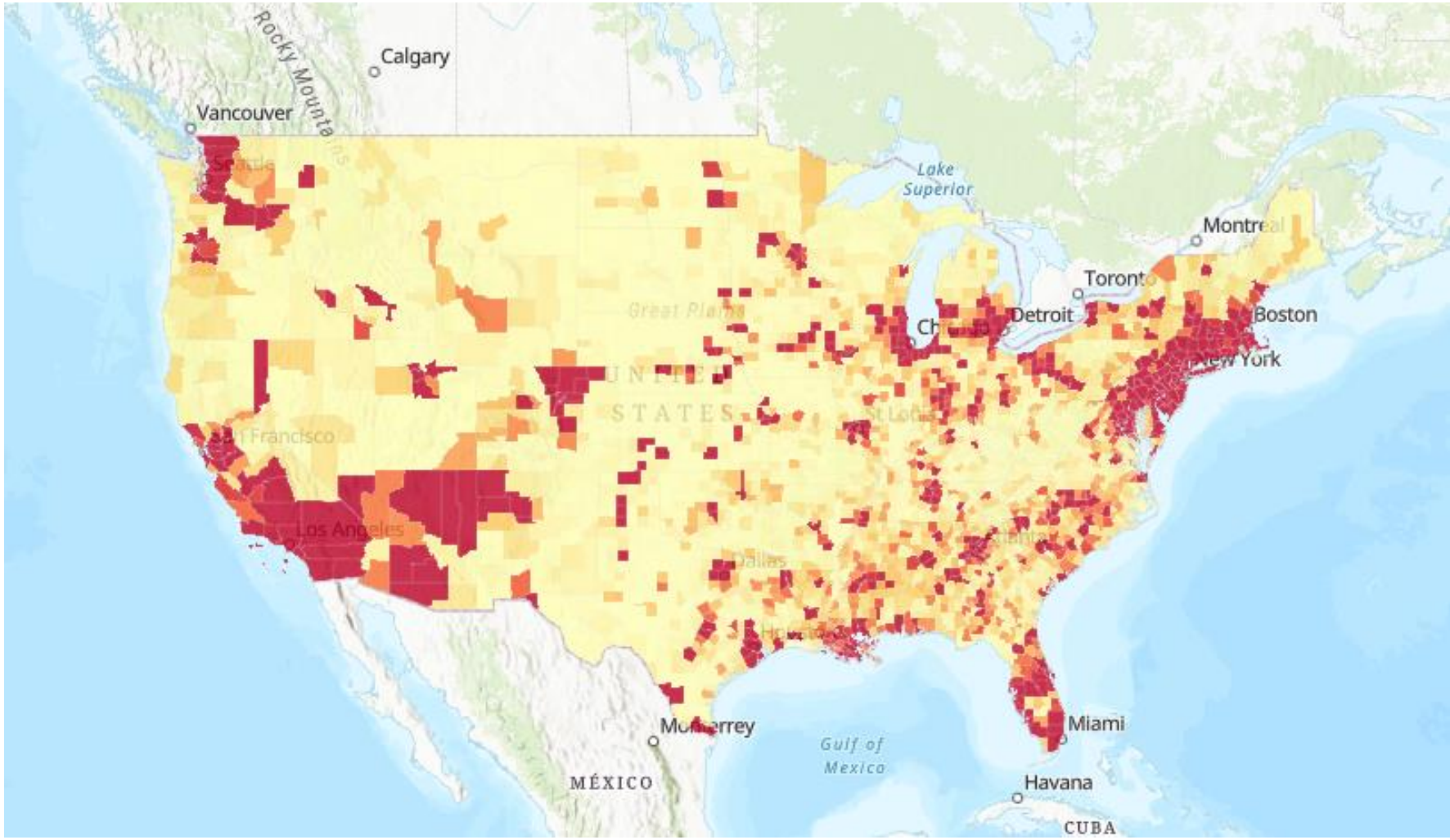
6. **The ability of a region or country to adequately contain the virus will only be as strong as the weakest link.** For example, the resumption of Schengen travel in the European Union, which allows unrestricted cross-border movements, could pose similar problems as the United States, given the differing strategies being adopted across European countries. In the United Kingdom, the British government has recommended some easing in restrictions, which appears to only apply to England given that the "devolved states" of Northern Ireland, Scotland, and Wales have mandated remaining in lockdown. Meanwhile, in Japan, the nationwide state of emergency declaration gives governors of the 47 prefectures stronger legal authority to call for restrictions but the nature of the containment measures are not centrally determined.

Figure 1. Schematic: Stages of the Covid Cycle
(Change in number of cases per 1 million population)



Source: Hinojales, Oeking and Ong (2020).

Figure 2. United States: Distribution of COVID-19 Cases by State, as of May 11, 2020



Source: Johns Hopkins Coronavirus Resource Center (https://coronavirus.jhu.edu/map.html).
Note: Data are updated once per day after 8 p.m. Eastern Standard Time. New York City borough deaths data do not include probable COVID-19 deaths, given that the information is not reported.

II. Pandemic and Policy in the United States

7. **The United States has been one of the hardest hit by the COVID-19 pandemic.** Infections are widespread throughout the country (Figure 2). It has recorded the highest number of confirmed cases, of more than 1.3 million infections, or about a third of world total; and more than 80,000 deaths, or more than a quarter of world total (Figure 3) translating to a case fatality rate of almost 6 percent. Although it is by no means the worst affected country when measured per million population, the number of infections has been disproportionately high. The size of the US population is only 4.3 percent of the world total, and it has one of the younger—that is, the proportion younger than 65 years old— and presumably, healthier, populations among advanced economies.

8. **The picture of the pandemic at the aggregate national level suggests that the worst may be over for the United States, but national infection statistics hide regional differences in terms of where each state is on the epidemic ("epi") curve.** The pandemic appears to have passed the peak of the epi curve (Figure 4), and is currently in the mid-stage of the Covid Cycle (Figure 5). However, the differences are very stark when assessed at the state level—they range from being in the first stage (e.g., Maine, South Dakota) to the mid-stage (e.g., Massachusetts, Tennessee) of the Covid Cycle, with many still at or around the epi curve peak.[3] No US state has moved comfortably into the late stage.

9. **The US federal system has resulted in disparate implementation of COVID-19 containment measures across states, with varied outcomes to date.** US law gives individual states and state governments the power to protect public health and hence, the authority to determine their own containment measures and reopening decisions. In recent weeks, numerous state governments came under immense pressure from voters to allow the resumption of economic activity despite not yet having brought the infections fully under control (Table 1).

10. **A second wave of the pandemic in the United States is likely if <u>all</u> US states do not adequately contain the virus.** With states reopening their economies, increasing the risk of cross-infections among the their populace and from inter-state travel, the US Centers for Disease Control (CDC) has warned of a second wave coinciding with the start of the cold and flu season in autumn (Moore and others, 2020).[4] Consequently, some experts expect the second wave of the pandemic to be far worse, placing extreme strain on an already overwhelmed healthcare system whose severe shortcomings have been laid bare by the initial wave.

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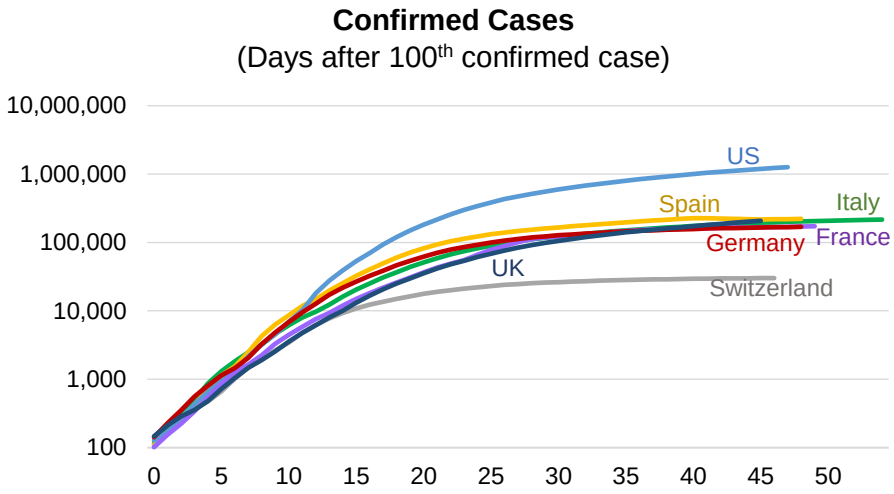
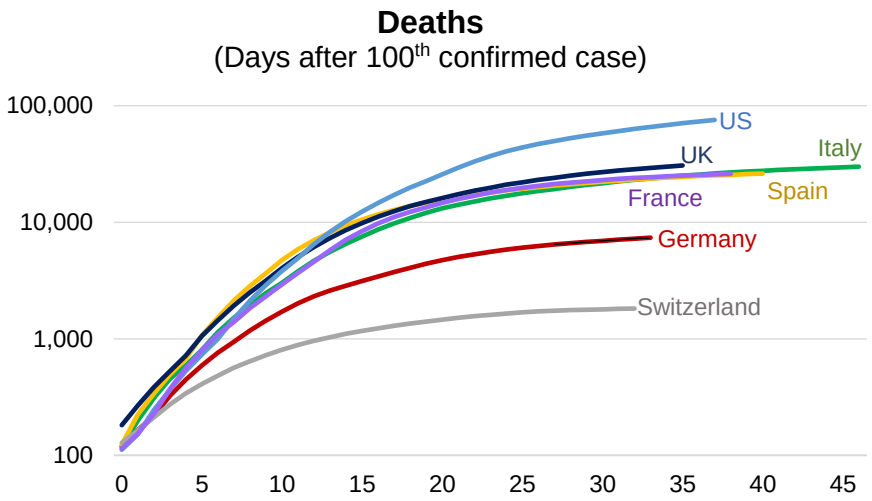
[3] See Appendix I for individual US state epidemic curves and Covid Cycles; states marked with an asterisk are those that have reopened. Recovery data are not widely available across individual states so the national recovery rate is applied to estimate the number of recoveries for each state, in order to derive the number of active cases.

[4] According to CDC estimates, there were at least 39 million cases of influenza in the United States and at least 24,000 deaths during the 2019–2020 season (https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm).

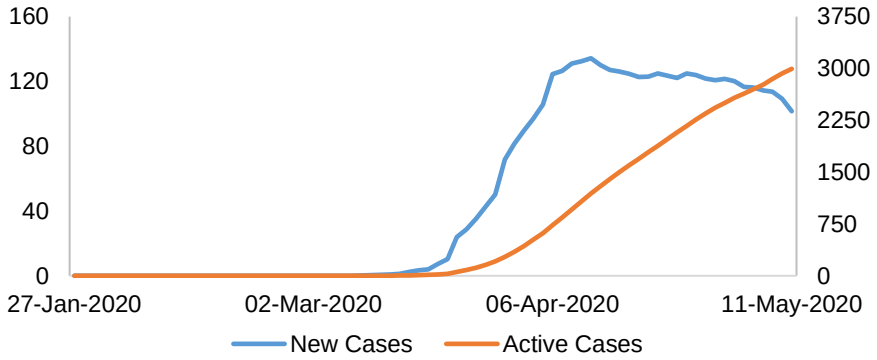
Figure 3. Selected Advanced Economies: COVID-19 Statistics, as of May 11, 2020





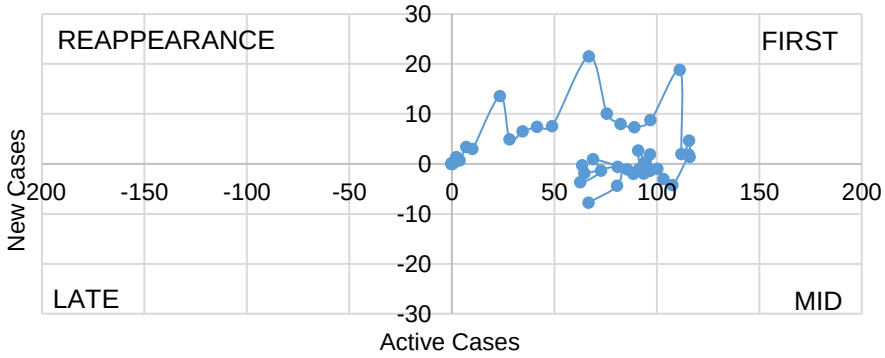
Sources: Johns Hopkins Coronavirus Resource Center via Haver Analytics; and authors' calculations.
Note: Numbers are calculated as rolling 7-day averages to smooth daily volatilities. Y-axis in log scale.

Figure 4. United States: Epidemic Curve and Active Cases, as of May 11, 2020
(January 27 = Day 1; Level per 1 million population)



Sources: Johns Hopkins Coronavirus Resource Center via Haver Analytics; and authors' calculations.
Note: Numbers are calculated as rolling 7-day averages to smooth daily volatilities. The first COVID-19 case was reported on January 21, 2020.

Figure 5. United States: Covid Cycle, as of May 11, 2020
(Change in number of persons per 1 million population)



Sources: Johns Hopkins Coronavirus Resource Center via Haver Analytics; and authors' calculations.

Table 1. United States: Stage of the Covid Cycle and Containment Measures by State, as of May 11, 2020

	State	Stage	Confirmed Cases	Containment Measures
	United States	Mid	1,345,386	Varies according to state.
1.	Alabama	First–mid	10,164	Partial reopening from April 31.
2.	Alaska	Mid	379	Partial reopening from April 24.
3.	Arizona	First–mid	11,383	Partial reopening. Stay-at-home order extended to May 15, with selected business reopening prior.
4.	Arkansas	First–mid	4,043	Partial reopening from May 4.
5.	California	First–mid	69,329	No set end date to stay-at-home order issued on March 19.
6.	Colorado	Mid	19,879	Partial reopening from April 27.
7.	Connecticut	First–mid	33,765	Mandatory shutdown extended to May 20.
8.	Delaware	First–mid	6,565	Stay-at-home order to remain until May 15.
9.	Florida	Mid	40,982	Partial reopening from May 4.
10.	Georgia	Mid	34,002	Partial reopening from April 24.
11.	Hawaii	First–mid	634	Partial reopening from May 7. Stay-at-home order extended to May 31.
12.	Idaho	Mid	2,260	Partial reopening from May 1.
13.	Illinois	Mid	79,007	Modified stay-at-home order from May 1.
14.	Indiana	Mid	24,627	Partial reopening from May 1.
15.	Iowa	Mid	12,373	Partial reopening from May 1, high-infection counties closed through May 15.
16.	Kansas	First–mid	7,159	Partial reopening from May 4.
17.	Kentucky	First–mid	6,677	Partial reopening from May 11.
18.	Louisiana	Mid	31,815	Stay-at-home order extended to May 15.
19.	Maine	First	1,462	Partial reopening of businesses in 12 of 16 counties from May 11. Stay-at-home order extended to May 31.
20.	Maryland	Mid	33,373	Stay-at-home order issued on March 31
21.	Massachusetts	Mid	78,462	Stay-at-home order extended until May 18.
22.	Michigan	Mid	47,552	State of emergency and disaster declarations extended to May 28; stay-at-home order extended to May 15; selected businesses can reopen.
23.	Minnesota	First	11,799	Partial reopening from April 27.
24.	Mississippi	First–mid	9,674	Partial reopening from May 11.
25.	Missouri	Mid	10,157	Partial reopening from May 4.
26.	Montana	First-mid	459	Partial reopening from April 26.
27.	Nebraska	Mid	8,407	Partial reopening. No stay-at-home order issued; relaxation of some restrictions from May 4.
28.	Nevada	Mid	6,152	Partial reopening from May 9. Stay-at-home order extended to mid-May.
29.	New Hampshire	Mid	3,160	Partial reopening from May 11. Stay-at-home order extended to end-May.
30.	New Jersey	Mid	140,206	No set end date to stay-at-home order issued on March 21.
31.	New Mexico	First–mid	5,069	Stay-at-home order extended to May 15.
32.	New York	Mid	337,055	"New York State on PAUSE" executive order from March 22; businesses to stay closed until May 15 at a minimum.
33.	North Carolina	First–mid	15,274	Partial reopening from May 9.
34.	North Dakota	First–mid	1,518	Partial reopening from May 1.
35.	Ohio	First–mid	24,777	Stay-at-home order to May 29.
36.	Oklahoma	Mid	4,613	Partial reopening from April 24.
37.	Oregon	First	3,286	Stay-at-home order in effect until ended by the governor.
38.	Pennsylvania	Mid	60,459	Partial reopening from May 8.
39.	Rhode Island	Mid	11,450	Partial reopening from May 8.
40.	South Carolina	First–mid	7,792	Partial reopening from April 20.
41.	South Dakota	First	3,614	Partial reopening from May 11.
42.	Tennessee	Mid	15,544	Partial reopening from April 27.
43.	Texas	First–mid	40,555	Partial reopening from May 1.
44.	Utah	First–mid	6,362	Partial reopening from May 1.
45.	Vermont	Mid	926	"Stay Home, Stay Safe" order extended to May 15.
46.	Virginia	First–mid	25,070	Stay-at-home order to June 10.
47.	Washington	Mid	17,122	Partial reopening from May 5. “Stay Home, Stay Healthy” order until May 31.
48.	West Virginia	First–mid	1,366	Partial reopening from May 4; new order encouraging stay at home.
49.	Wisconsin	Mid	10,418	Stay-at-home order extended to May 26.
50.	Wyoming	First–mid	669	Partial reopening from May 1.
	District of Columbia	Mid	6,389	Stay-at-home order extended to May 15, followed by evaluation.
	New York City	Mid	185,357	No set end date to stay-at-home order.

Sources: New York Times; other media; and authors' compilations.

III. Implications for the ASEAN+3 Region

11. **A prolonged pandemic in the United States would pose significant downside risks to ASEAN+3 growth**. AMRO expects the region to grow a meager 0.2 percent this year, followed by a sharp recovery in 2021, to 6.2 percent, in part due to the low base effect. These forecasts project that US growth would contract at around 3.6 percent in 2020 before rebounding next year.[5] Recent data, showing massive job losses, record-low market sentiment, alongside a high corporate debt burden, suggest that a prolonged pandemic with possibly further or extended shutdowns could push the United States toward a more severe and prolonged recession (Edwards and Wenger, 2020), with further negative spillovers for the region and the rest of the world. The ASEAN+3 region's trade and investment linkages with the United States mean that any protracted downturn in the latter would further jeopardize the former's growth.

12. **Relatedly, any lack of closure surrounding the pandemic situation in the United States would cause complications for international travel and tourism.** With the United States as both a major exporter and importer of travel services, continuing risk of reappearance of the outbreak would have global ripple effects in two key areas:

- ***Domestic health and safety.*** Economies, including those in the ASEAN+3 region, would have to remain cautious against fully reopening to travelers from the United States, as long as there is no vaccine against COVID-19. It would be impossible to restrict travelers by their US state of residence, given that all Americans travel with one national passport. Possible options may be to ban all travel to and from the United States until all states are assuredly no longer at risk, which could take some time; test and quarantine all incoming travelers from the United States, which may be unrealistic for under-resourced countries; or, reopen travel to all and hope to be able to contain visiting and returning infections.

- ***The services sector.*** Any continuing ban on US travelers would have important implications for economies that rely on the income that they generate. The United States is the ASEAN+3's top non-regional source of incoming visitor arrivals (Table 2). Thus, the region has also gained from US-associated visitor spend, which is estimated to have been the second highest next to China (World Tourism Organization, 2018). In 2018, an estimated 18.4 percent of US business travel were bound for China, Japan, Korea, and Singapore (US National Travel and Tourism Office, 2019). Even without a ban, around 40 percent of US citizens have indicated that they are unlikely to go on vacation to hotels and resorts without a COVID-19 vaccine (Bonjean and others, 2020).

13. **Hence, the pandemic situation in the United States poses important challenges for regional policymakers.** With the fiscal purse already under severe strain in many ASEAN+3 countries, from having to support their respective economies through the current pandemic, they may have to prepare for the possibility that further spending may be necessary if a prolonged or even a second—and potentially more economically devastating—wave of infections were to occur. The impact could come from another shutdown of the US economy, with implications for global demand, trade and tourism; from

[5] Assumptions refer to Bloomberg Consensus estimates submitted for the United States, from April 10–17, 2020, and accessed by AMRO staff on April 20, 2020.

another shutdown of the domestic economy if travel policy results in local infections; or worst—another round of global infections and widespread shutdown again.

Table 2. ASEAN+3: Top Twenty Sources of Inbound Arrivals, 2019

Source of Inbound Arrivals	Volume of Travelers (Millions of people)	Share of Total ASEAN+3 Arrivals (Percent)
China	95.0	34.4
Korea	20.5	7.4
Singapore	15.3	5.6
Japan	12.2	4.4
Malaysia	11.7	4.2
United States	10.8	3.9
Taiwan Province of China	9.3	3.4
Thailand	7.4	2.7
Indonesia	6.8	2.5
India	5.1	1.9
Russia	4.9	1.8
The Philippines	4.5	1.6
Vietnam	4.3	1.6
Australia	4.1	1.5
Lao PDR	2.2	0.8
United Kingdom	2.0	0.7
Mongolia	1.5	0.5
Canada	1.3	0.5
Brunei	1.2	0.4
France	0.5	0.2

Sources: National authorities; and authors' calculations.
Note: China data include Hong Kong where the breakdown is available. Data as of 2018 for Brunei, China, Lao PDR, and Myanmar. Collectively, the economies above account for around 80 percent of total regional arrivals.

