

# **The Impact of China's Fighter Jet Incursions on Public Sentiment in Taiwan: The Mediating Role of News Media**

**Tse-min Lin**

**University of Texas at Austin**

**Pi-shu Chen**

**Influence Communication Co., Ltd.**

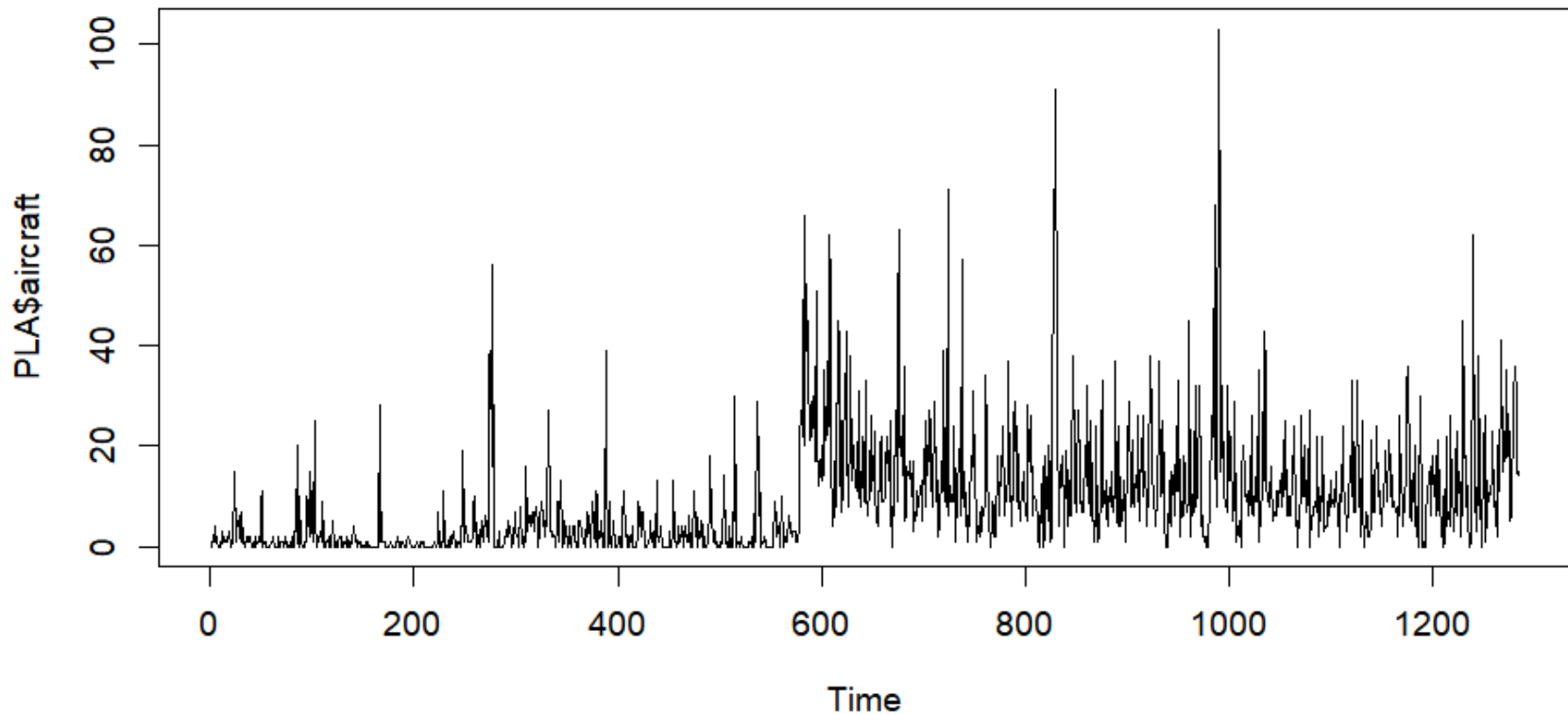
**EMPA, National Taiwan University**

**MOFA-TAP Conference, October 26-27, 2024, Sam Houston State University, The Woodlands Center, TX**

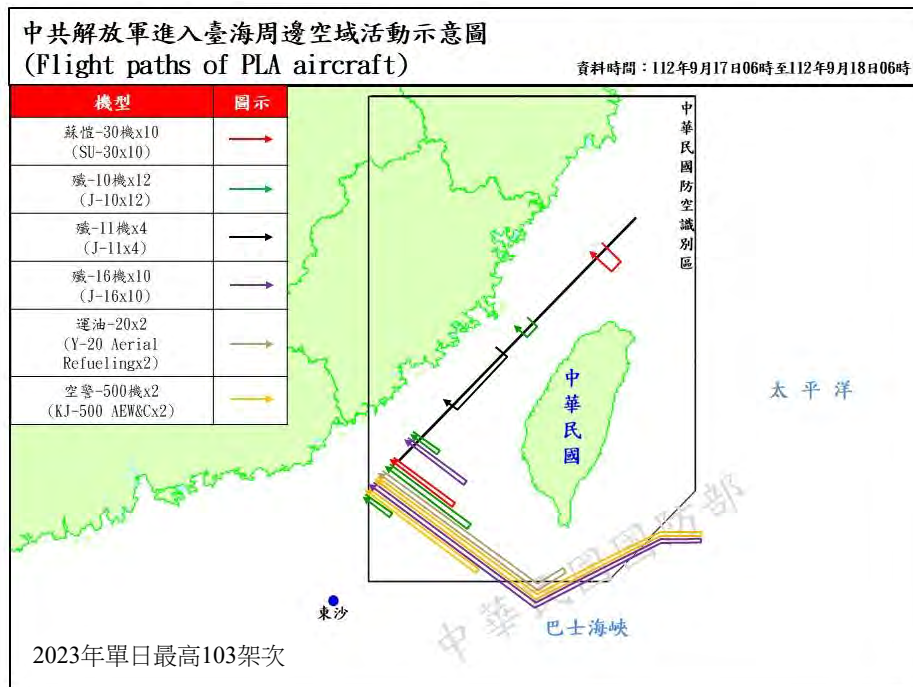
# Background

- Since 2016, China has been sending military aircrafts to Taiwan's ADIZ on a daily basis.
- The number of daily aircrafts increased significantly after Nancy Pelosi's visit on August 5, 2022.
- Costs, including both sunk costs and audience costs, for such incursions are substantial.
- What's China's motives for such costly incursions? Has it achieved its goals?

# Daily Time Series of PLA Aircrafts incursions over Taiwan's ADIZ



# Annual Counts of PLA Aircraft Incursions 2021-2024



Date	aircraft	crossed the median line
2024~7/24	2659	1450
2023	4736	1709
2022	3450	957
2021	949	0

(研究時間範圍: 2021.01.01-2024.7/24)

(資料來源: 國防部網站)

# Taiwanese Reaction to PLA Aircraft Incursions, 2019-2021

- ◆ 2021年台灣人對「中共遲早會出兵攻打台灣」的態度，同2019年民調相較表示不同意下降了13.1%，同意的部分增加了12.1%，顯示中國軍機擾台對民眾具備影響力。



(台灣人對「中共遲早會出兵攻打台灣」的民調數據；資料來源：台灣民意基金會)

# Possible Motives of PLA Aircraft Incursions over Taiwan's ADIZ

- Brinkmanship
- Signaling
- Bargaining
- Audience cost

# Cross-Strait Relations as a Hawk-Dove Game

Cross-Strait Relations		Taiwan	
		Cooperation (Dove)	Defection (Hawk)
China	Cooperation (Dove)	$V/2, V/2$	$0, V$
	Defection (Hawk)	$V, 0$	$(V-C)/2, (V-C)/2$

- $V$ =Taiwan's Sovereignty;  $C$ =Total Cost of War
- If  $V > C$ ,  $D$  is a dominant strategy &  $(D,D)$  is a non-Pareto optimal Nash equilibrium. The game is a **PD game**.
- If  $V < C$ , then  $(V-C)/2 < 0$ , there is no dominant strategy but both  $(C,D)$  and  $(D,C)$  are Nash equilibrium. The game is a **Chicken game**.
- Since  $C$ , the cost of war, is overwhelmingly high, cross-strait relation has been a **Chicken game** with Taiwan prevailing and China relenting.

# ADIZ Incursions as Brinkmanship

- Due to Thomas Schelling (The Strategy of Conflict, 1960).
- Also called Madman theory.
- Player A reveals intention to defect.
- If credible, can strengthen A's position and persuade Player B to give in.
- ADIZ incursions are brinkmanship that aims at forcing Nash equilibrium to move to "China prevails, Taiwan relents."



# Signaling in Bargaining

- Brinkmanship is essentially signaling.
- To show the other players that you are of the tough type.
- Signals must be costly to be convincing.
- By costly ADIZ incursions, China hopes to strengthen its position in bargaining with not only Taiwan but also the US.

# Brinkmanship aka Madman Theory (Thomas Schelling, ChatGPT image)



# The Costs of Signaling

- Brinkmanship can also strengthen the CCP's leadership domestically.
- Since backing down incurs audience costs, China's threat to use force is likely to be seen as credible.
- Without significant effects on Taiwan and the international community, ADIZ incursions would incur "sunk costs" and "audience cost".

# Sunk Costs and Audience Costs

- James Fearon (1994)
- Sunk costs are the costs that have been incurred in signal transmission. According to 蘇紫雲(2021), the total costs of the 4736 sorties of aircraft incursions in 2023 is about TWD\$104,287 million.
- Post (2019) argues that air mobilizations as signals, “demonstrate a lack of resolve during coercive bargaining: for (1) they cost less in sunk costs, (2) generate lower audience costs, (3) do not raise the risks of engagement, and (4) do not significantly shift the balance of power.
- If the costs of PLA aircraft incursions are indeed high, the next question is whether they have achieved the CCP’s goals.

# Research Questions

- Did ADIZ incursions have effects on negative public sentiment in Taiwan in 2023?
- How did Taiwanese respond to ADIZ incursions?
- What role did the news media play in reporting such incursions?

# Media Framing Theory

- Media framing theory suggests that the way media presents and structures news influences how audiences perceive and interpret information.
- We argue that media news reports mediate the effect of ADIZ incursions on negative public sentiment.
- Partisan reports (Green-leaning vs. Blue-leaning) of ADIZ incursions have different effects on partisan vibes (hawkish vs. dovish).

# Hypotheses

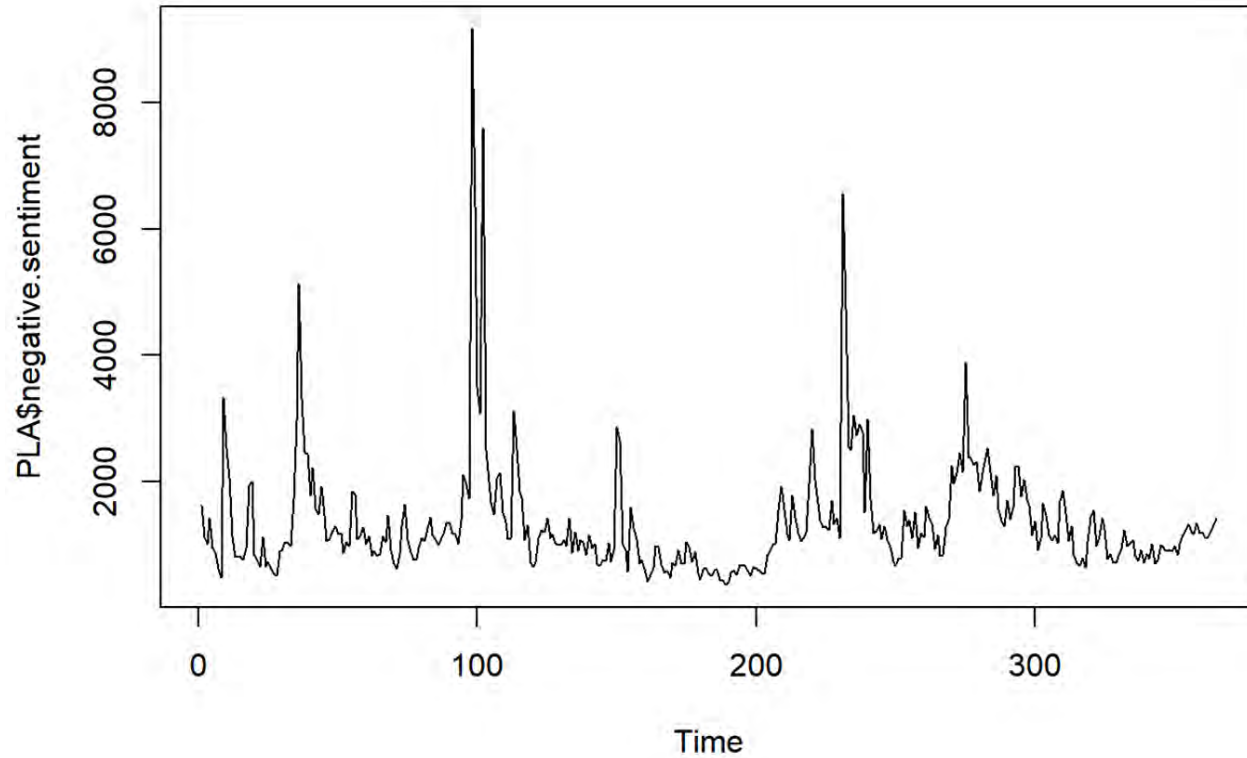
- H1: ADIZ incursions have (no) direct effects on negative sentiment
- H2: Media news reports have (no) mediation effects.
- H3: ADIZ incursions have different effects on partisan vibes.
- H4: Partisan news reports have different effects on partisan vibes.