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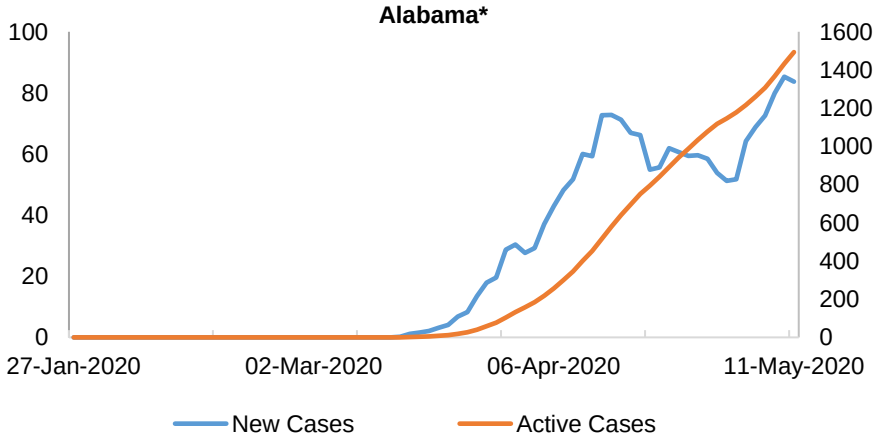
Appendix I. United States: Epidemic Curves and Covid Cycles

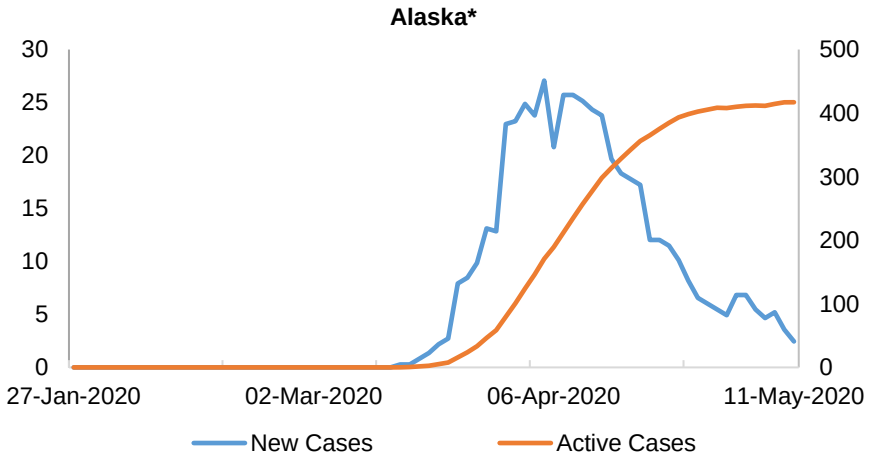
Appendix Figure 1. US States: Epidemic Curve and Covid Cycle, as of May 11, 2020

(Level per 1 million population; change in number of persons per 1 million population)

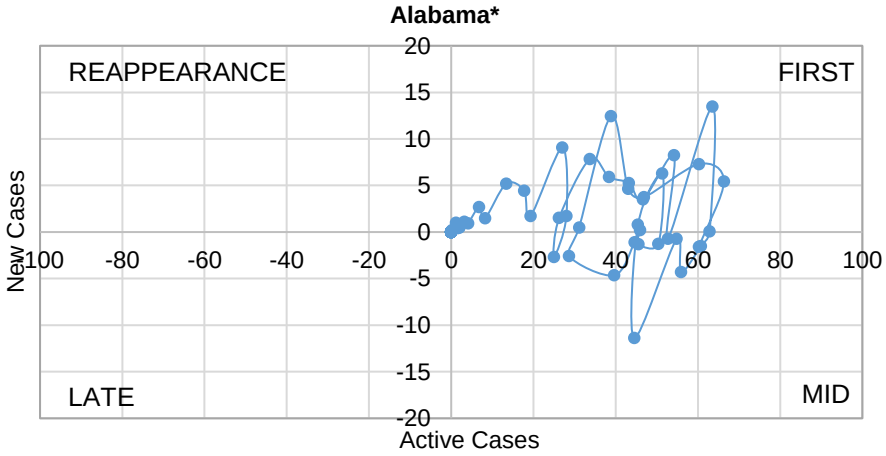
Note: Asterisks denote states that have started reopening.

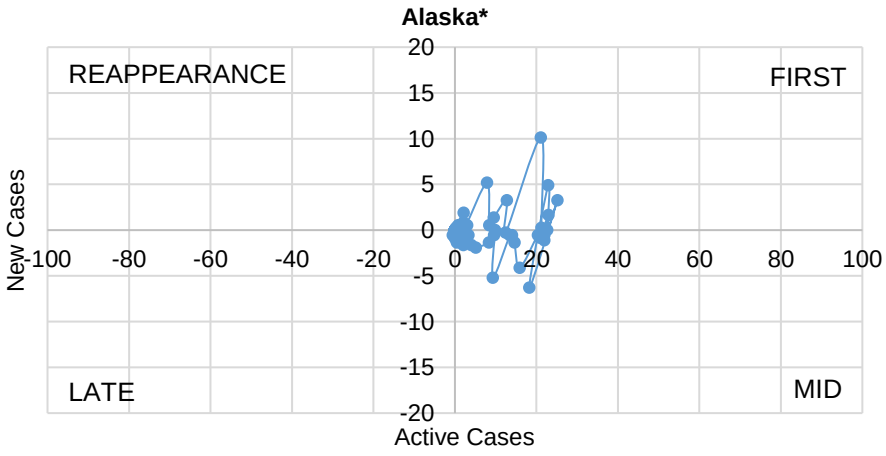
Epidemic Curve and Active Cases



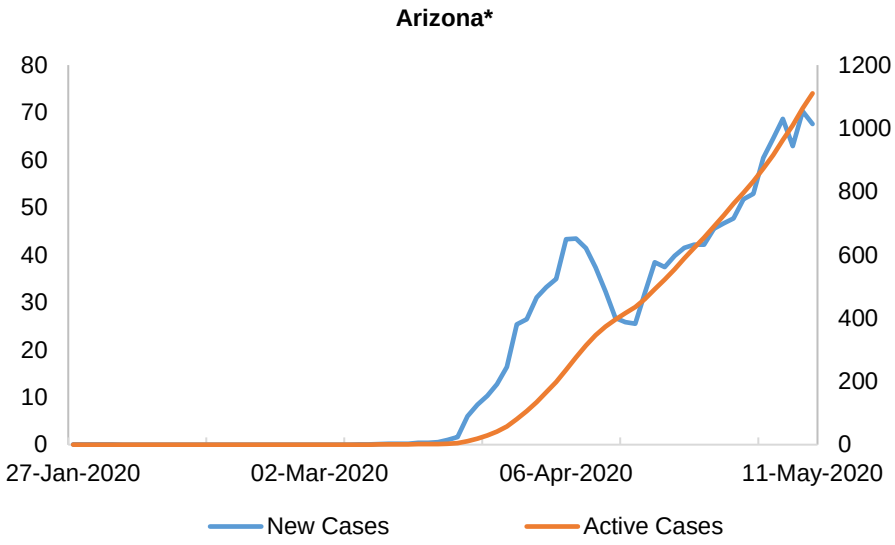


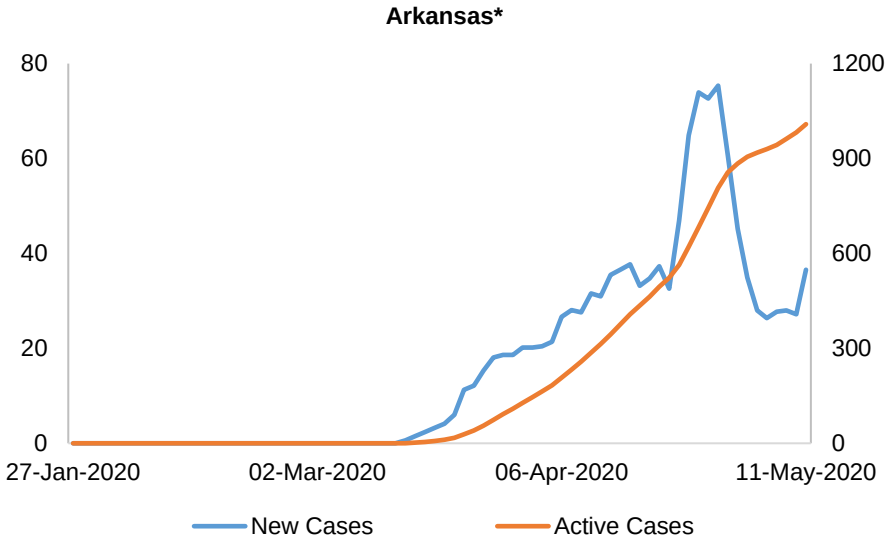
Covid Cycle



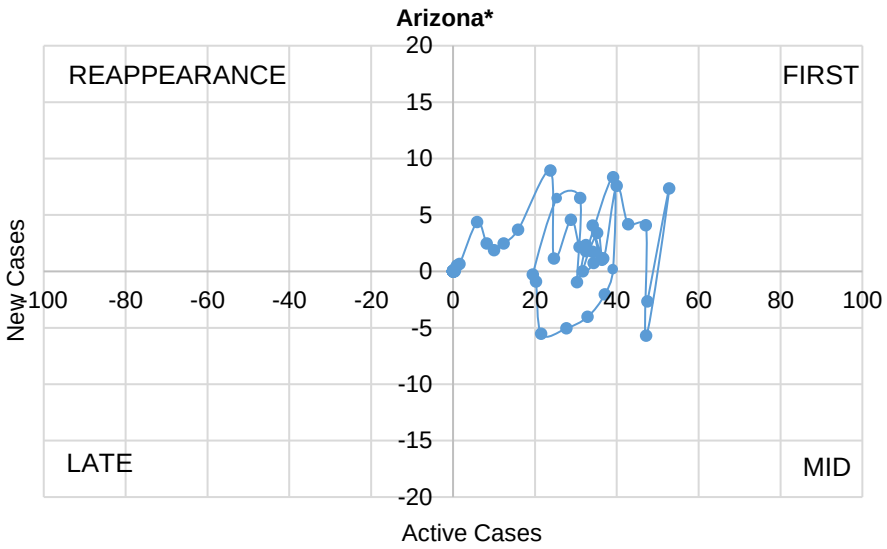


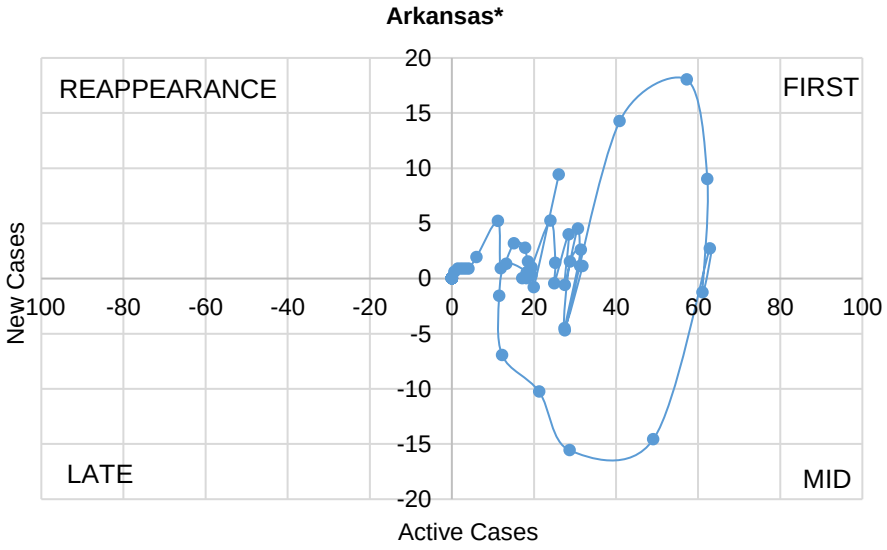
Epidemic Curve and Active Cases



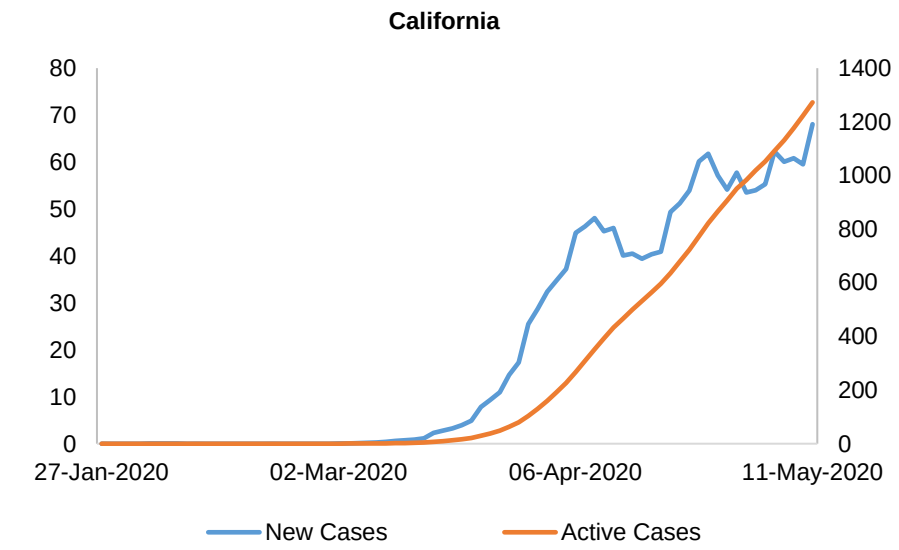


Covid Cycle

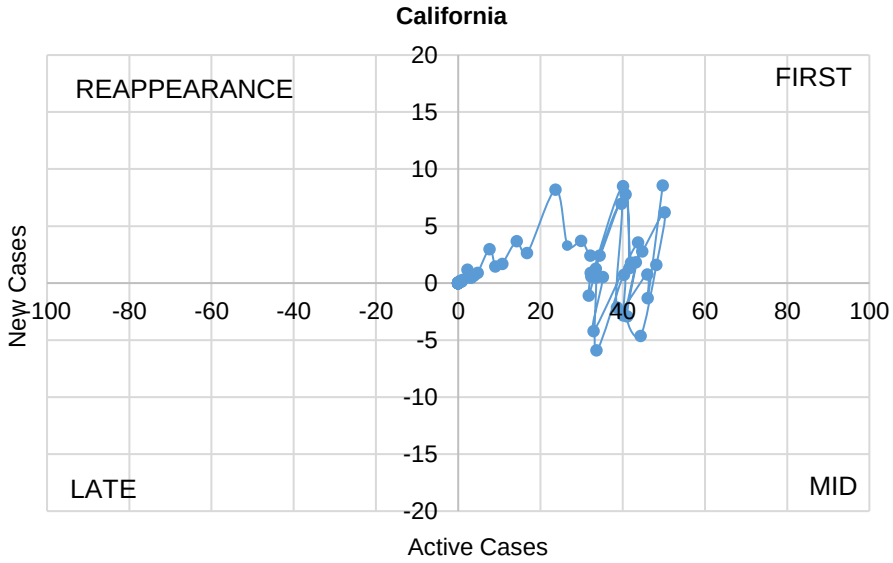


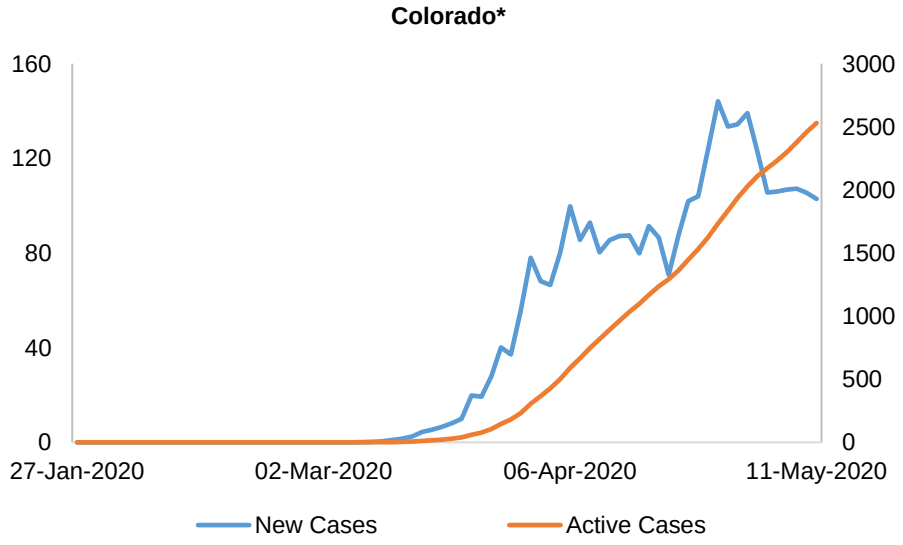


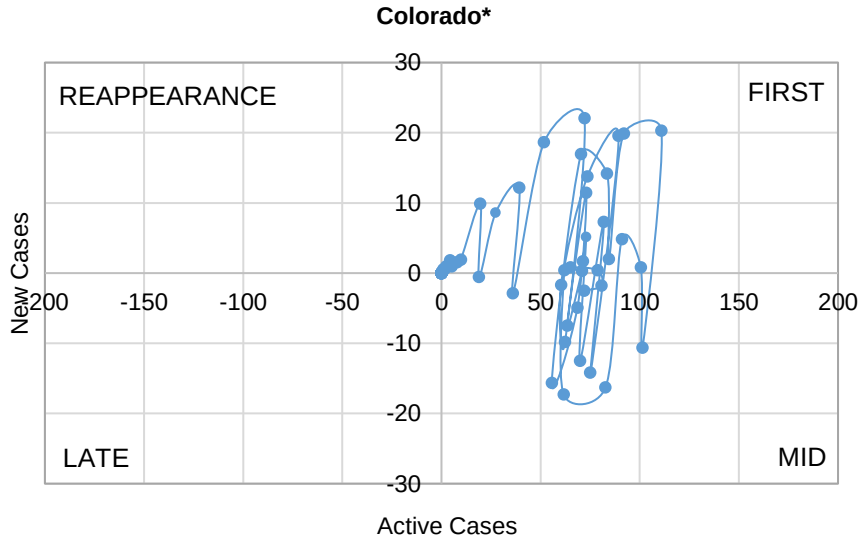
Epidemic Curve and Active Cases



Covid Cycle

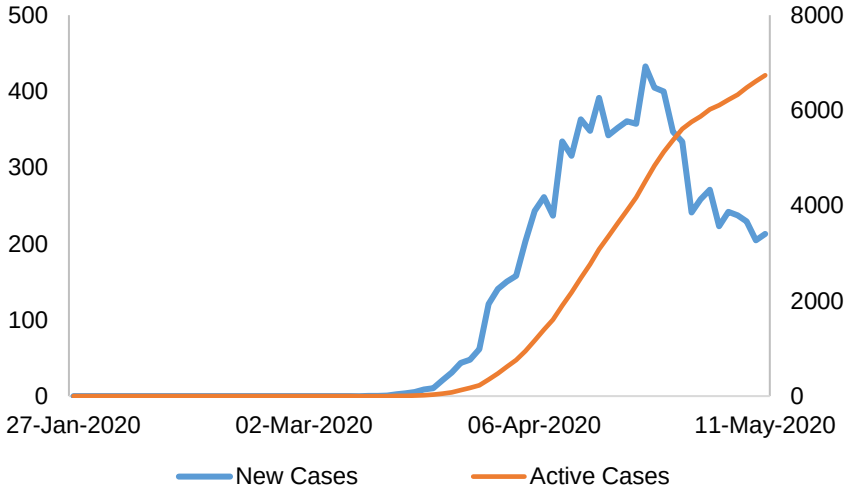




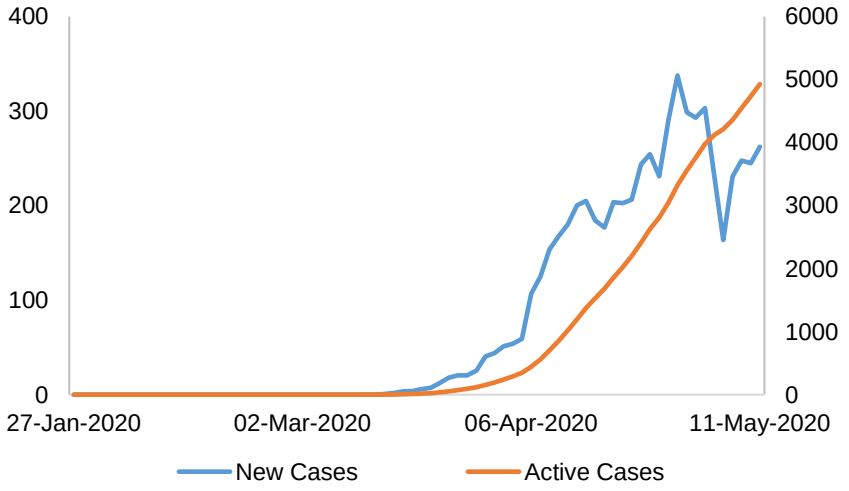


Epidemic Curve and Active Cases

Connecticut

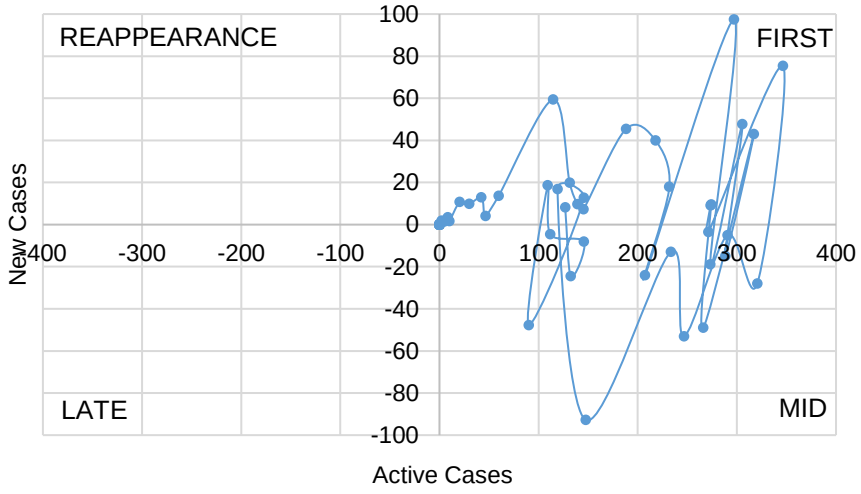


Delaware

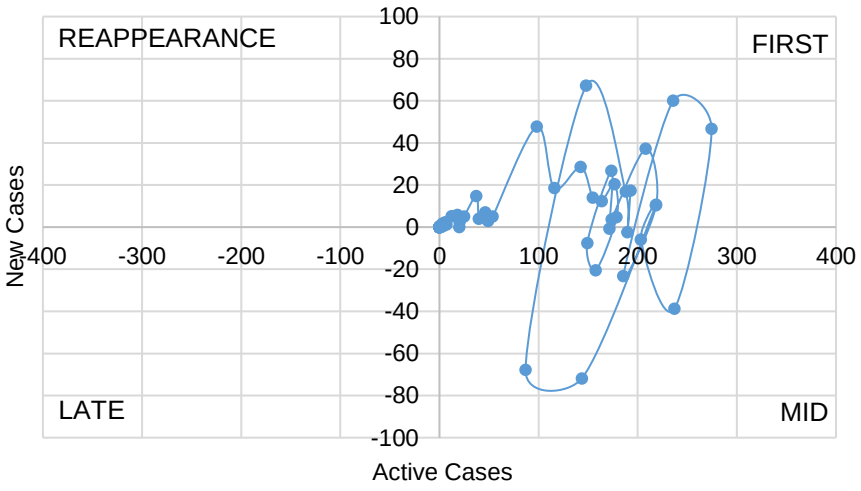


Covid Cycle

Connecticut

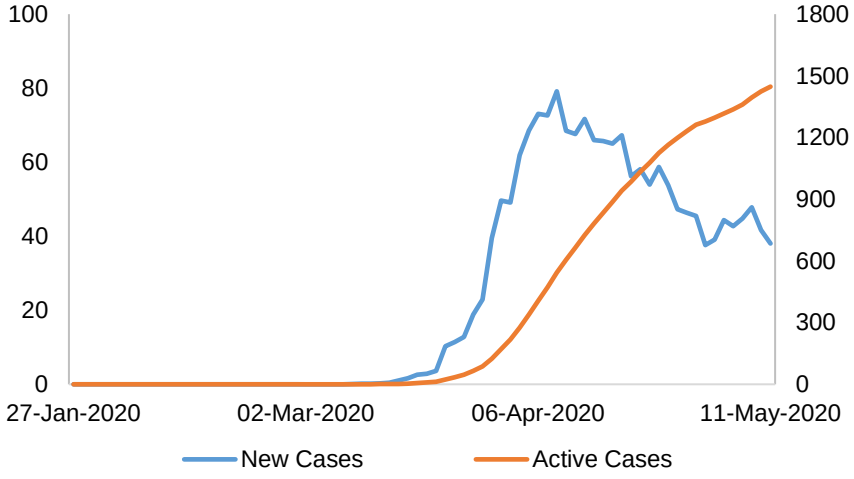


Delaware

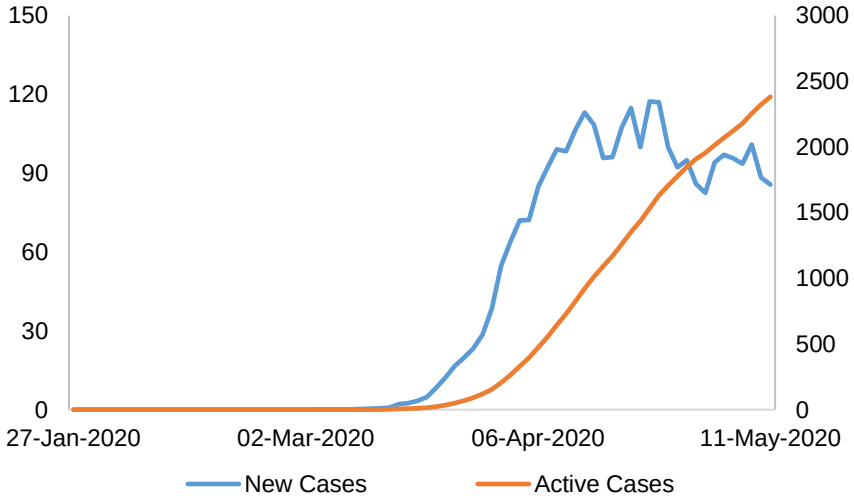


Epidemic Curve and Active Cases

Florida*

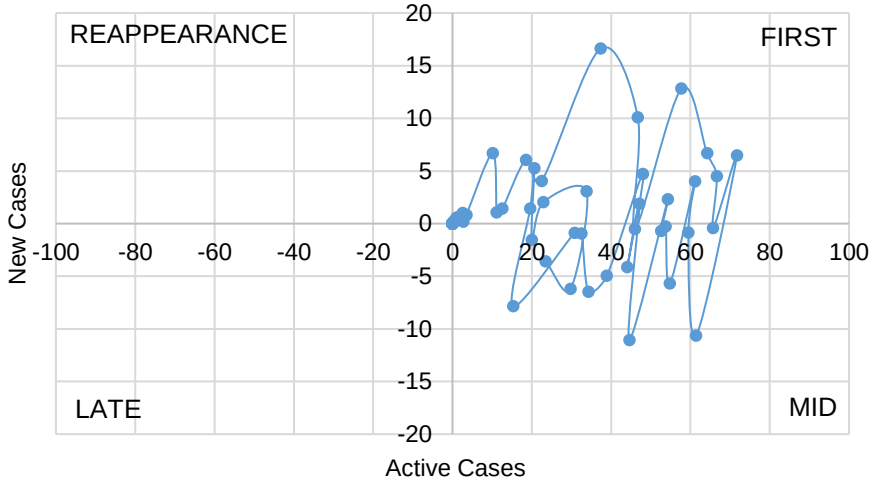


Georgia*



Covid Cycle

Florida*



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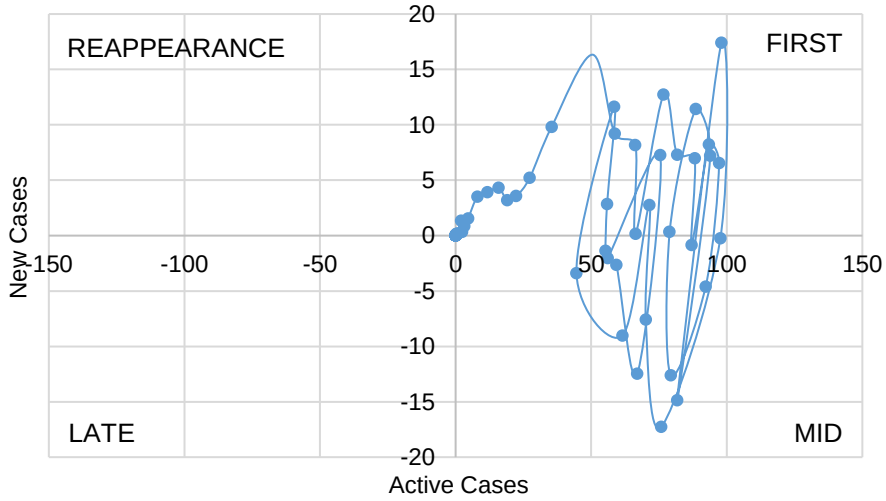
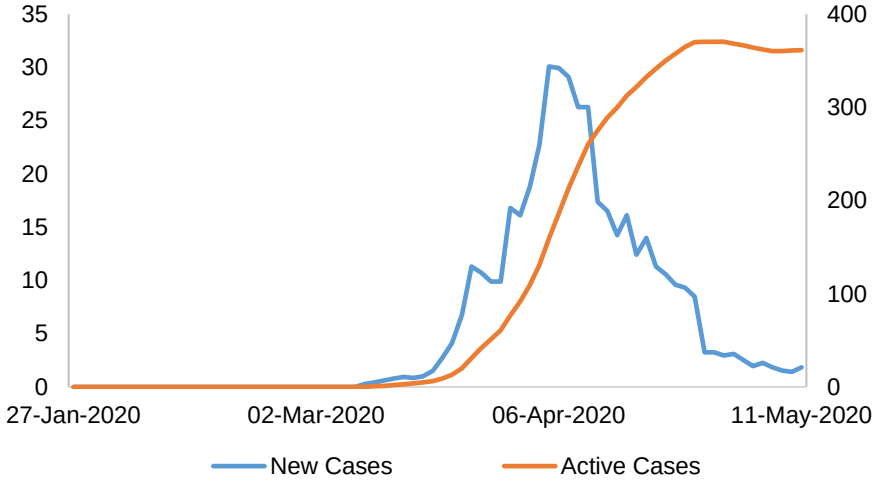
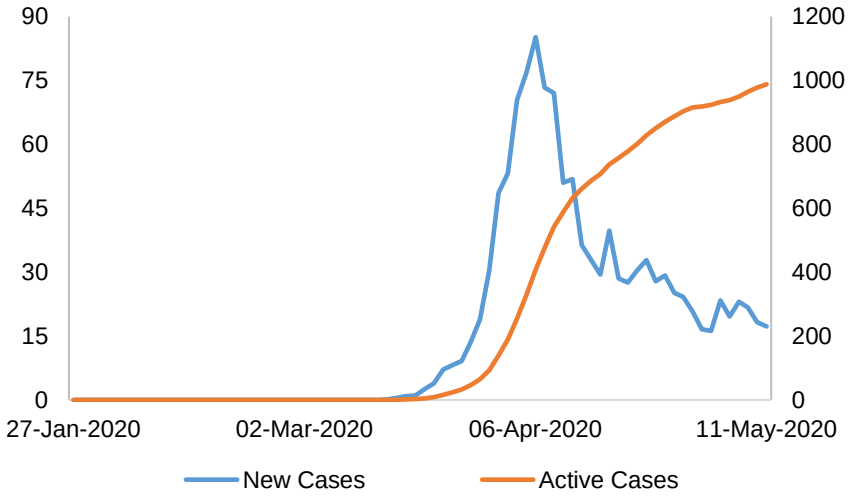


Epidemic Curve and Active Cases

Hawaii*

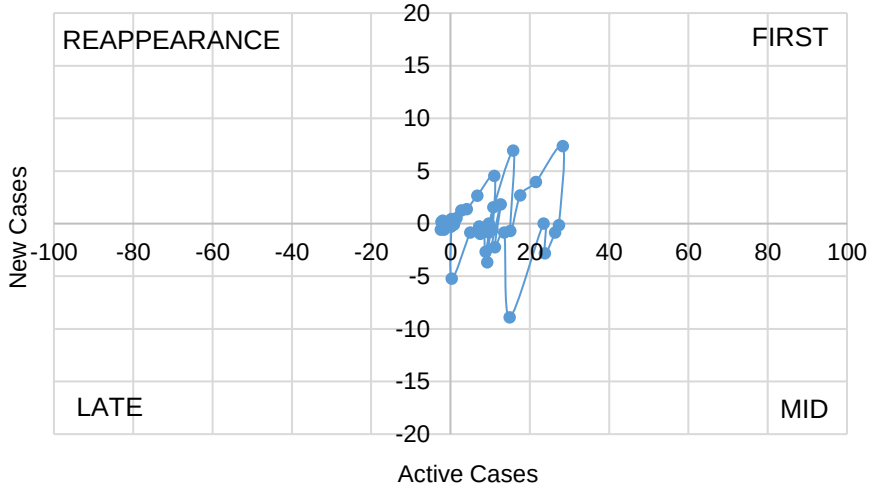


Idaho*

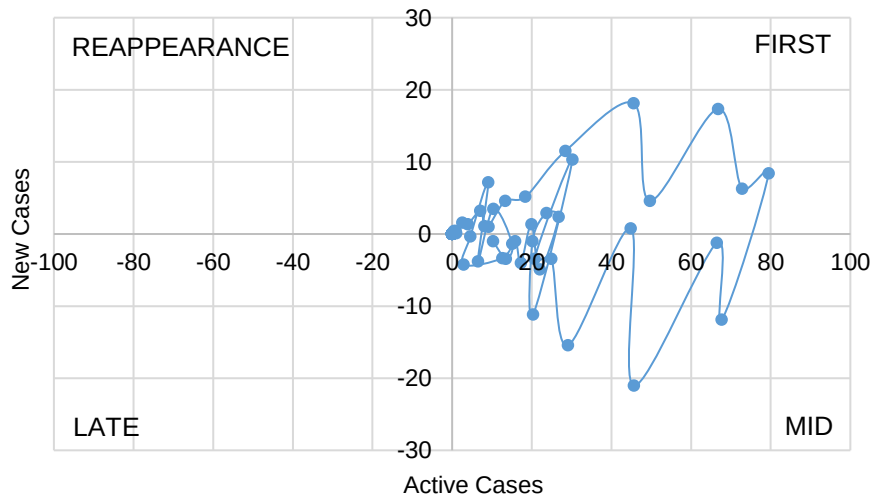


Covid Cycle

Hawaii*

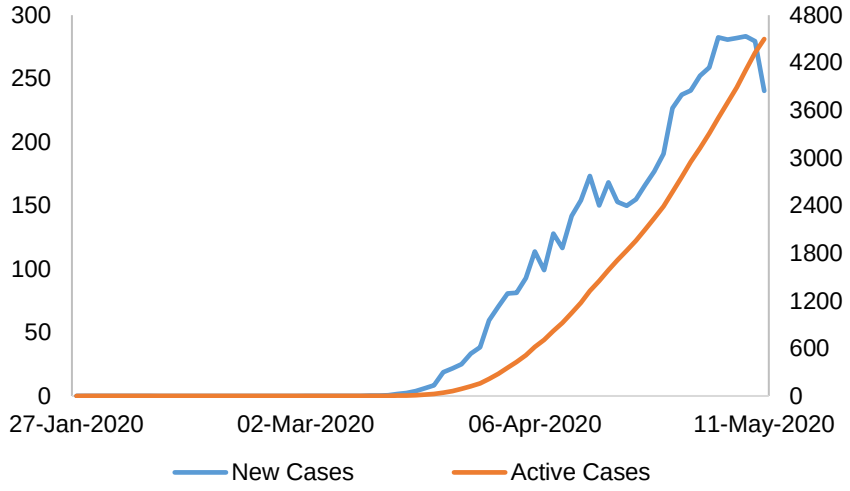


Idaho*

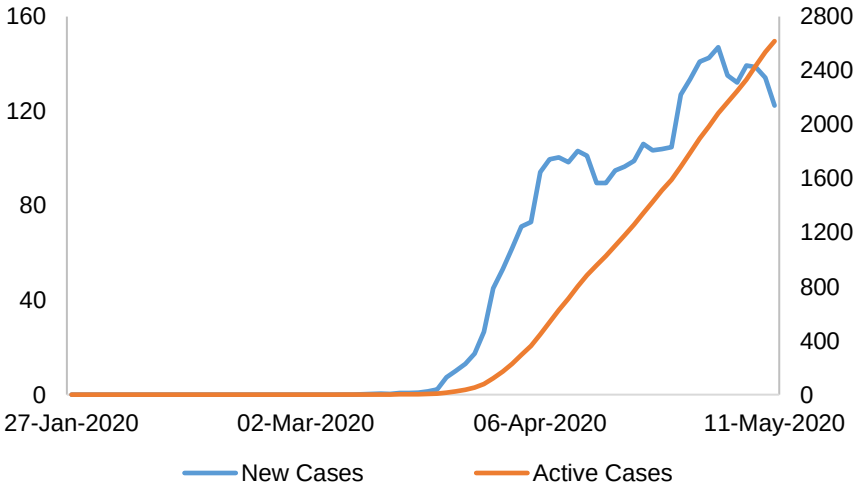


Epidemic Curve and Active Cases

Illinois

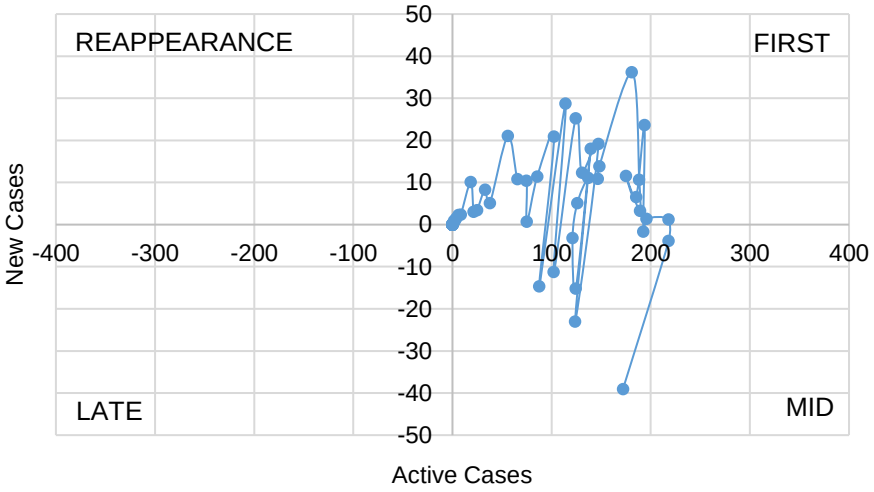


Indiana*



Covid Cycle

Illinois



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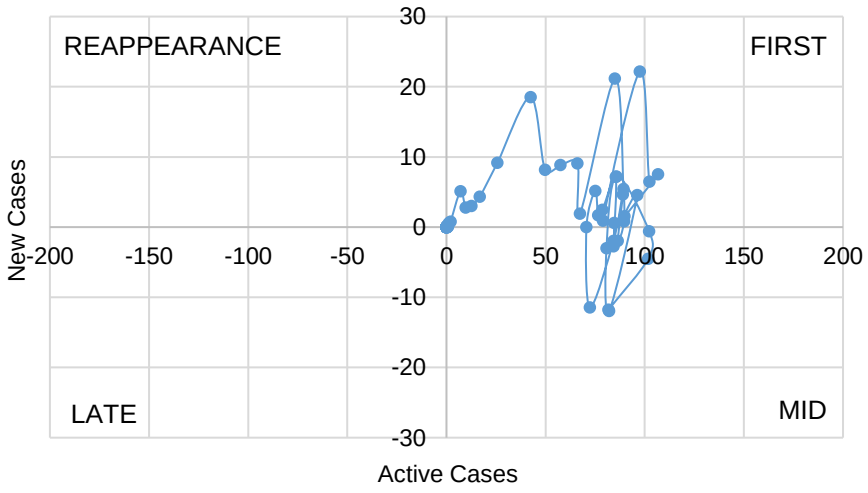
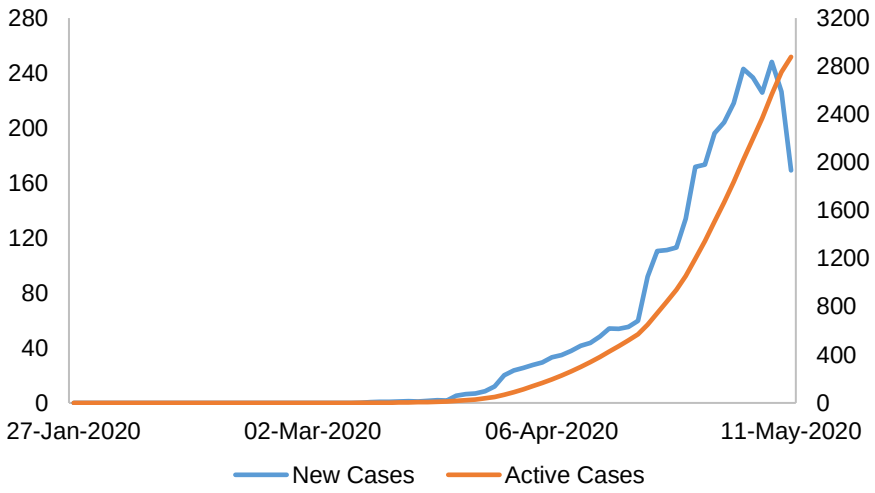
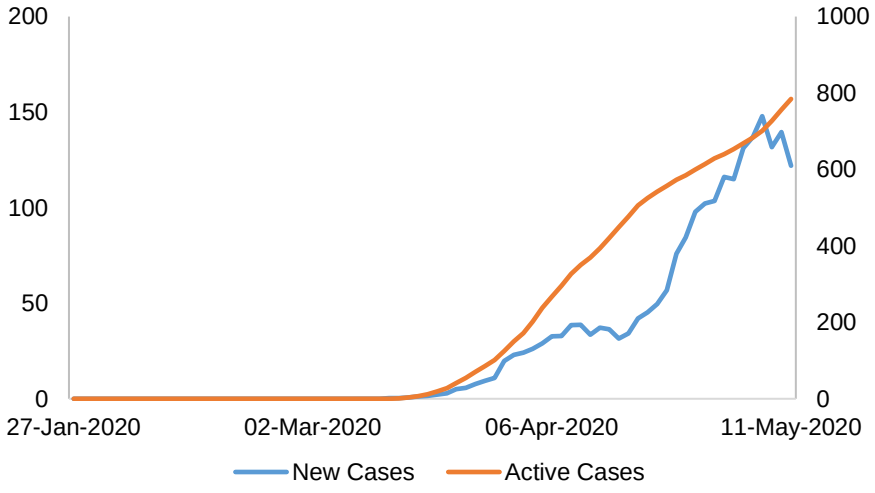