# Data & Measurement

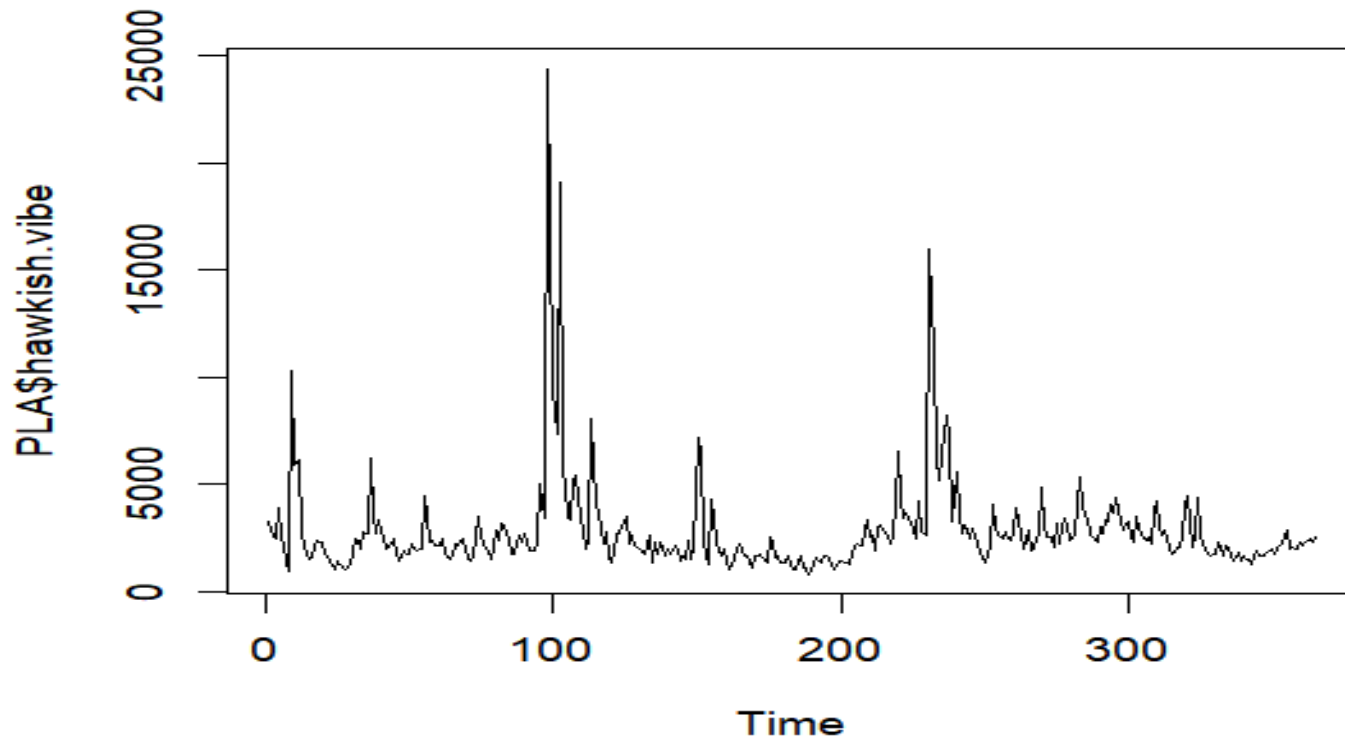
- Unit of analysis: daily
- Period: 2023/1/1 – 2023/12/31 (tentative)
- Dependent variables: (1) negative public sentiment, (2) hawkish vibe, (3) dovish vibe
- Independent variables: aircraft sorties, changes in (incursion-related) news reports, Green-leaning news reports, Blue-leaning news reports