Epidemic Curve and Active Cases

Iowa*

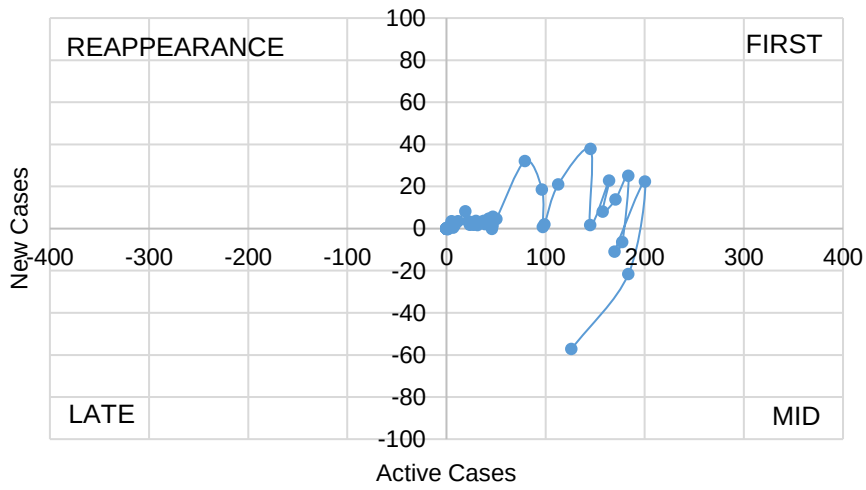


Kansas*



Covid Cycle

Iowa*



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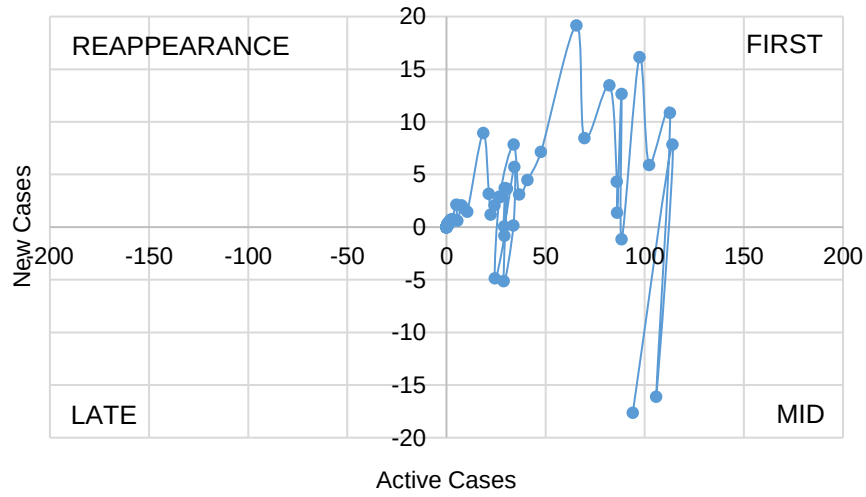
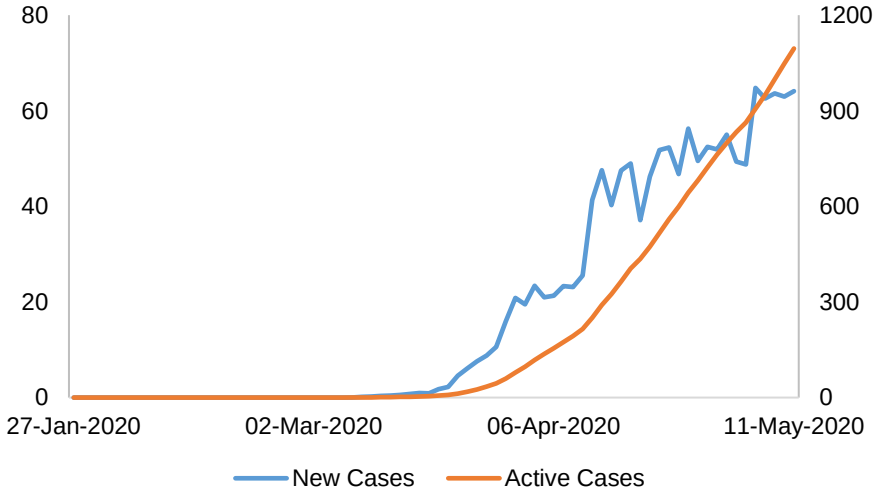
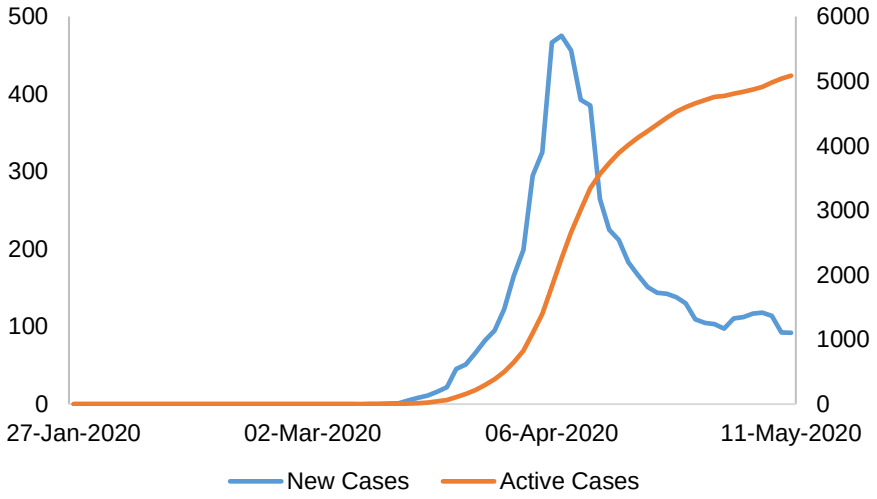


Epidemic Curve and Active Cases

Kentucky*

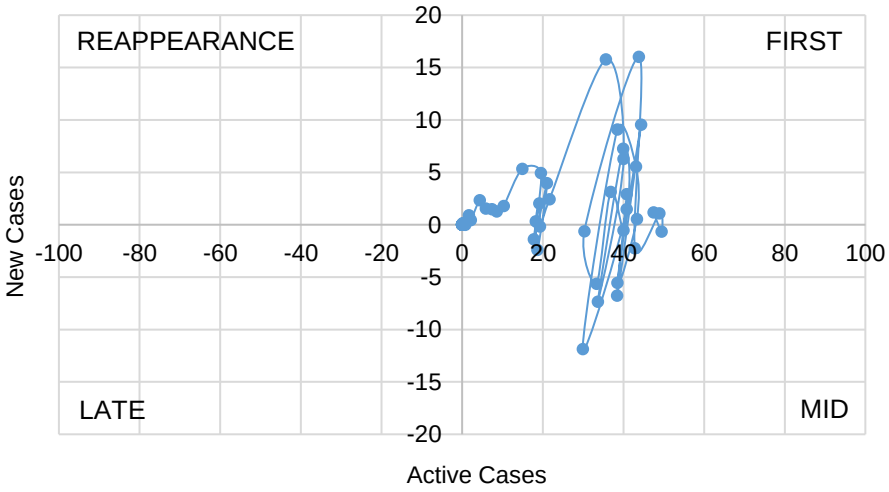


Louisiana

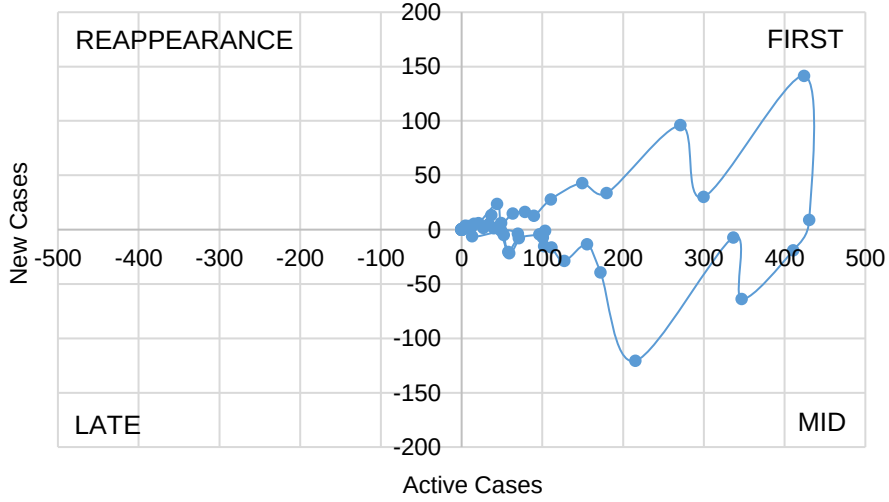


Covid Cycle

Kentucky*

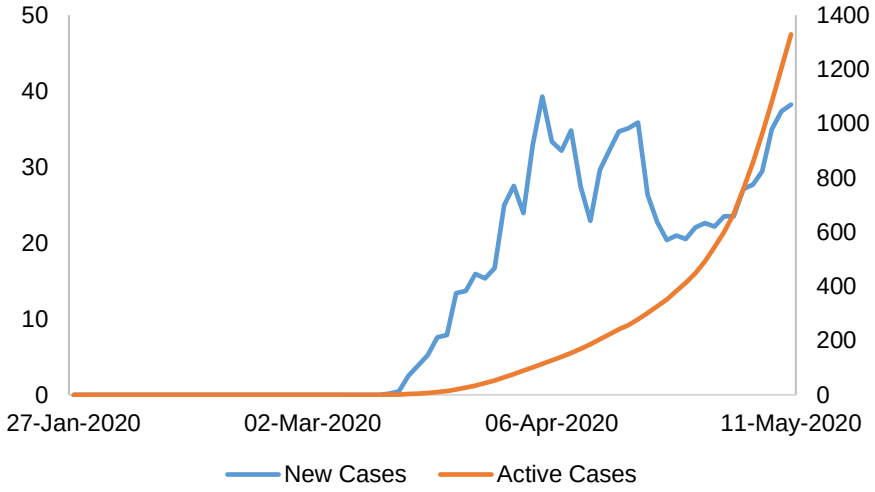


Louisiana

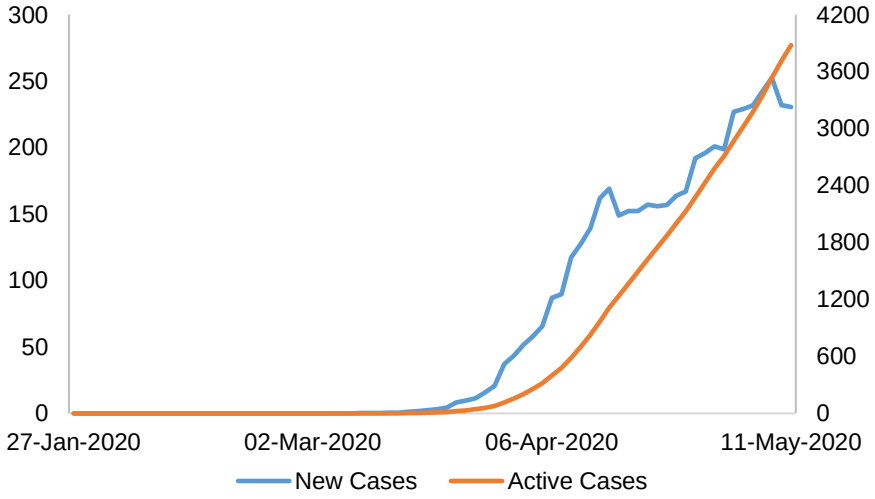


Epidemic Curve and Active Cases

Maine*

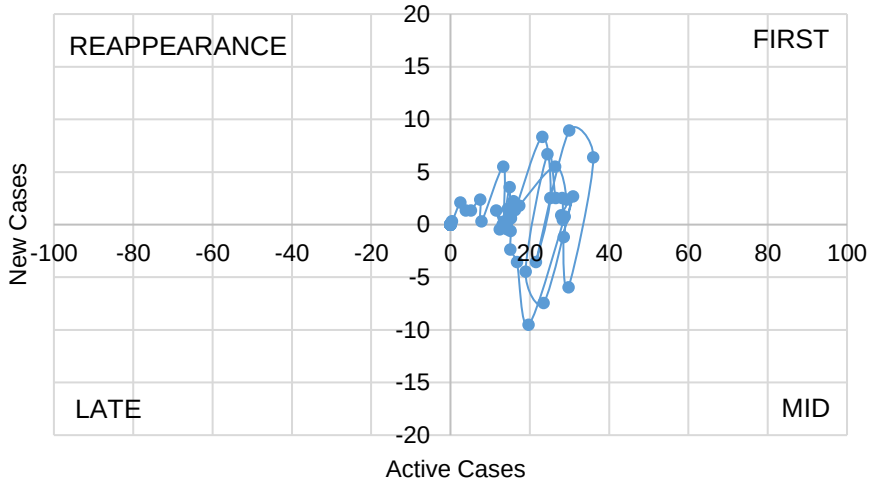


Maryland

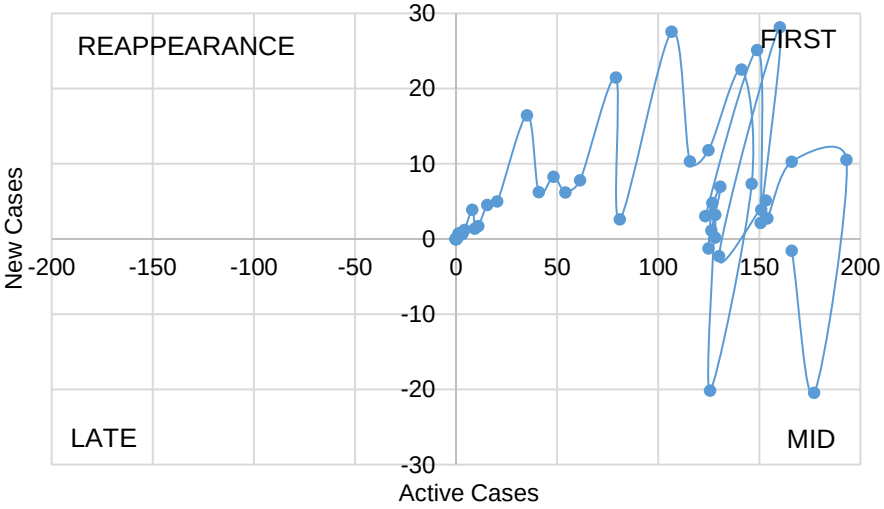


Covid Cycle

Maine*

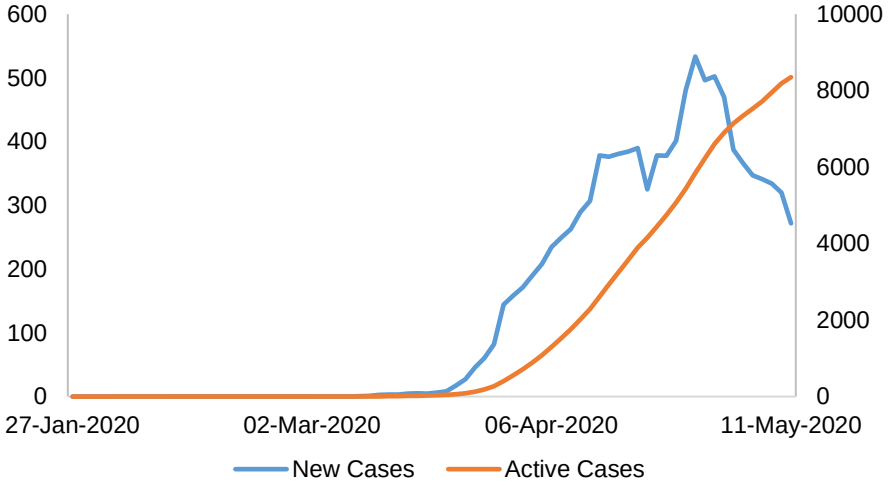


Maryland

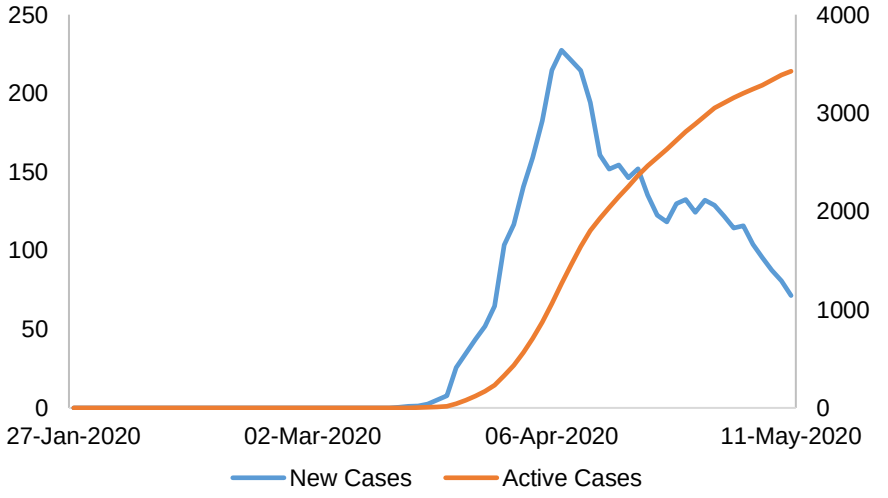


Epidemic Curve and Active Cases

Massachusetts

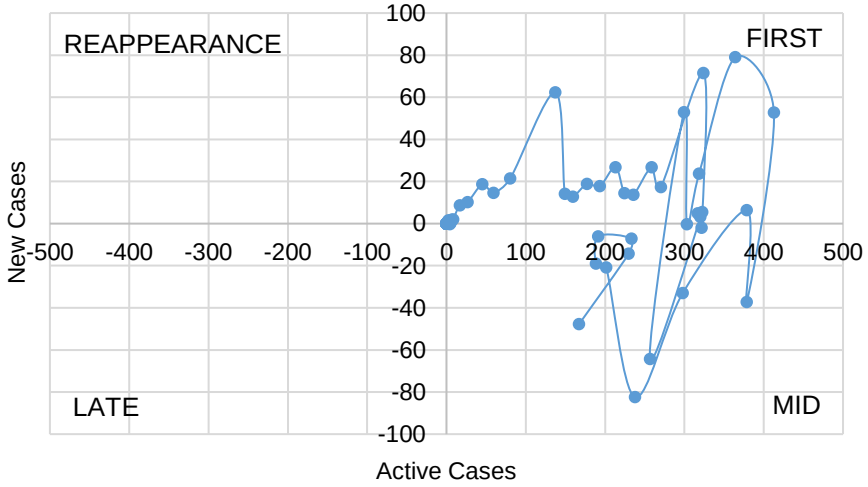


Michigan*

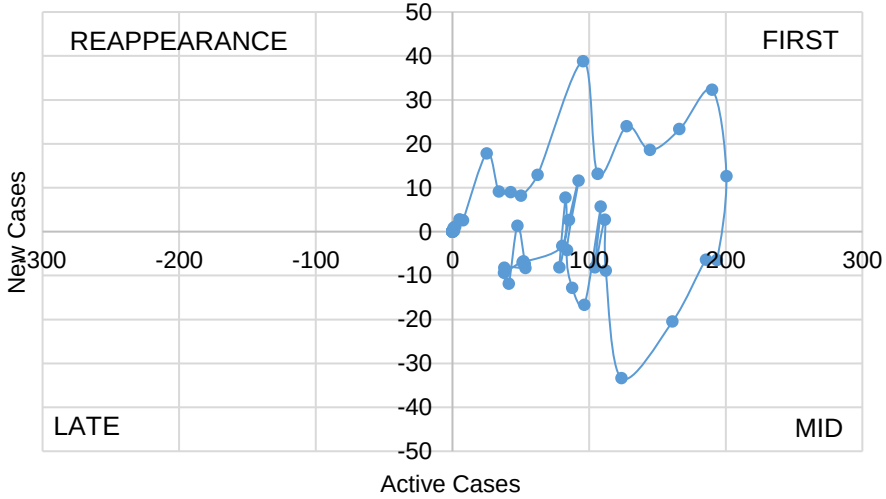


Covid Cycle

Massachusetts

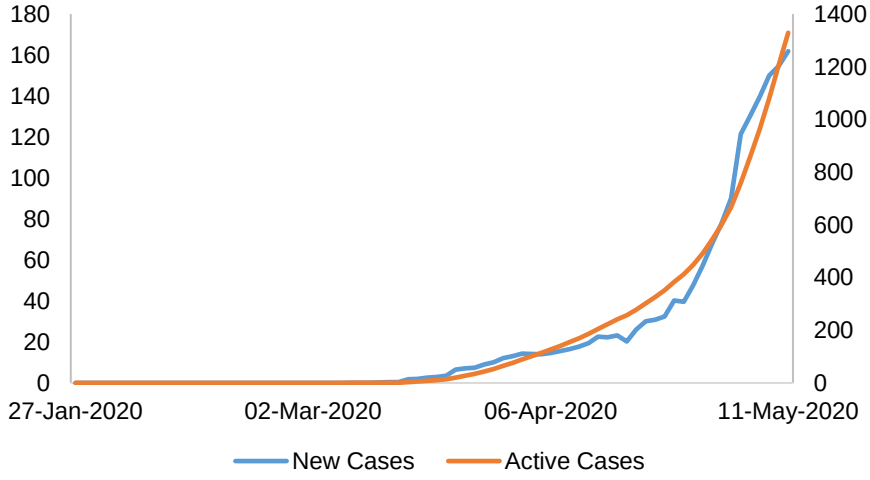


Michigan*

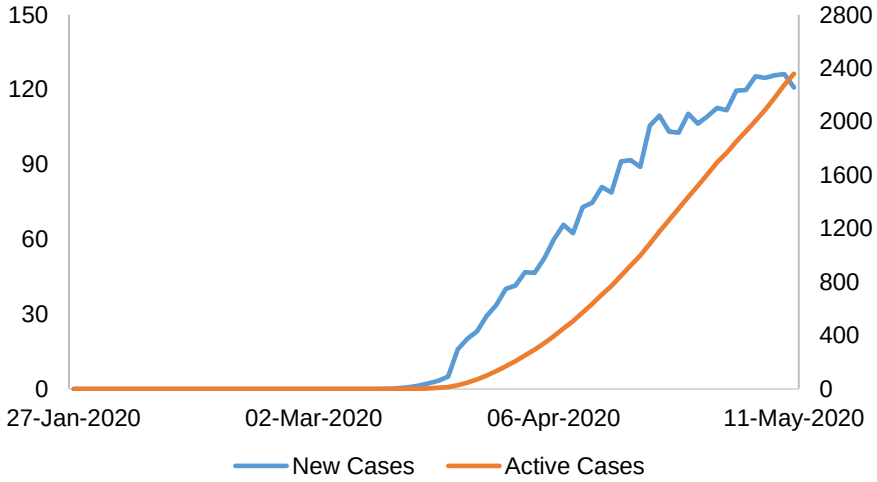


Epidemic Curve and Active Cases

Minnesota*

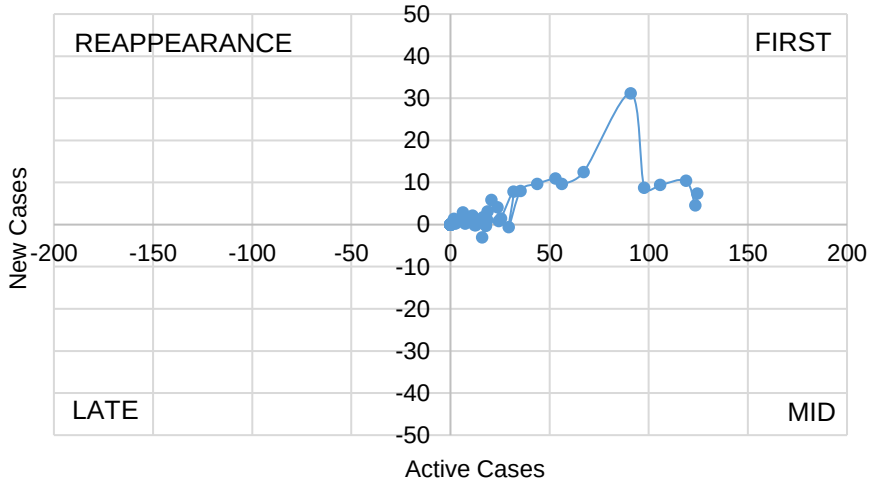


Mississippi*

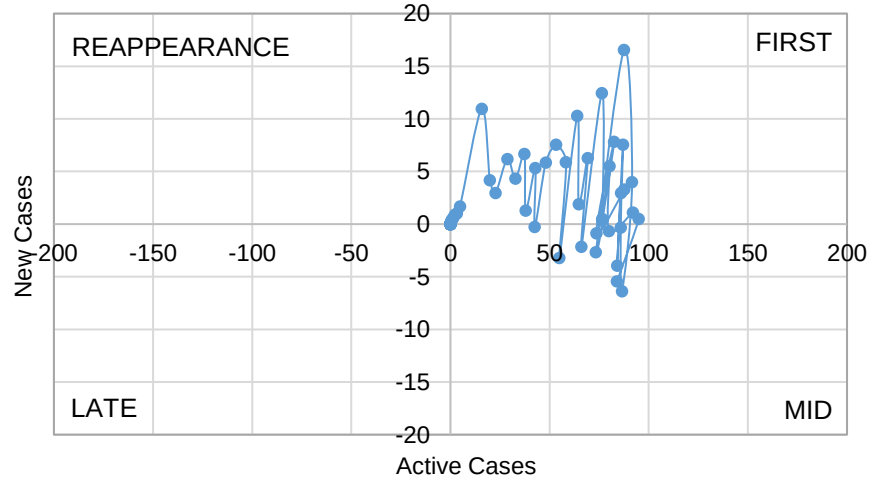


Covid Cycle

Minnesota*

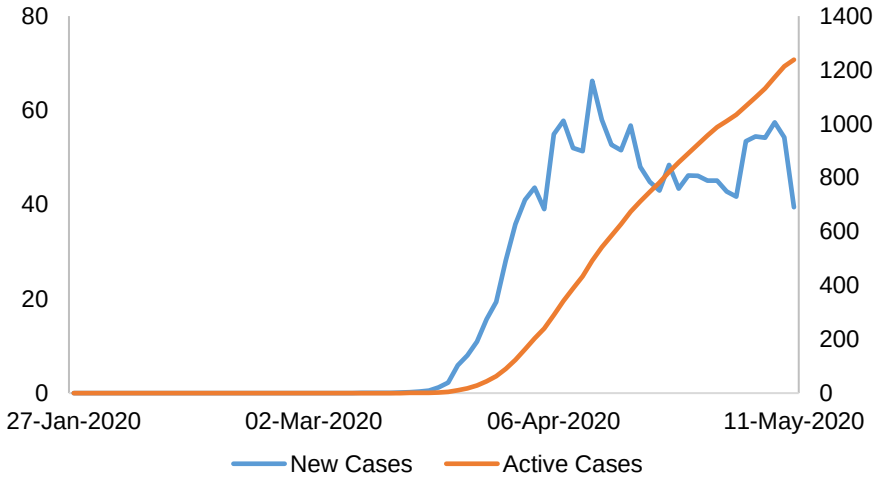


Mississippi*

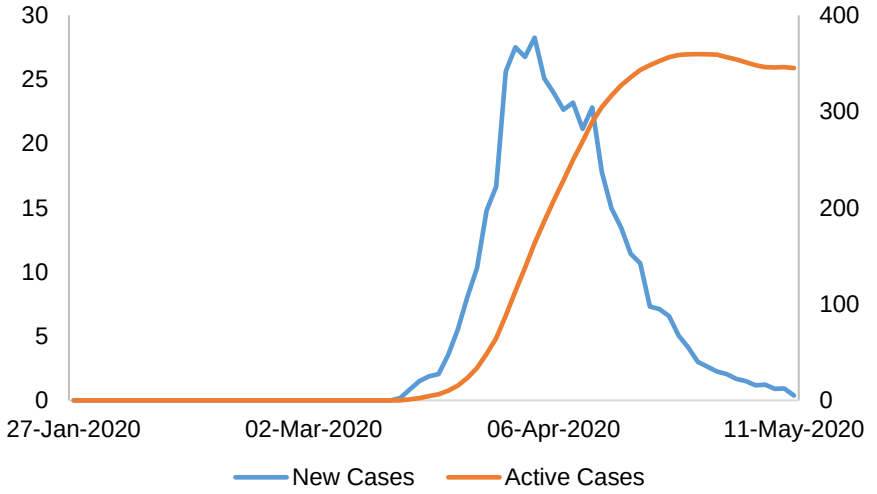


Epidemic Curve and Active Cases