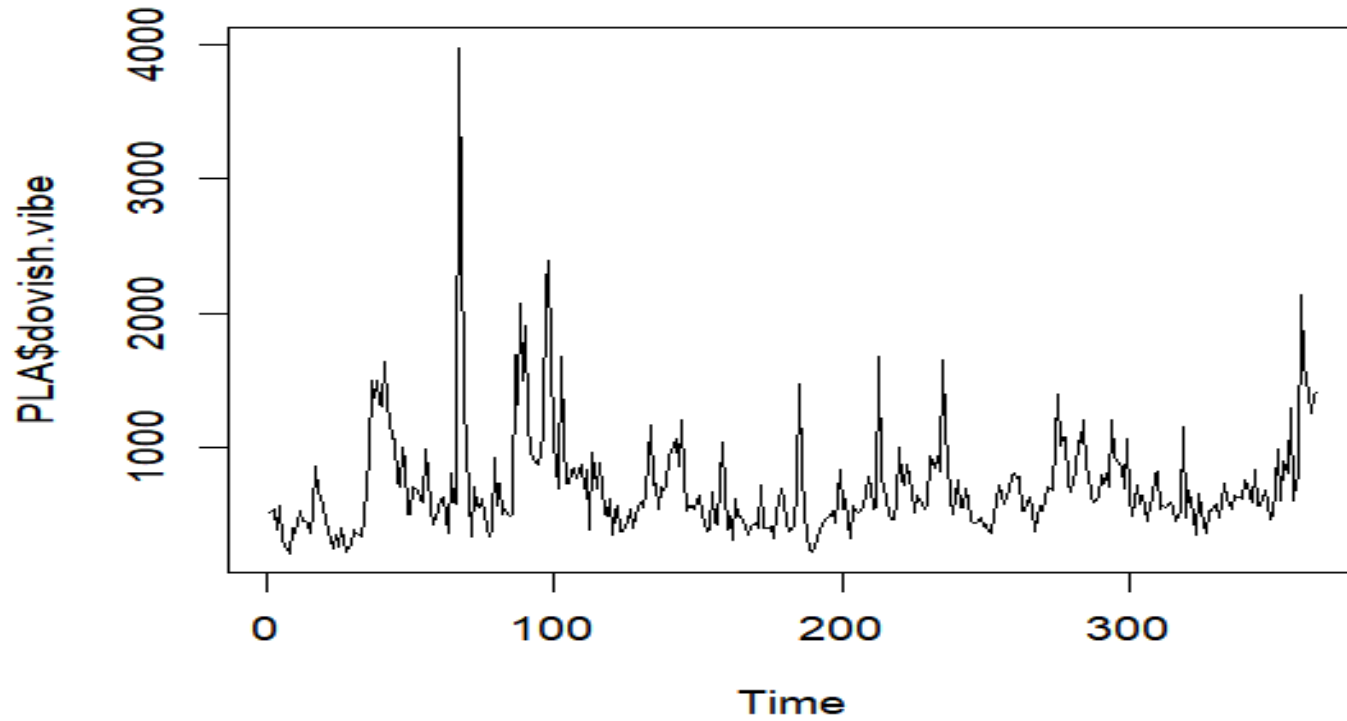
# Negative Public Sentiment



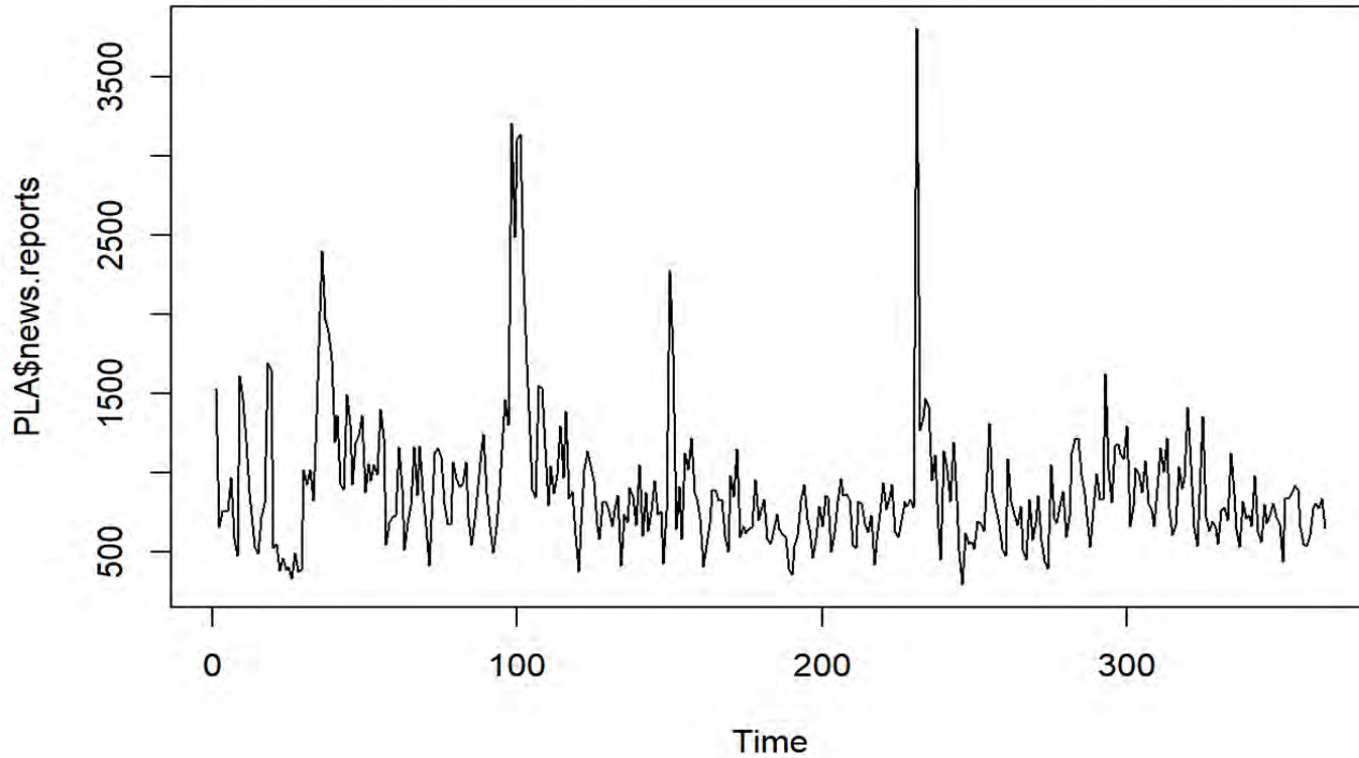
# Hawkish Vibe



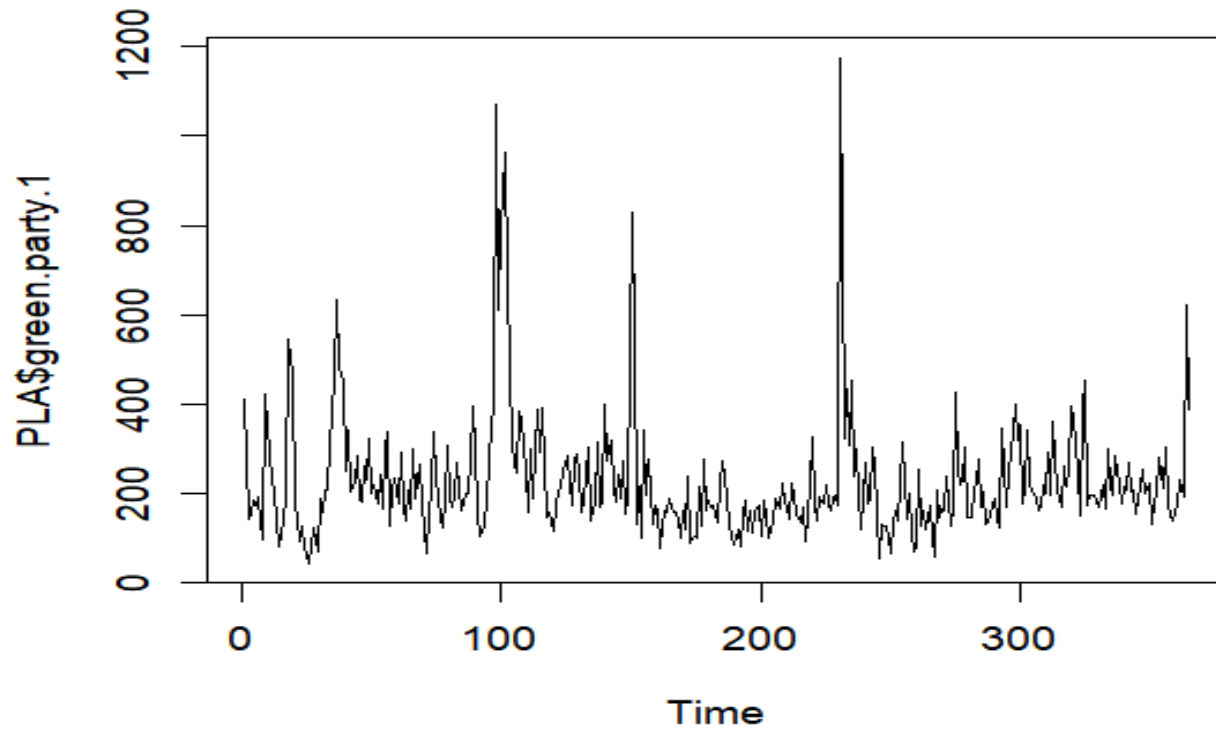
# Dovish Vibe



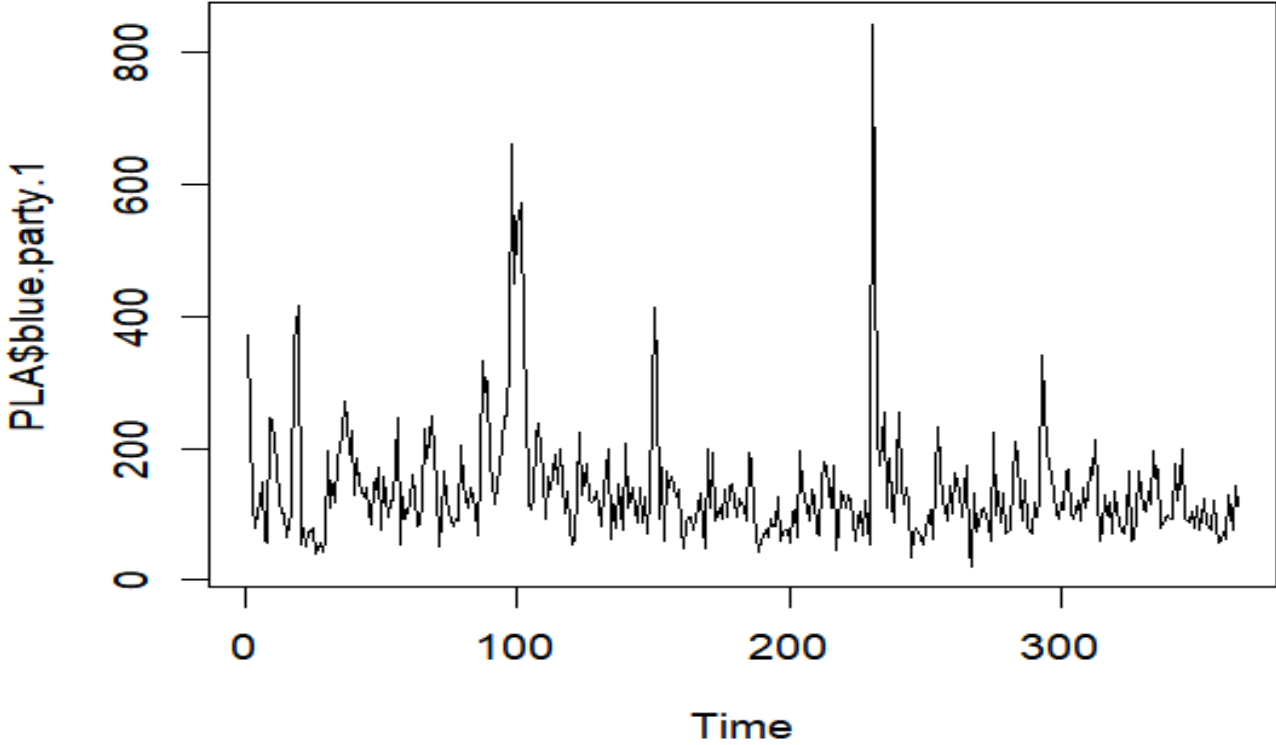
# Incursion-Related News Reports



# Green-Leaning News Reports



# Blue-Leaning News Reports



# Model & Methods

- autoregressive distributed lag model (ADL)
- mediation effect analysis

# ADL(1,1,1) Results

Dependent variable:			
negative.sentiment			
	(1)	(2)	(3)
lag1.negative.sentiment		0.623*** (0.042)	0.735*** (0.036)
lag1.aircraft	15.762*** (3.882)	4.623 (3.141)	0.937 (2.584)
diff.news.reports			1.193*** (0.088)
lag1.diff.news.reports			0.418*** (0.086)
Constant	1,137.037*** (69.533)	444.984*** (71.554)	344.813*** (60.367)
Observations	364	364	363
R2	0.044	0.410	0.612
Adjusted R2	0.041	0.407	0.608
Residual Std. Error	912.582 (df = 362)	717.458 (df = 361)	584.338 (df = 358)
F Statistic	16.484*** (df = 1; 362)	125.674*** (df = 2; 361)	141.246*** (df = 4; 358)

Note:

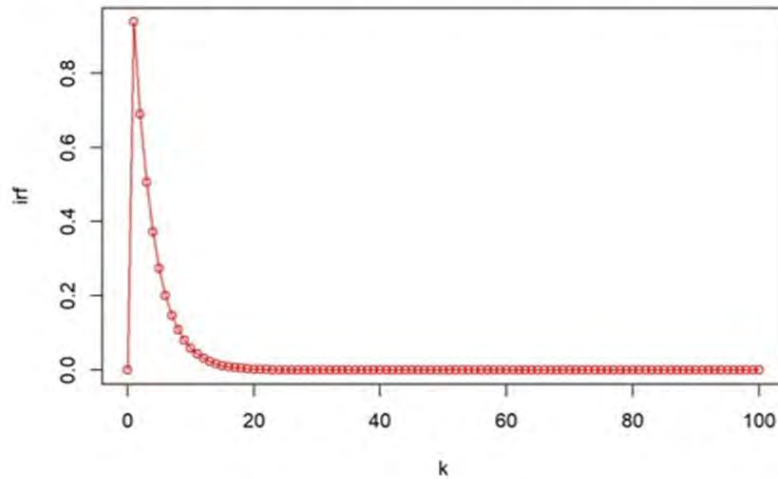
\*p<0.1; \*\*p<0.05; \*\*\*p<0.01



# IRF & SRF of Aircraft (Model 3)

1

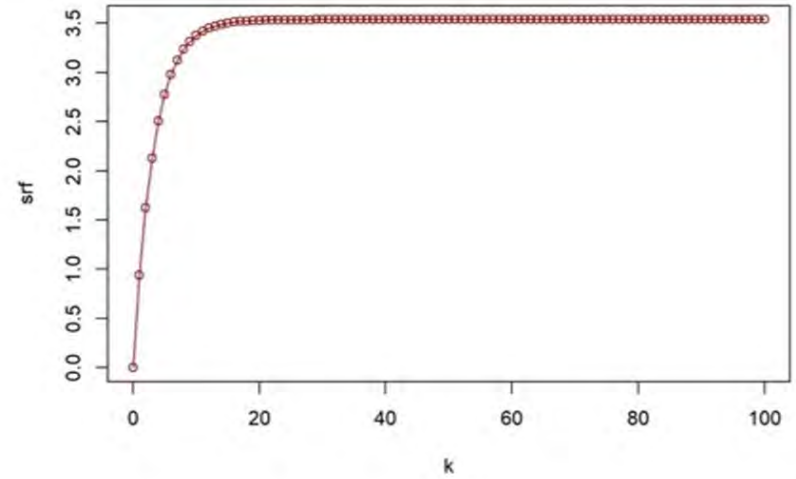
IRF: Negative sentiment to Aircraft, 2023



$K=1$  ,  $IRF=0.937$

2

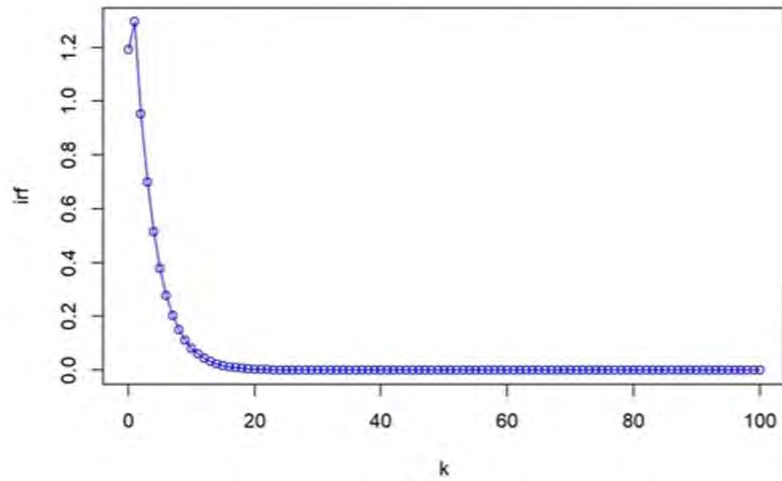
SRF: Negative sentiment to Aircraft, 2023



long-run steady state = 3.538

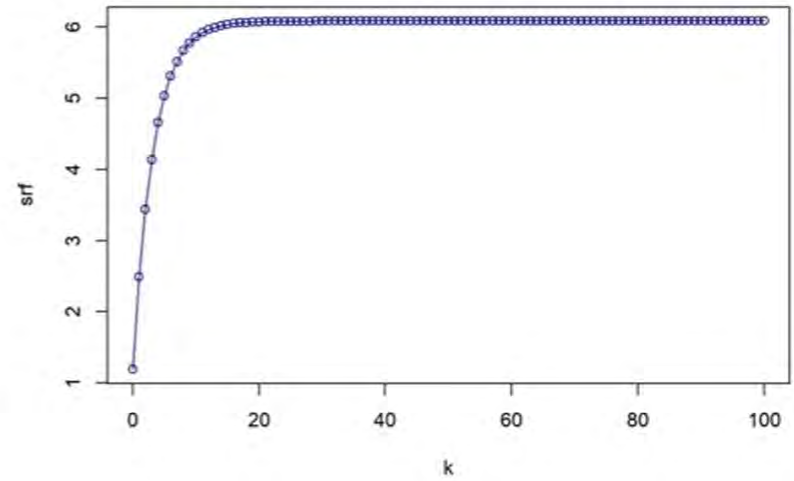
# IRF & SRF of News Reports (Model 3)

3 IRF: Negative sentiment to Changes in News Reports, 2023



$K=0$  , IRF=1.193

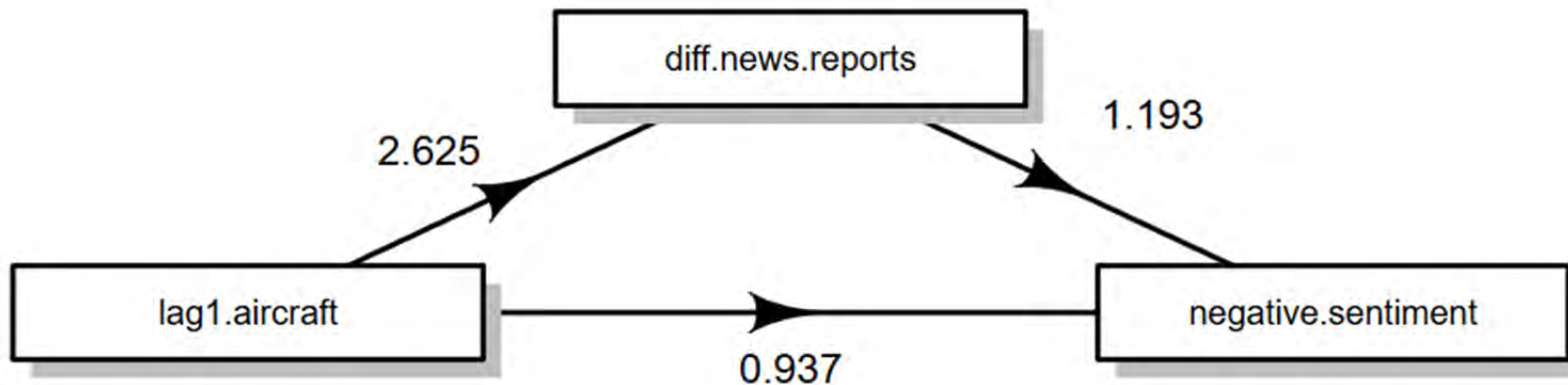
4 SRF: Negative sentiment to Changes in News Reports, 2023