Missouri*

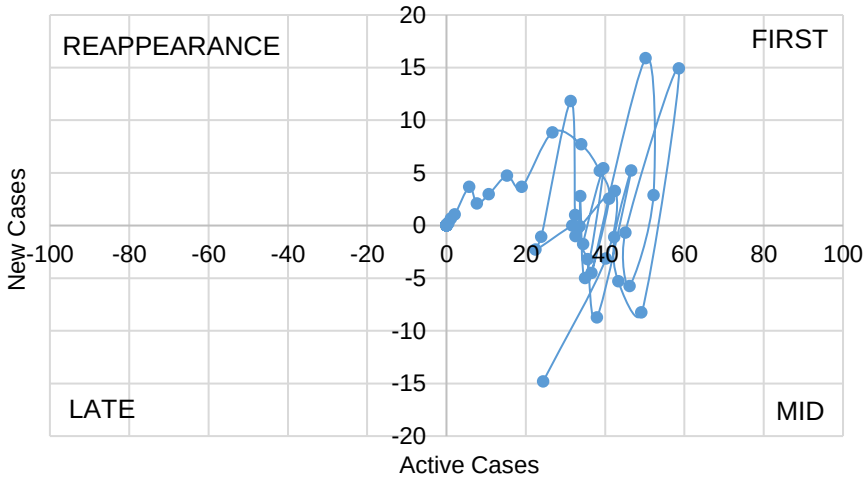


Montana*

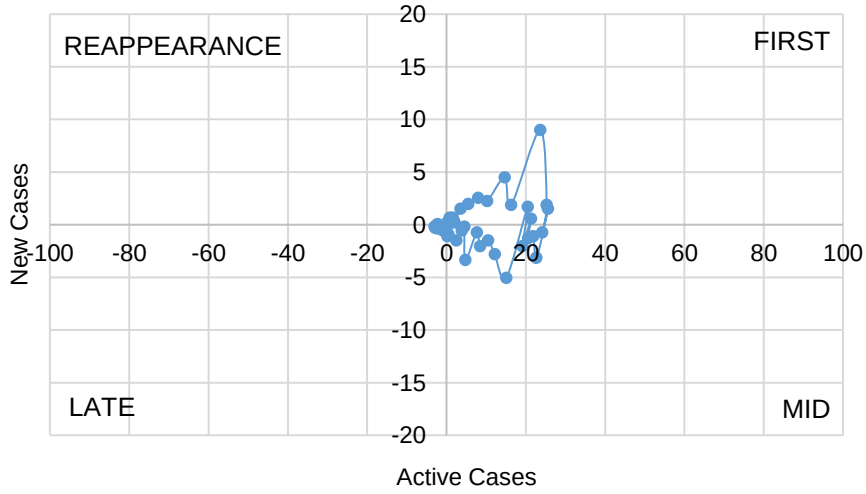


Covid Cycle

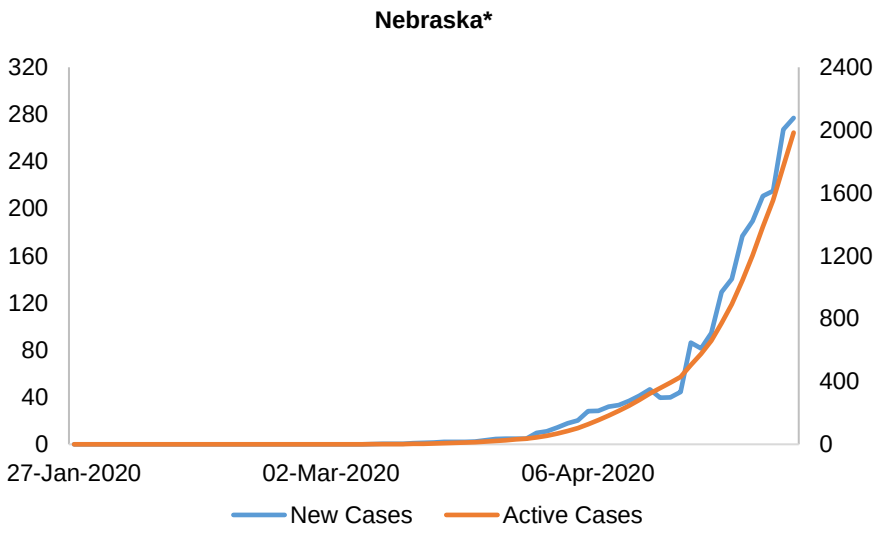
Missouri*

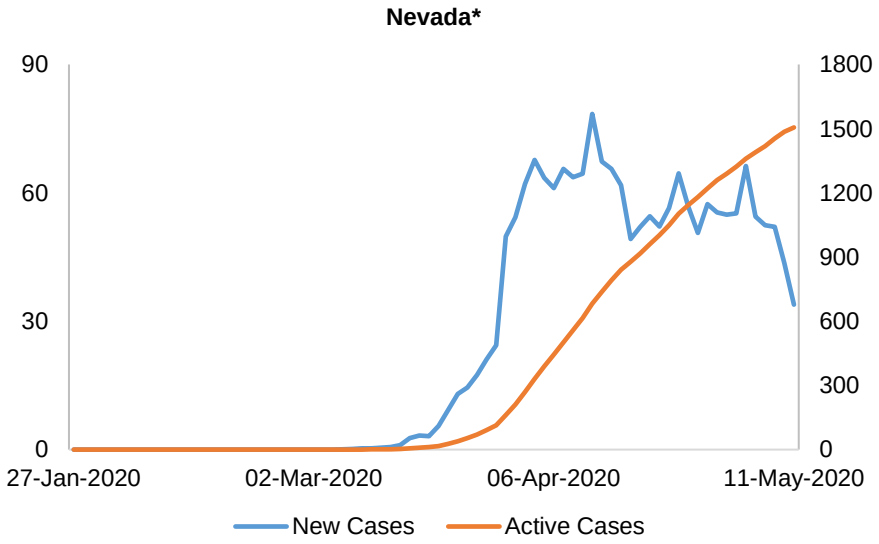


Montana*

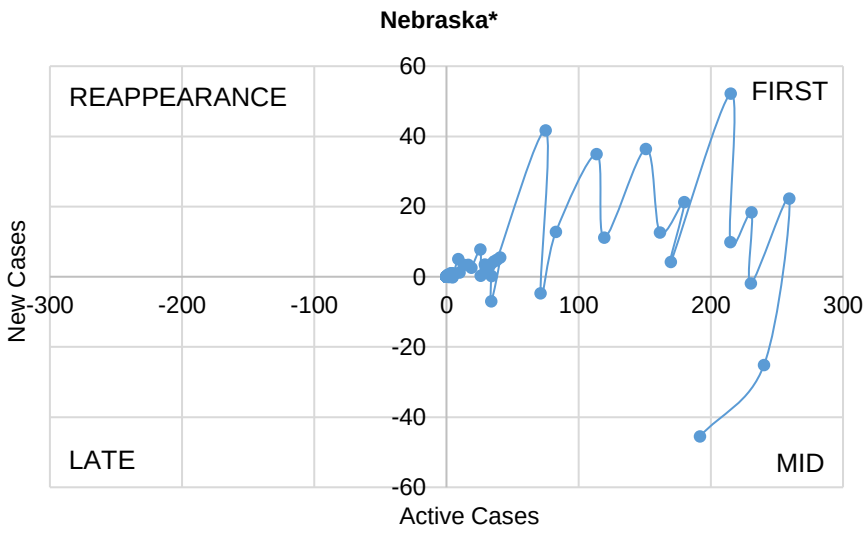


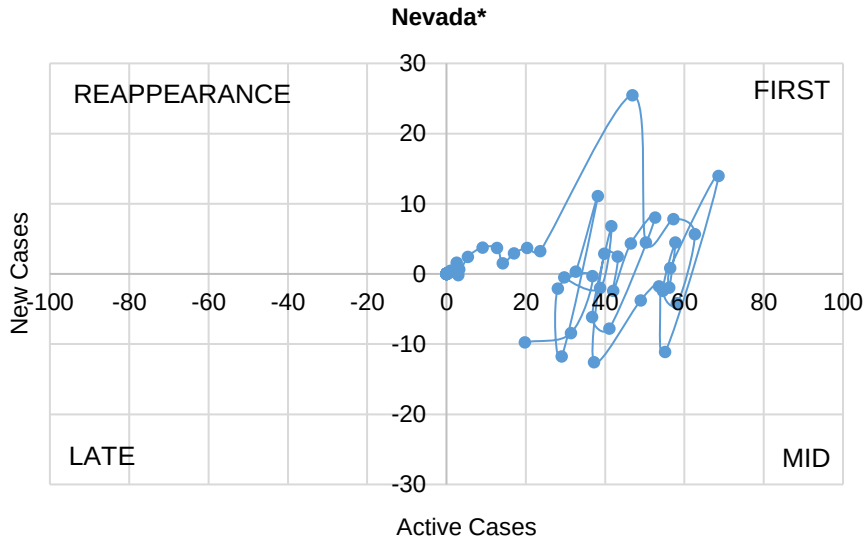
Epidemic Curve and Active Cases





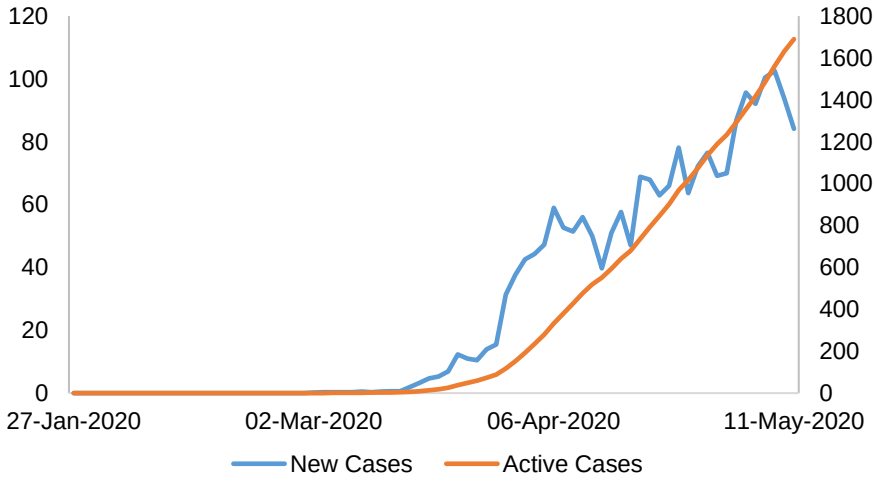
Covid Cycle



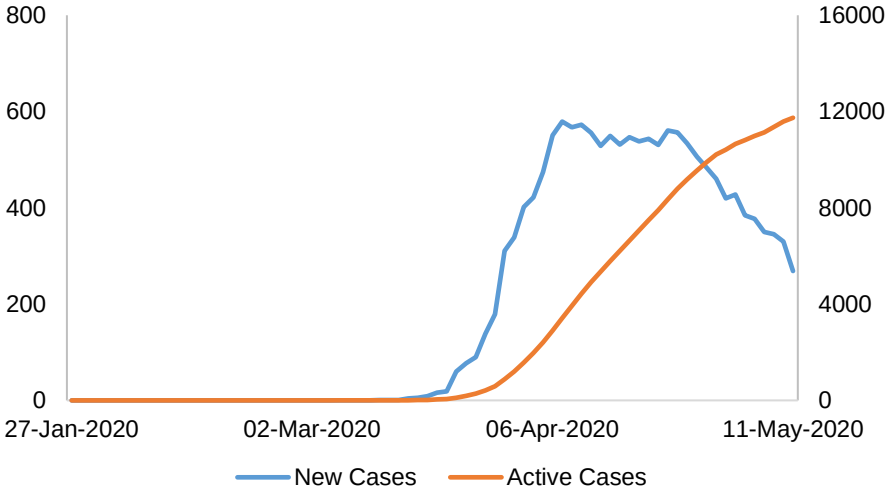


Epidemic Curve and Active Cases

New Hampshire*

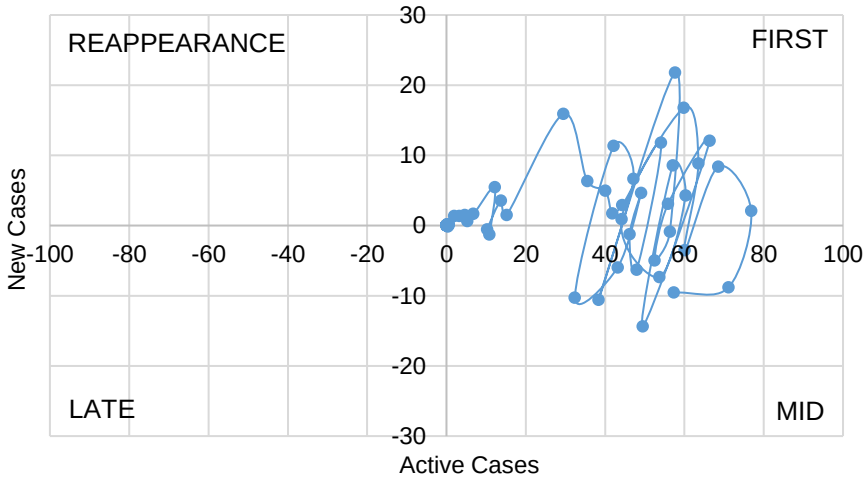


New Jersey

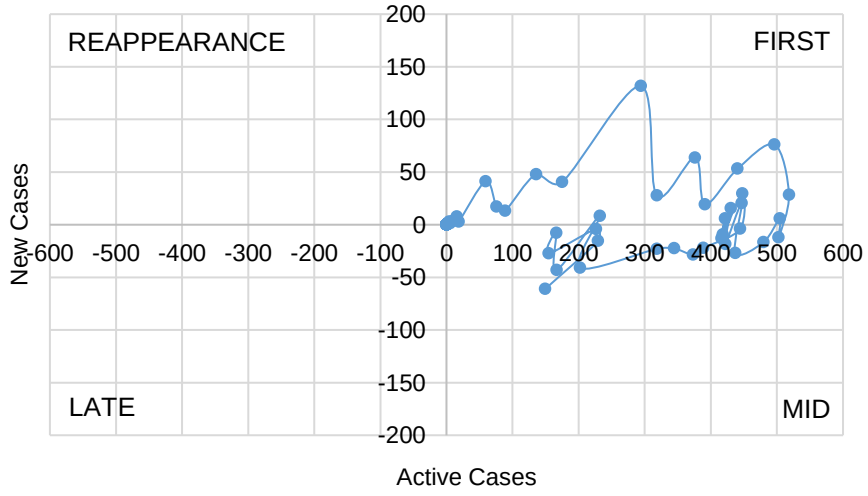


Covid Cycle

New Hampshire*

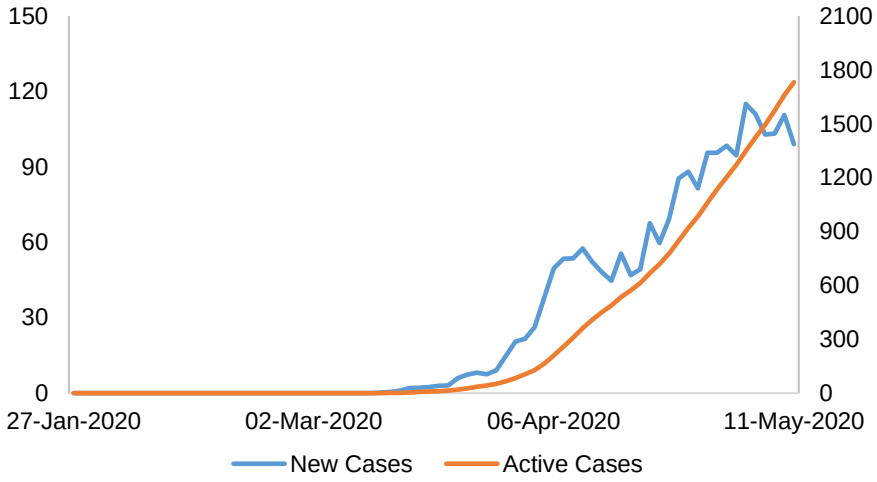


New Jersey

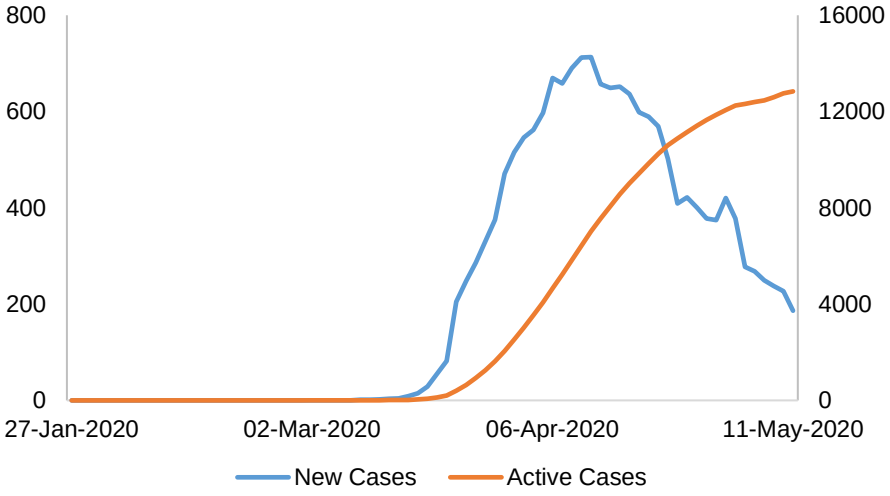


Epidemic Curve and Active Cases

New Mexico

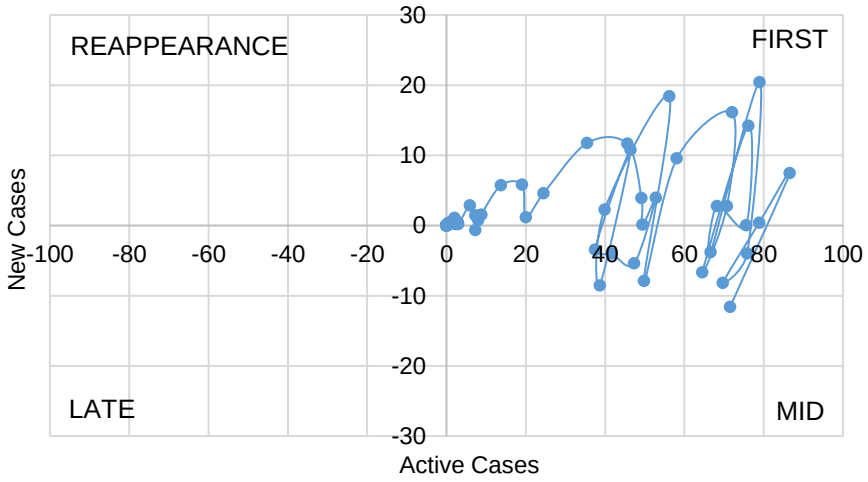


New York

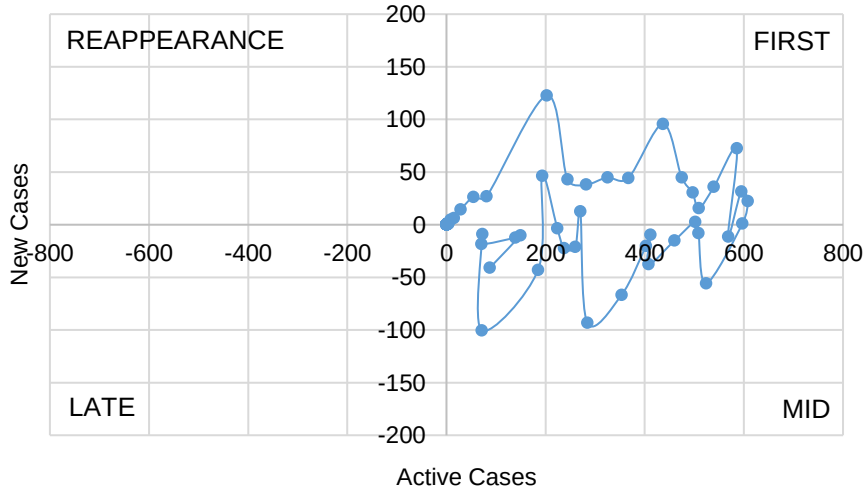


Covid Cycle

New Mexico

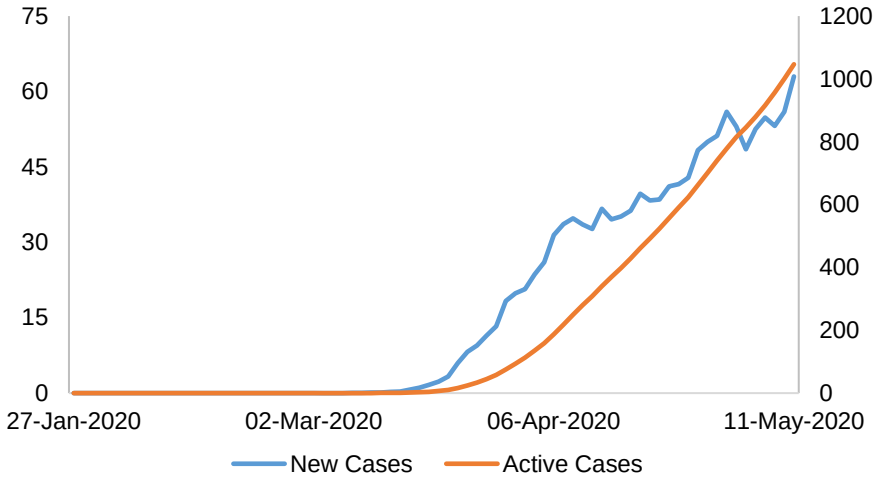


New York

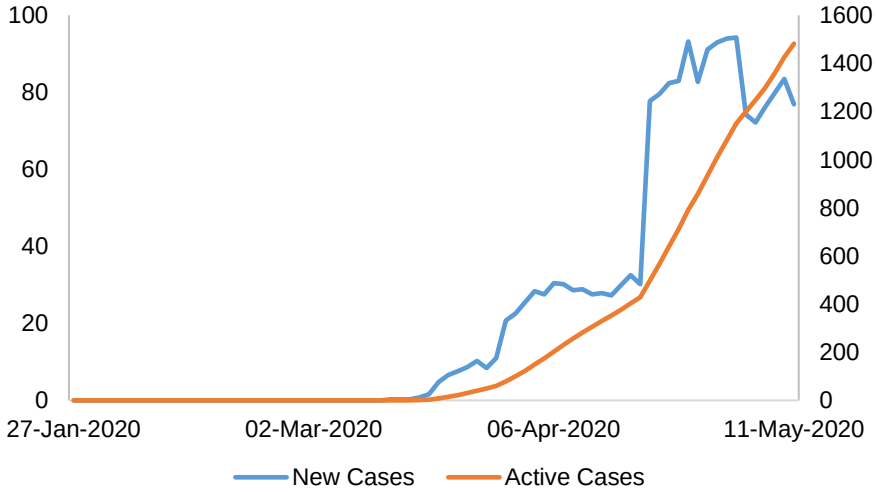


Epidemic Curve and Active Cases

North Carolina*

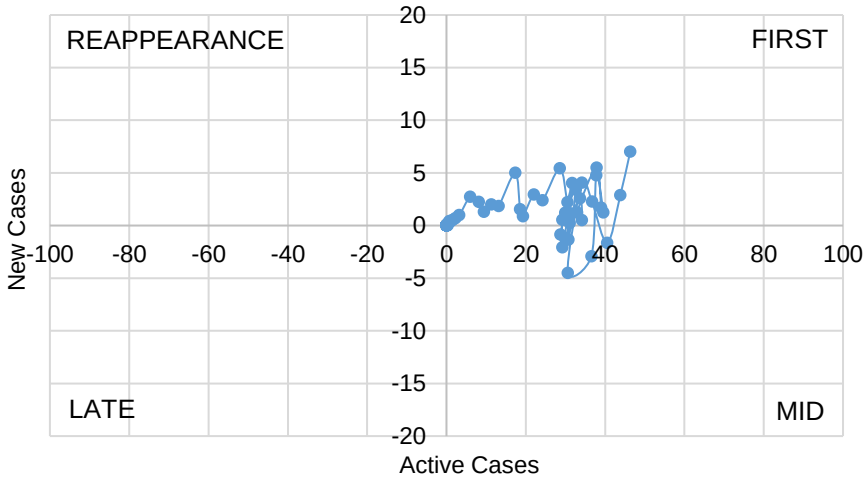


North Dakota*

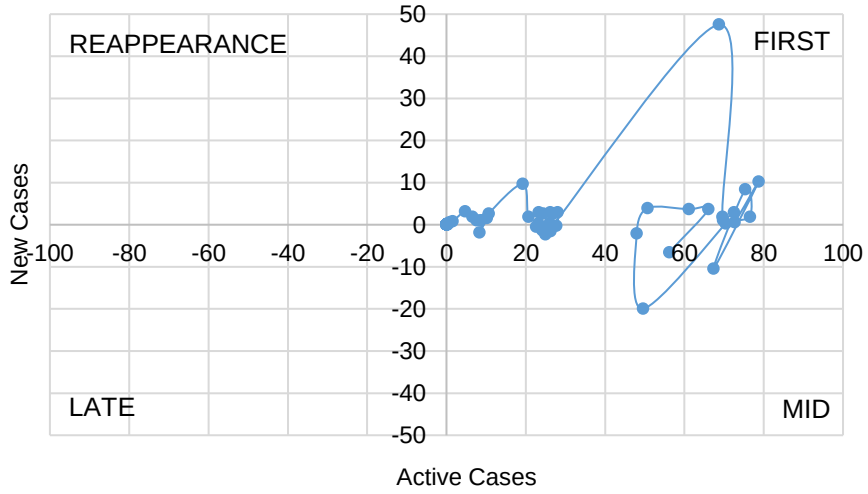


Covid Cycle

North Carolina*

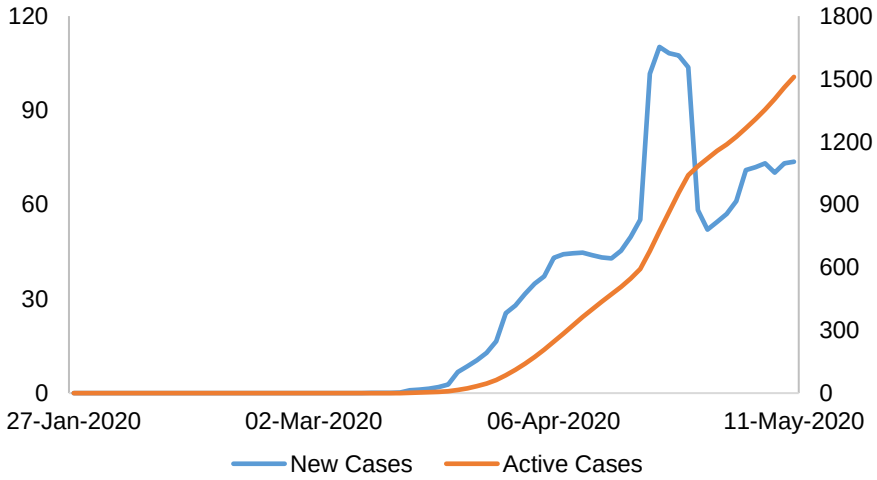


North Dakota*

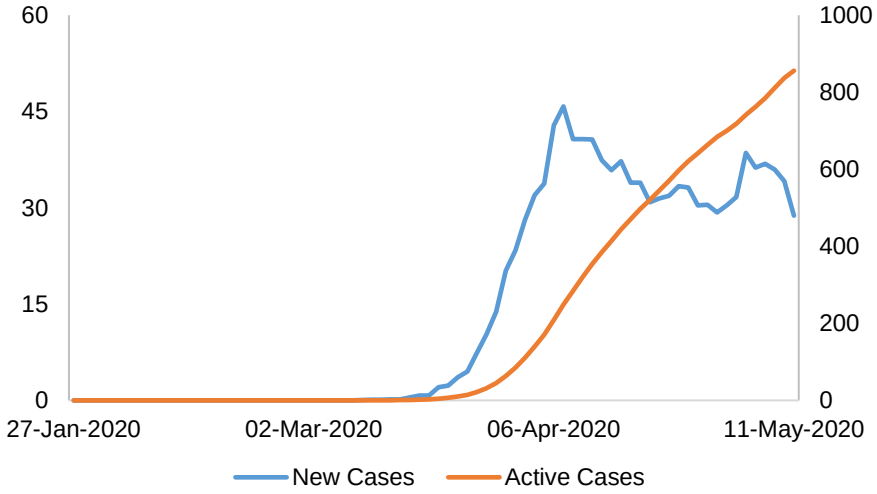


Epidemic Curve and Active Cases

Ohio

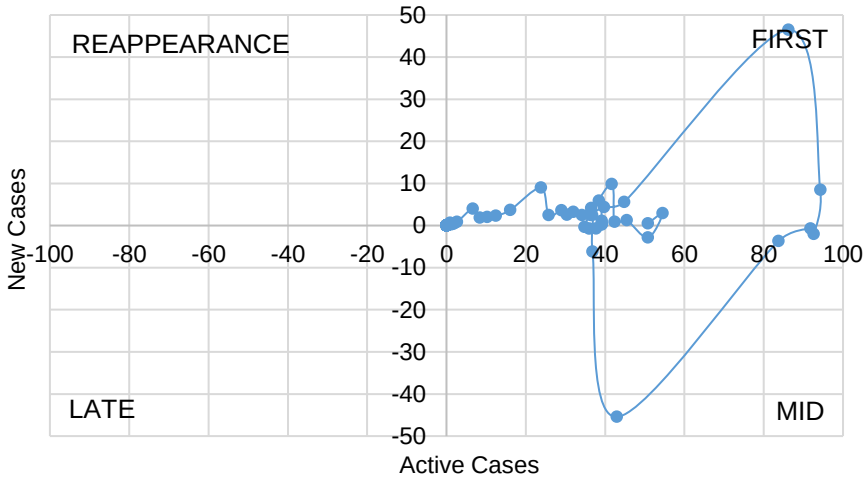


Oklahoma*

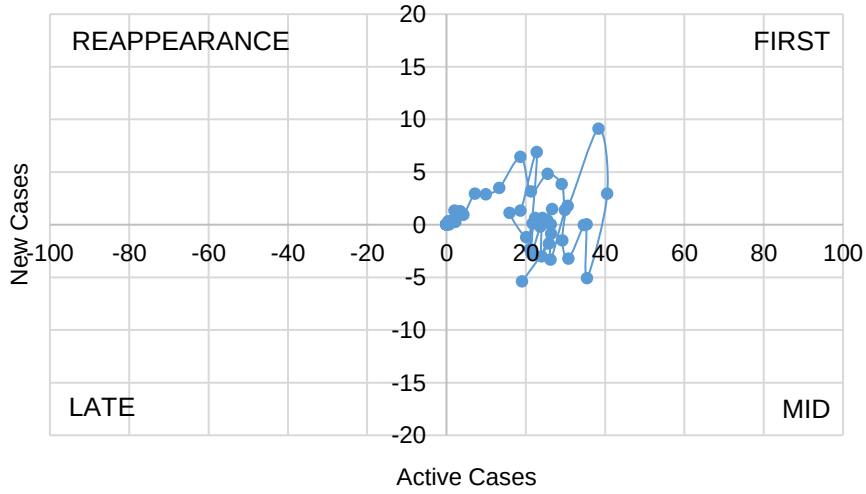


Covid Cycle

Ohio

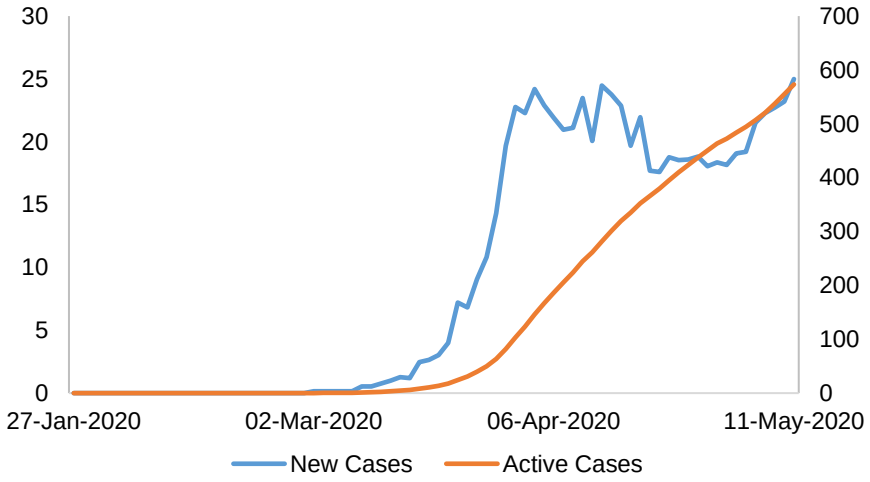


Oklahoma*

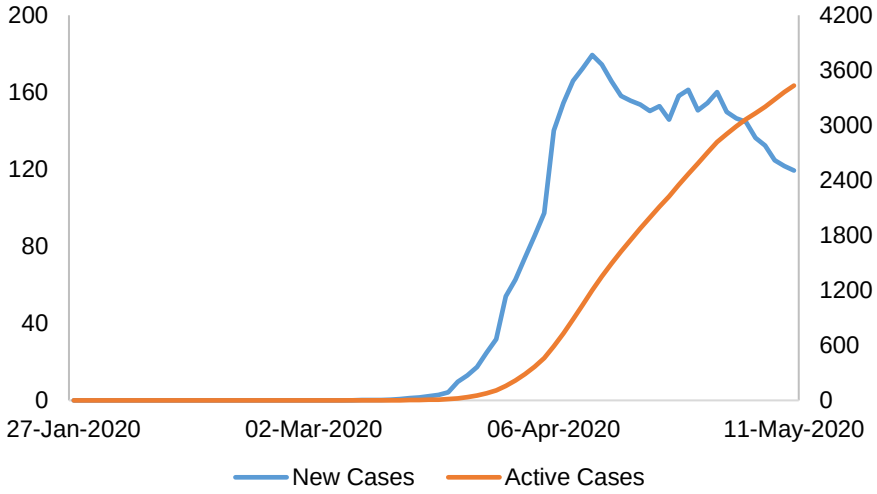


Epidemic Curve and Active Cases

Oregon

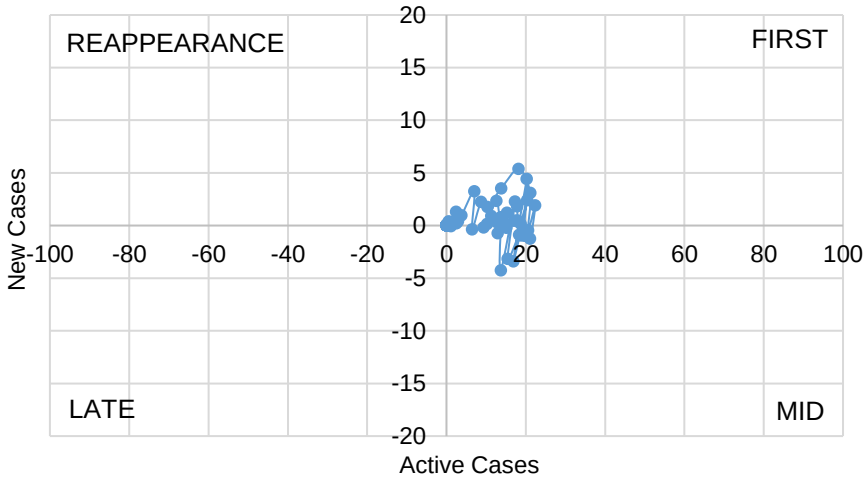


Pennsylvania*



Covid Cycle

Oregon



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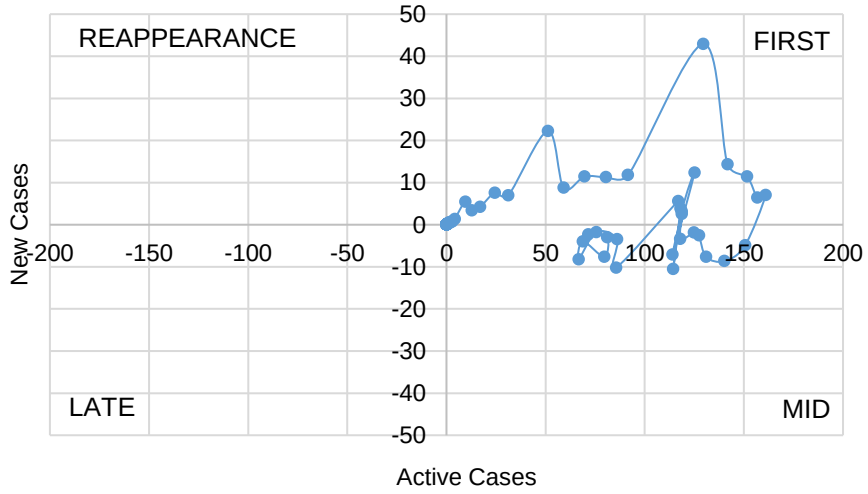
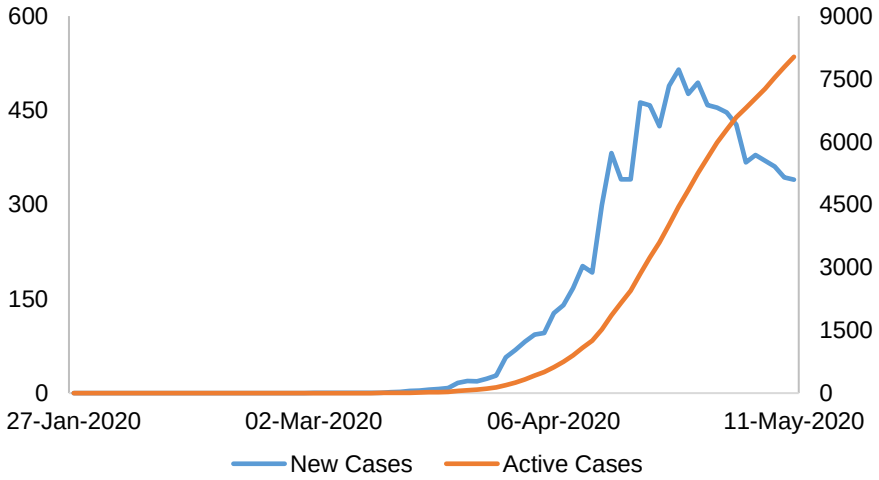


Epidemic Curve and Active Cases

Rhode Island*



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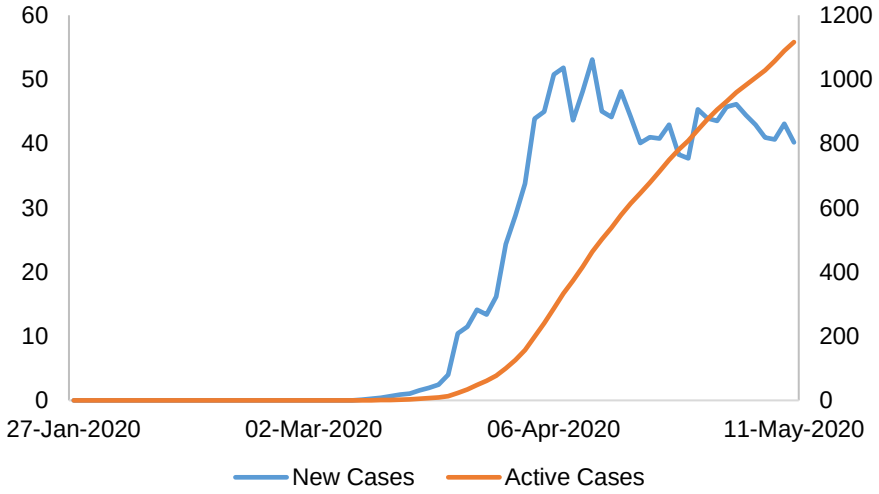
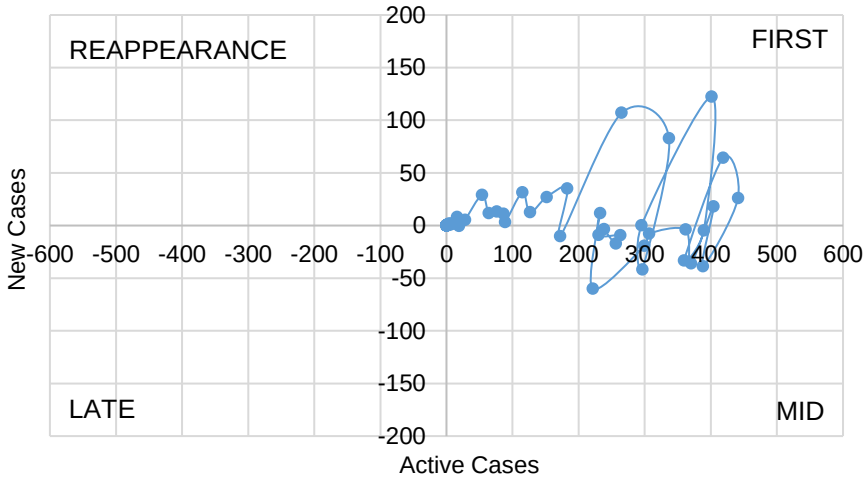


Covid Cycle

Rhode Island*



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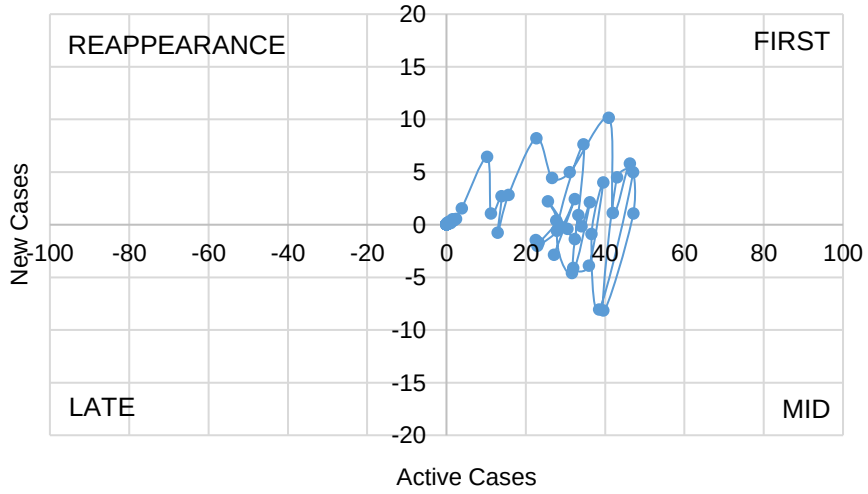
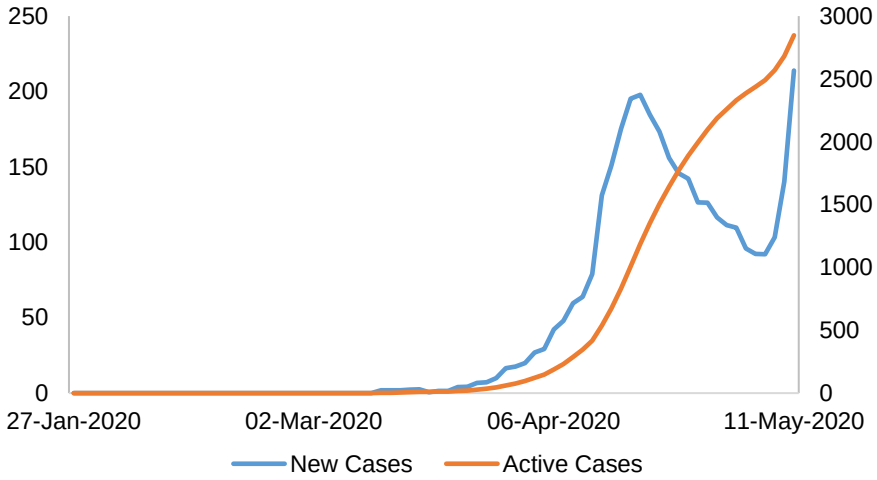
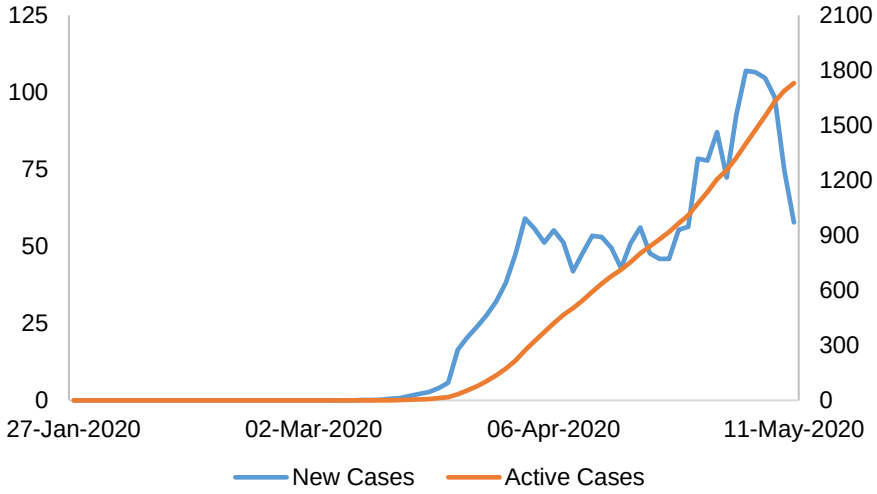