long-run steady state =6.082



# Direct & Indirect Effects of PLA Aircraft Incursions



Direct Effect: 0.937

Indirect Effect:  $2.625 \times 1.193 = 3.129$

Total Effect =  $0.937 + 3.129 = 4.066$

Indirect effect as % of total effect = 77

# Media Framing of Partisan Effects

	Dependent variable:	
	hawkish.vibe (1)	dovish.vibe (2)
lag1.hawkish.vibe	0.679*** (0.040)	
lag1.dovish.vibe		0.586*** (0.042)
lag1.aircraft	6.375 (6.994)	-2.913** (1.310)
diff.green.party.1	7.228*** (1.177)	0.543** (0.232)
lag1.diff.green.party.1	2.498** (1.176)	0.237 (0.232)
diff.blue.party.1	1.730 (1.759)	-0.074 (0.348)
lag1.diff.blue.party.1	2.955* (1.752)	0.272 (0.347)
Constant	805.265*** (142.489)	329.546*** (36.999)
Observations	363	363
R2	0.550	0.373
Adjusted R2	0.542	0.363
Residual Std. Error (df = 356)	1,536.775	304.650
F Statistic (df = 6; 356)	72.427***	35.360***
Note:	*p<0.1; **p<0.05; ***p<0.01	

# Conclusion - 1

- In general, the effect of ADIZ incursions on negative sentiment is mediated through media news reports. In 2023, 77% of the total effect is indirect.

# Conclusion - 2

- ADIZ incursions and partisan news reports, however, have different effects on partisan vibes:
- While incursions have no direct effects on hawkish vibes, they have negative direct effects on dovish vibes, i.e., the more daily sorties, the less dovish vibes.
- Green-leaning news reports have positive effects on both hawkish and dovish vibes. However, the effects on hawkish vibes (7.228) are much larger than those on dovish vibes (0.543).
- Controlling for Green-leaning news reports, Blue-leaning news reports have no effects on hawkish/dovish vibes.

# Conclusion - 3

- Did ADIZ incursions significantly affect Taiwanese public's negative sentiments?
- In general, yes, but the effects are indirect through new reports.
- Furthermore, the effects are negative on dovish vibes.
- Partisan news reports, specifically Green-leaning news reports, stimulated more hawkish vibes than dovish vibes.



# negative public sentiment

TOP	負面詞	負面篇數	總提及篇數	正面詞	正面篇數	總提及篇數
1	戰爭	161583	405695	賴清德	85108	203400
2	中共	150741	398485	台灣&國家	25690	219423
3	台灣人	98493	175620	國民黨	22428	185635
4	賴清德	85108	203400	民進黨	19884	198943
5	自由	57855	149296	民主	19421	149056
6	國防	54537	191787	台灣&蔡英文	10403	85367
7	台海	49983	173555	郭台銘	6906	60339
8	蔡英文	49728	115897	年輕人	4800	37252
9	中國人	43014	86867	國家安全	3481	35015
10	立委	42269	96618	愛鄉 愛土 愛台	2784	20710
11	飛彈	41952	124393	潛艦國造	2574	19268
12	軍事	37926	155315	國防預算	2441	20379
13	外交	32064	118679	藍白合	1868	15410
14	烏克蘭	29729	77542	挺台灣	1754	6030
15	能力	28562	97317	經貿	1613	15620
16	郭台銘	27617	60406	抗中保台	1553	16470
17	軍機	26299	76574	不分區	1412	9183
18	大選	26044	70683	軍購案	1389	14494
19	台北	25657	108725	學術交流 兩岸交流	1335	10779
20	危機	25524	75947	(台灣 中華民國)&國慶	1300	8545

# hawkish vibe

TOP	正面詞	正面詞篇數	總文章數	負面詞	負面詞篇數	總文章數
1	台灣&國家	14831	127064	戰爭	142621	356608
2	民主	11307	90398	中共	101137	273474
3	軍人&(加薪 百億)	11135	93756	賴清德	57186	143454
4	台灣&國防	8961	83005	台獨	40102	83395
5	台灣&關係	6877	62593	飛彈	39186	117368
6	土地的歌 ((守護 捍衛)&台灣)	6102	32486	解放軍	39021	127150
7	台南 高雄	4783	29639	兩岸	38085	104941
8	獨立	4175	39208	共軍	37587	123752
9	主權	3720	44376	國防	35961	138403
10	台灣&烏克蘭	3702	35338	台海	34610	124193
11	韓國瑜	2547	12551	自由	33822	93756
12	戰力	2308	19001	經濟	31032	102238
13	王定宇	1254	12376	蔡英文	30446	74799
14	台灣總統	1168	15143	軍事	27571	117801
16	國慶 (台中&焰火)	1051	6888	武器	25195	61918
17	四個堅持 維持現狀	801	7387	烏克蘭	22558	58028
18	小英&台灣	678	4407	威脅	21288	80682
19	裴洛西	469	8036	國防部	21150	92766
20	選對的人 走對的路	441	1191	立委	18224	45117
21	防線	432	2929	美軍	17886	65933

# dovish vibe

TOP	正面詞	正面詞篇數	總文章數	負面詞	負面詞篇數	總文章數
1	兩岸	9102	73277	臺灣人	34544	61617
2	中華民國	8200	52562	兩岸	28822	73277
3	戰爭	7230	62712	戰爭	28138	62712
4	臺灣人	7100	61617	中共	26645	58387
5	中共	6284	58387	中國人	20430	42965
6	臺灣&世界	5750	40350	自由	17213	41235
7	台灣&民進黨	5652	53369	經濟	13863	39683
8	自由	5355	41235	蔡英文	13134	28724
9	經濟	4649	39683	主權	12652	27539
10	中國人	4642	42965	立委	11978	26869
11	立委	3572	26869	共產黨	11034	19045
12	安全	3556	31191	選票	8232	13086
13	蔡英文	3380	28724	外交	7696	24852
14	主權	3012	27539	能力	7619	19293
15	選擇	2493	19409	軍事	7518	22942
16	共產黨	2472	19045	武器	7478	13386
17	外交	2369	24852	中國大陸	7080	18105
18	鄉愁 祖國 回歸 回家 回鄉	2331	14950	武力	6723	13735
19	軍事	2247	22942	共和國	6011	14298
20	柯文哲	2150	23912	立場	6004	18033

# aircraft sorties

<b>Date</b>	<b>aircraft</b>	<b>crossed the median line</b>	<b>vessels</b>	<b>coast guard ship</b>	<b>PRC balloon</b>
<b>2024~7/24</b>	2659	1450	1328	72	84
<b>2023</b>	4736	1709	1905	0	7
<b>2022</b>	3450	957	658	0	0
<b>2021</b>	949	0	0	0	0