Epidemic Curve and Active Cases

South Dakota*

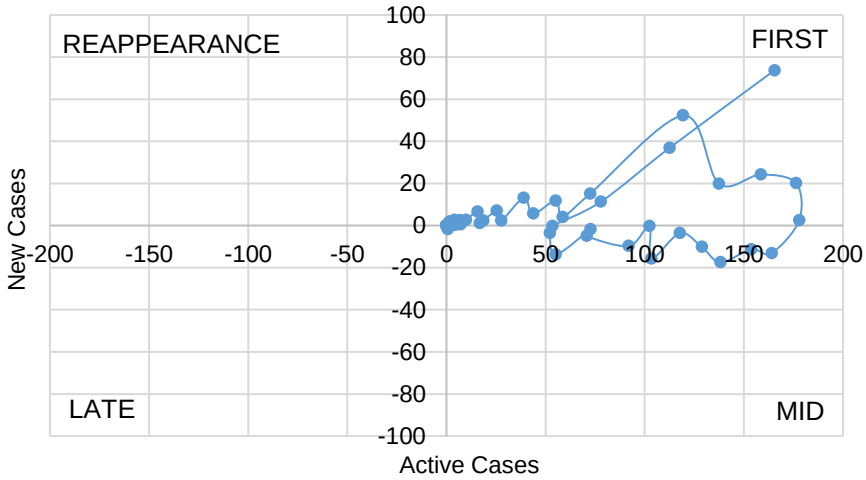


Tennessee*

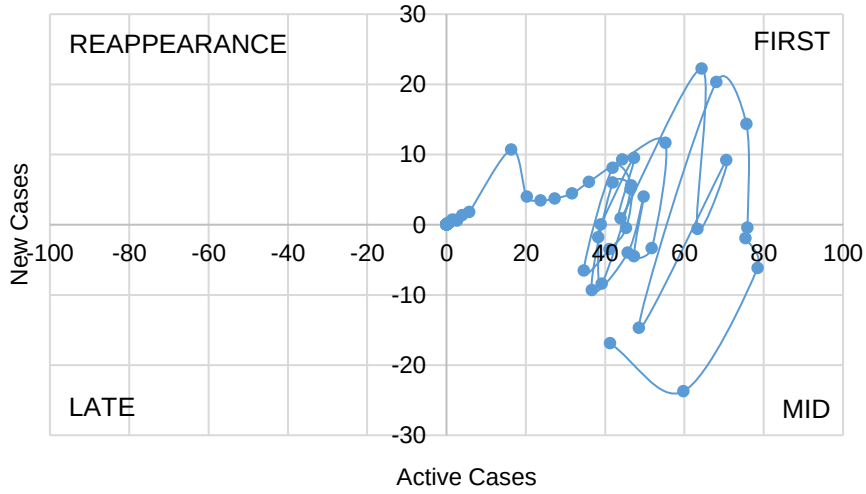


Covid Cycle

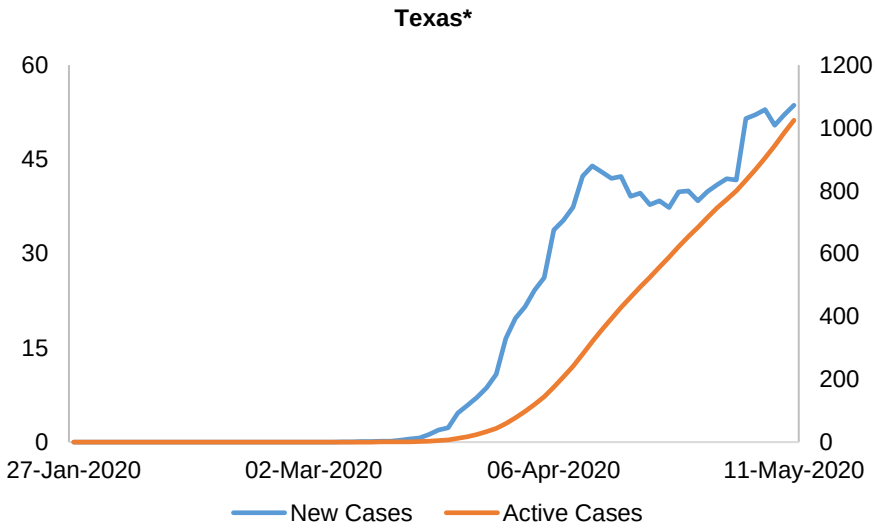
South Dakota*

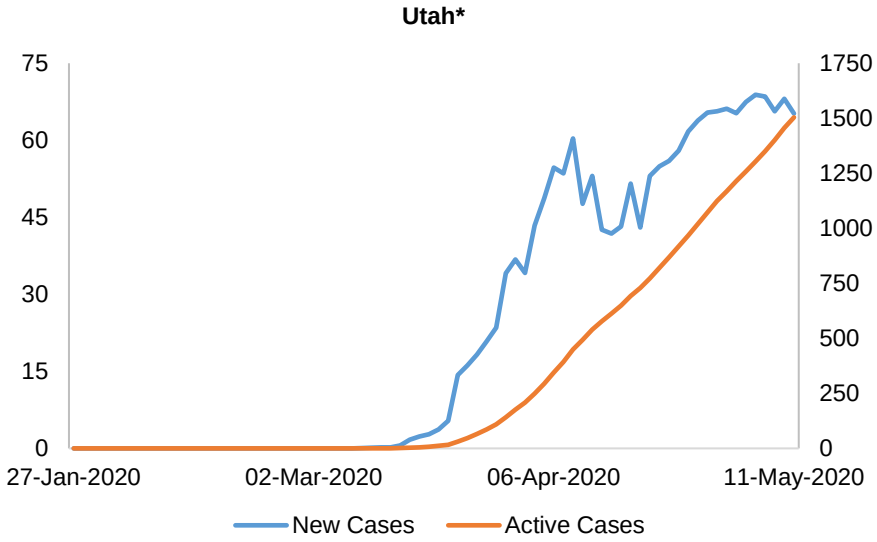


Tennessee*

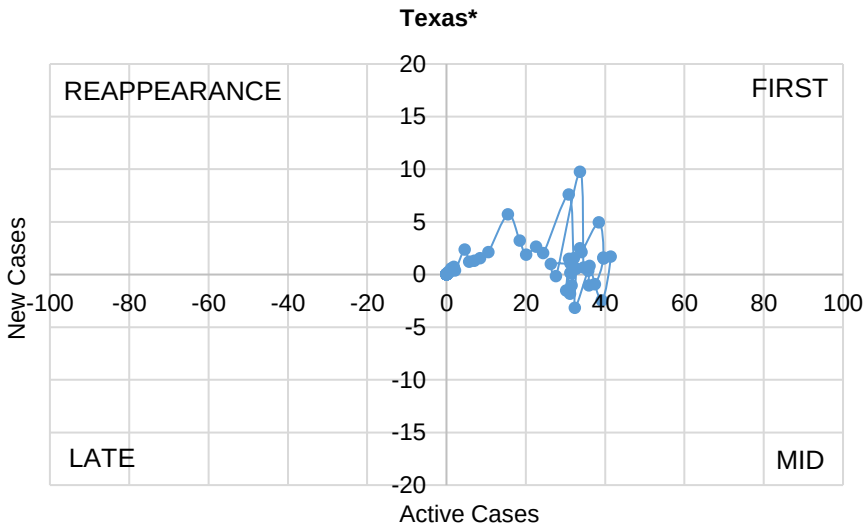


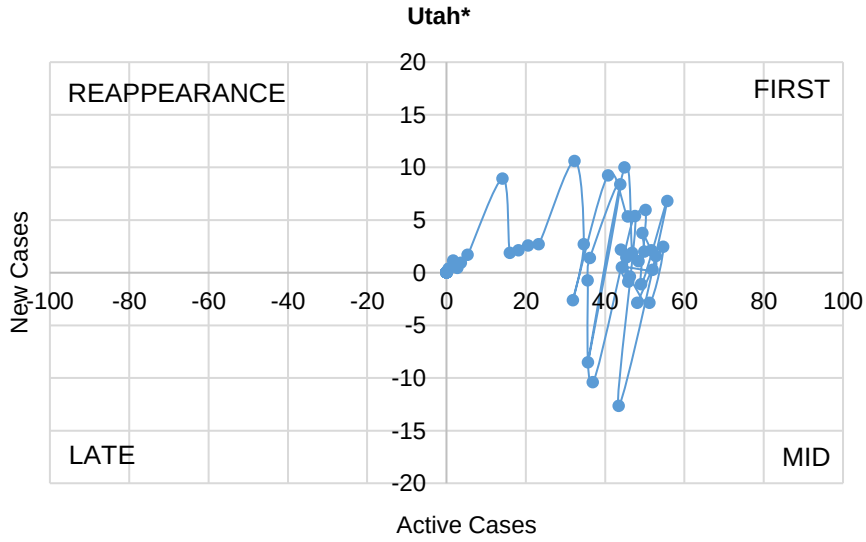
Epidemic Curve and Active Cases





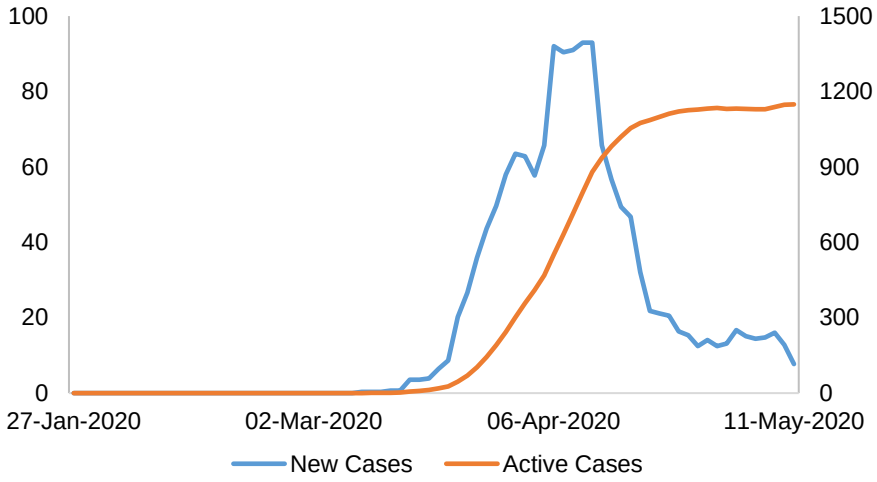
Covid Cycle



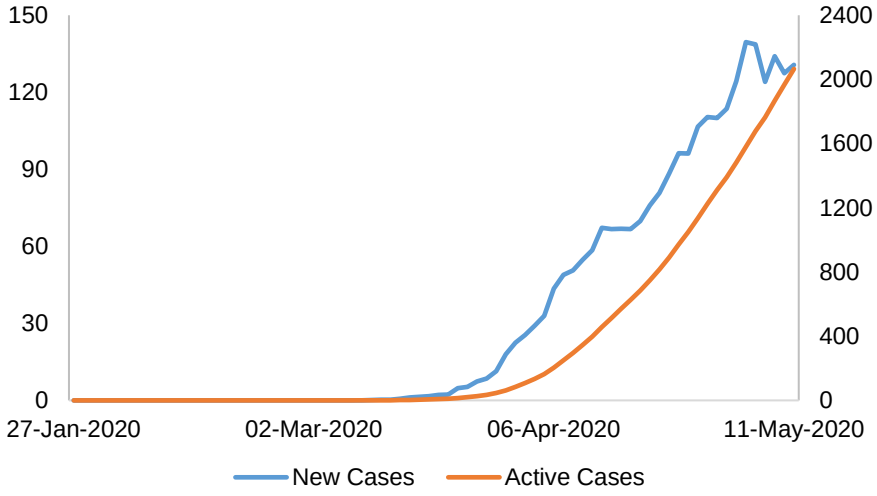


Epidemic Curve and Active Cases

Vermont

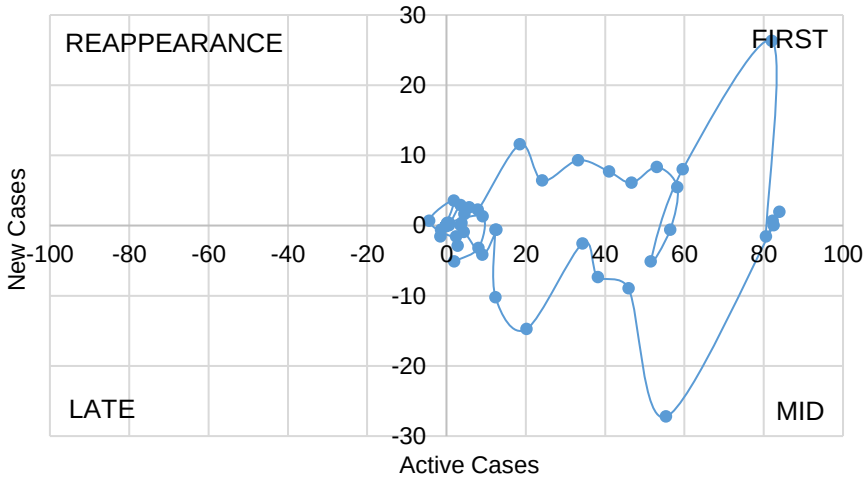


Virginia

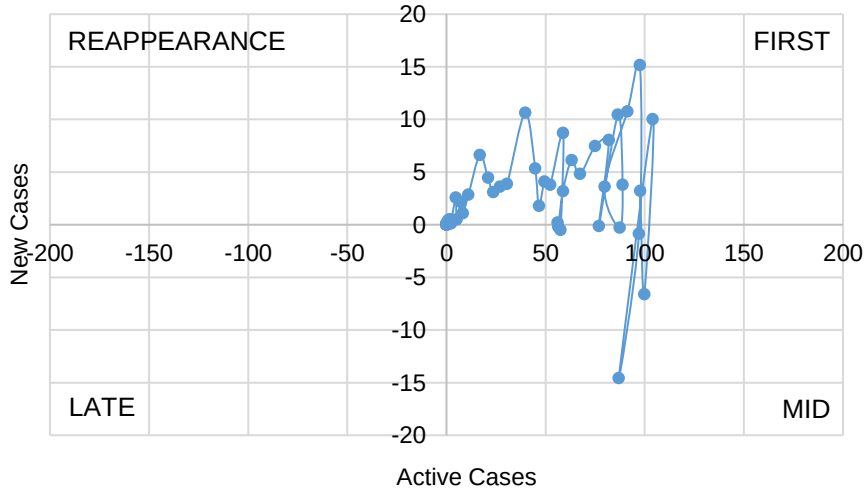


Covid Cycle

Vermont

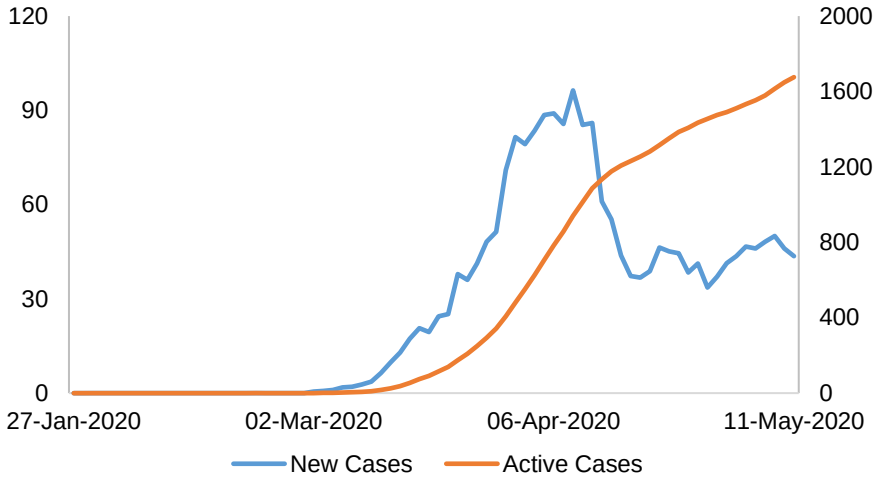


Virginia

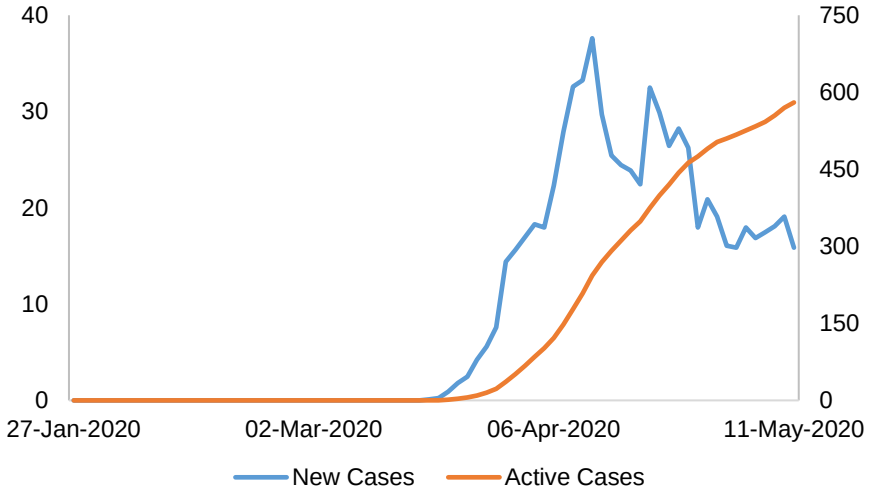


Epidemic Curve and Active Cases

Washington*

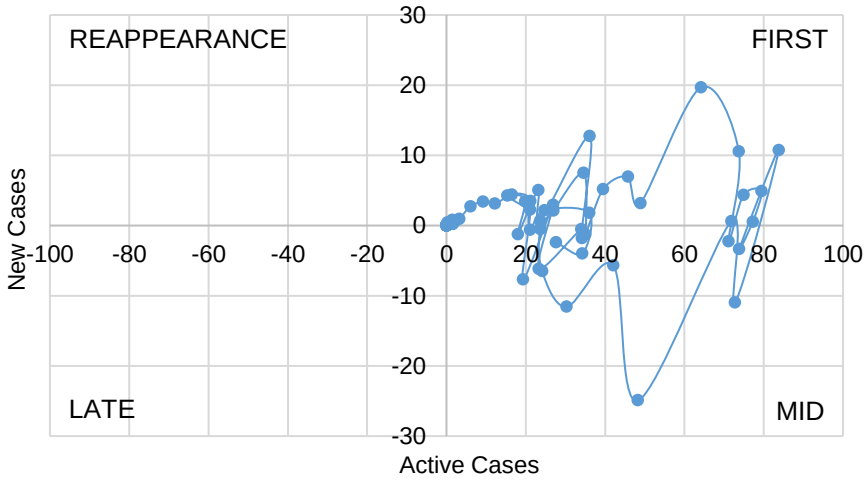


West Virginia*

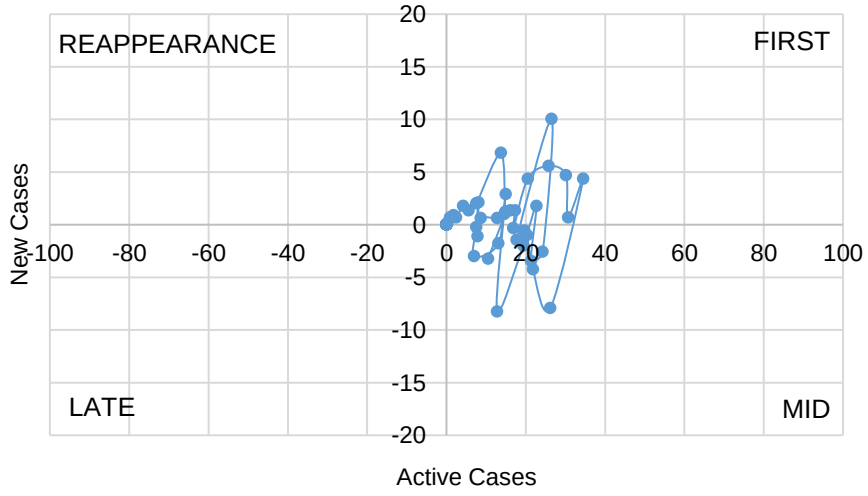


Covid Cycle

Washington*

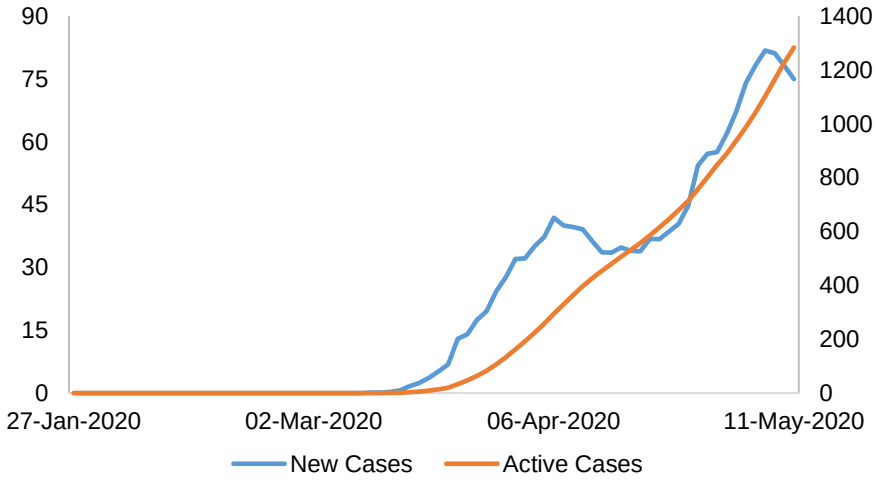


West Virginia

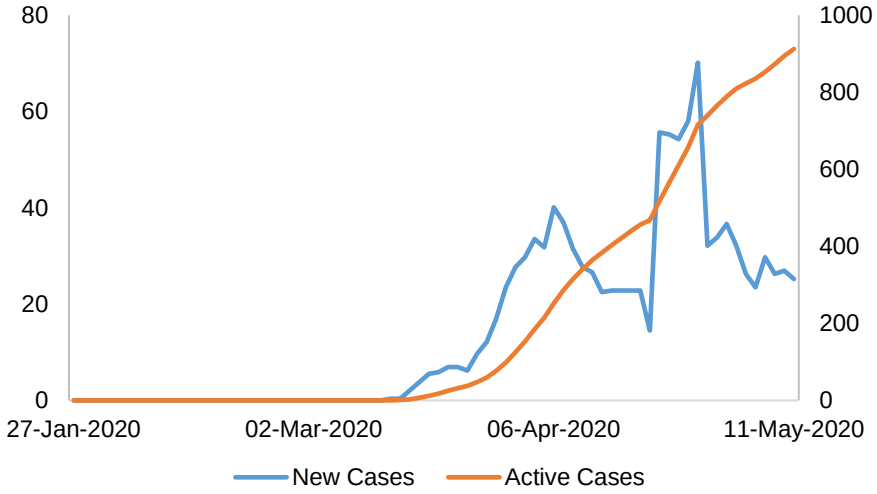


Epidemic Curve and Active Cases

Wisconsin

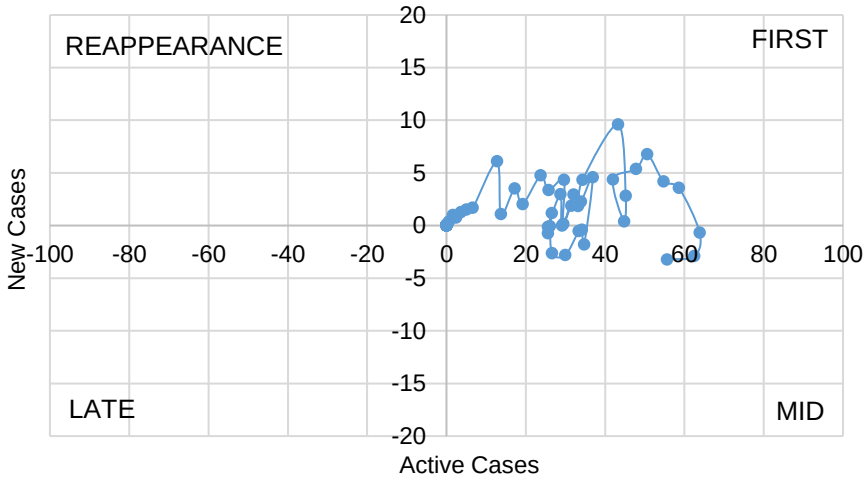


Wyoming*

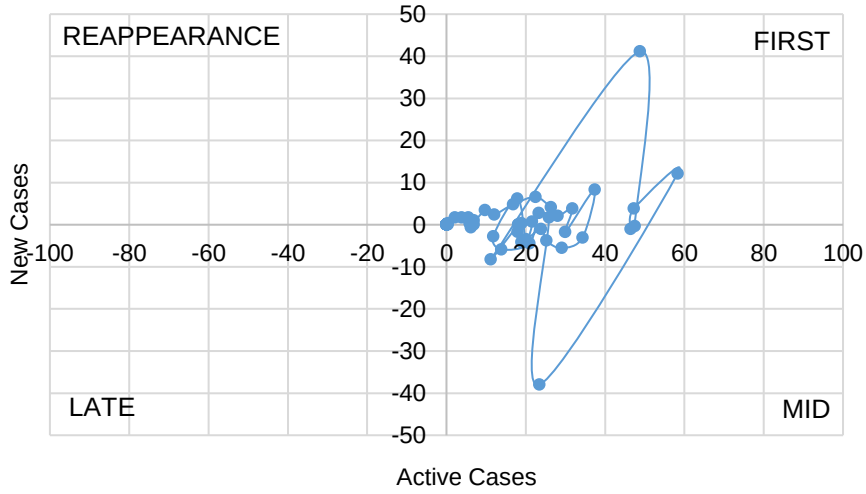


Covid Cycle

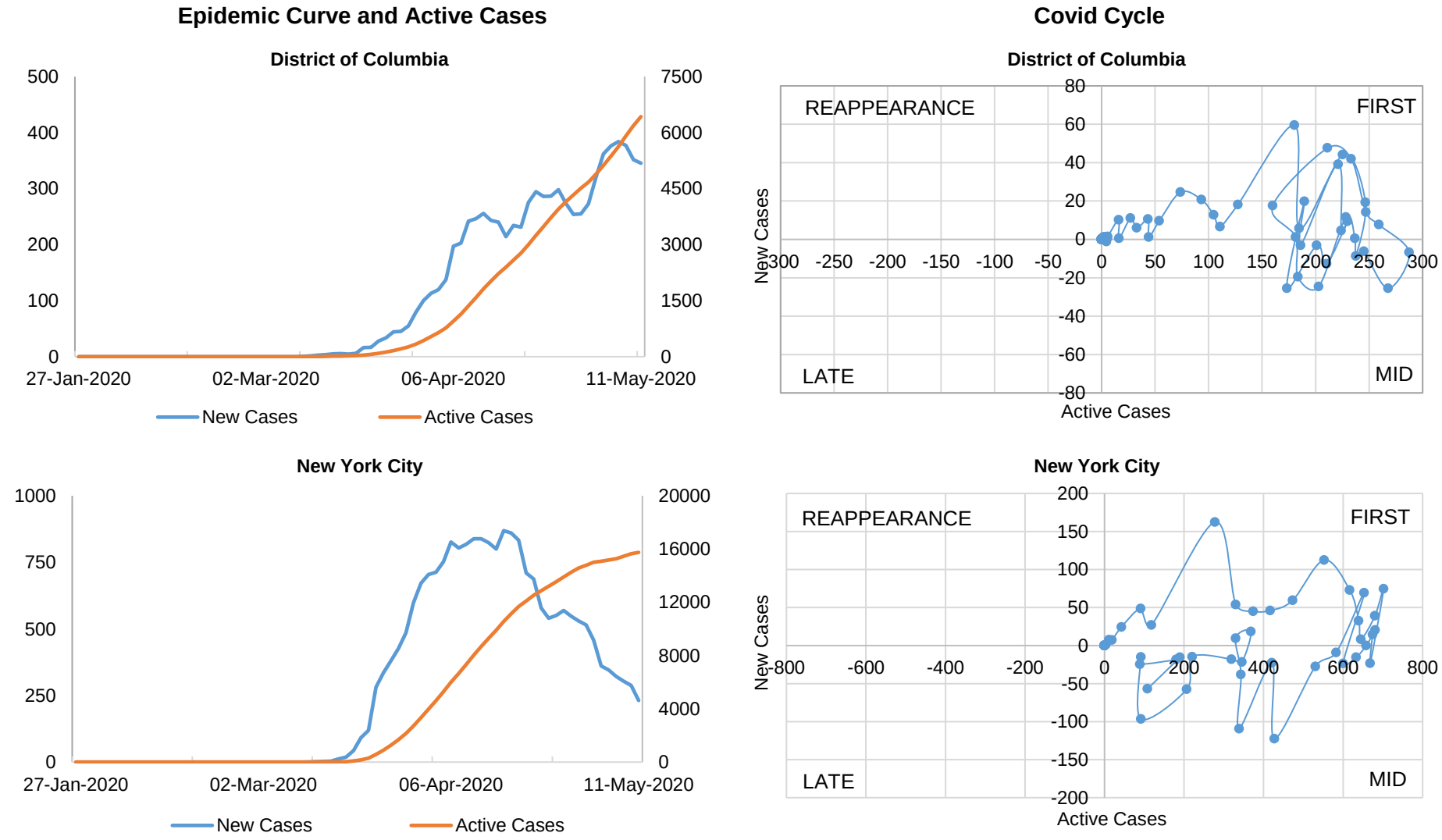
Wisconsin



Wyoming*



Appendix Figure 2. Selected US Areas: Epidemic Curve and Covid Cycle, as of May 11, 2020
(Level per 1 million population; change in number of persons per 1 million population)



Sources: Johns Hopkins Coronavirus Resource Center via Haver Analytics; and authors' calculations.