(Dynamic statistics of air conditions in the airspace around the Taiwan Strait)

<b>Date</b>	<b>buzz volume</b>	<b>positive sentiment</b>	<b>negative sentiment</b>	<b>news reports</b>
<b>2024~7/24</b>	1113218	122101	367899	195300
<b>2023</b>	1360104	146839	490086	324763
<b>2022</b>	1814630	127481	534487	468650
<b>2021</b>	1016045	59478	353948	351648

(QuickseeK social listening data)

# news reports (incursion-related)

TOP	正面詞	正面詞篇數	總文章數	負面詞	負面詞篇數	總文章數
1	臺海	4302	40145	共機	34867	111606
2	台灣&美國	3000	35835	軍機	26384	77829
3	總統&台灣	2769	30251	中共	20541	63031
4	蔡英文	2708	24748	戰機	17665	62801
5	空軍	2656	28307	總統	14752	41683
6	國防&台灣	2355	30255	國防	13038	57123
7	美軍	2269	27034	台灣人	11122	20877
8	台灣&民進黨	1809	19797	機擾台	11002	30928
9	賴清德	1221	12376	飛彈	10016	38183
10	中共&國防部	1068	16034	解放軍	9518	37462
11	大選	733	8255	兩岸	8729	26252
12	F-35	649	5686	國防部	8708	45382
13	防衛	647	10266	蔡英文	8614	24748
14	蔡總統	594	3342	戰爭	8480	22210
15	F-16	553	6236	台海	8038	40056
16	晶片	493	2291	中線	7379	30914
17	美國 航母	374	4166	軍事	7325	35165
18	國防&預算	361	4456	美軍	6755	26991
19	P-8A 反潛 巡邏機	334	1197	日本	6610	21761
20	國防部長	334	6167	經濟	6147	18897

# Green-leaning news reports

中共「惡鄰居」軍演！IDF飛官待命升空 臂章「台灣黑熊痛扁小熊維尼」



三立新聞網

更新於 2023年04月09日 19:41 · 發布於 2023年04月09日 19:36

追蹤



<https://today.line.me/tw/v2/article/oqN7DXW>

「請海鷗轉告習近平」 國軍：共機如禿鷹惹人厭



自由電子報

更新於 2023年01月10日 20:30 · 發布於 2023年01月10日 20:13

追蹤



<https://today.line.me/tw/v2/article/Ya0m0Bp>

# Blue-leaning news reports

## 蔡麥會後圍台軍演又來！共軍宣布「環台島戰備警巡」演習



TVBS

更新於 2023年04月08日 17:44 · 發布於 2023年04月08日 09:12 · 周子馨

追蹤



去年時任美國眾議院議長洛西離台後，中共也曾實施圍台軍演。(圖/達志影像路透社)

共軍圍台軍演又來了！總統蔡英文日前過境美國洛杉磯與眾議院議長麥卡錫 (Kevin McCarthy) 會晤引發北京當局震怒，中共東部戰區新聞發言人施毅今 (8) 日上午宣布，

<https://today.line.me/tw/v2/article/OpJgV7E>

## 北京擬16日起對台設「禁航區」 台飛日韓北美恐受影響



TVBS

更新於 2023年04月12日 17:03 · 發布於 2023年04月12日 15:16 · 丘力胤

追蹤

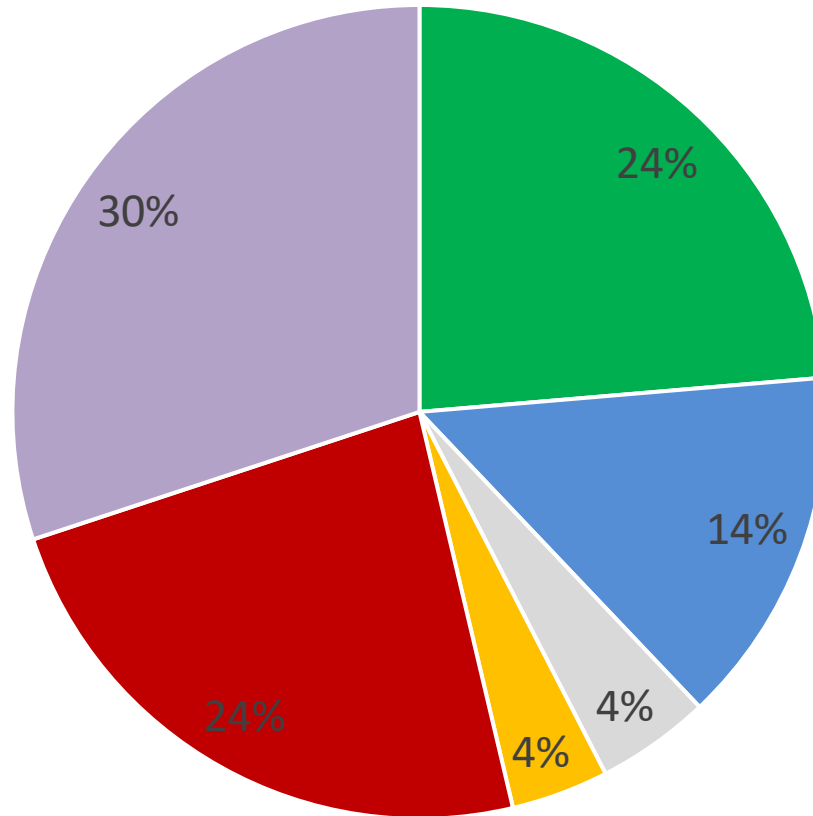


傳出中國大陸計畫於4月16~18日在台灣北方設立禁航區 (no-fly zone)。(示意圖/shutterstock 達志影像)

《路透社》引述4名知情人士指出，中國大陸計畫於4月16~18日，一共三天在台灣北方設立禁航區 (no-fly zone)，匿名人士表示，中國軍方將擾亂台灣北部的飛航情報區 (FIR)，目前尚不知實施這些限制的原因。我交通部最新指出，向中國表達抗議後，管制飛航時間已縮短為16日上午9時30分至57分 (全程27分鐘)。

<https://today.line.me/tw/v2/article/7N0qOnn>

# news reports (incursion-related)



■ green party ■ blue party ■ white party ■ yellow party ■ China friendly faction ■ Neutral point of view

news reports	green party	blue party	white party	yellow party	China friendly faction	Neutral point of view
346532	81970	49407	15686	13409	81849	104211