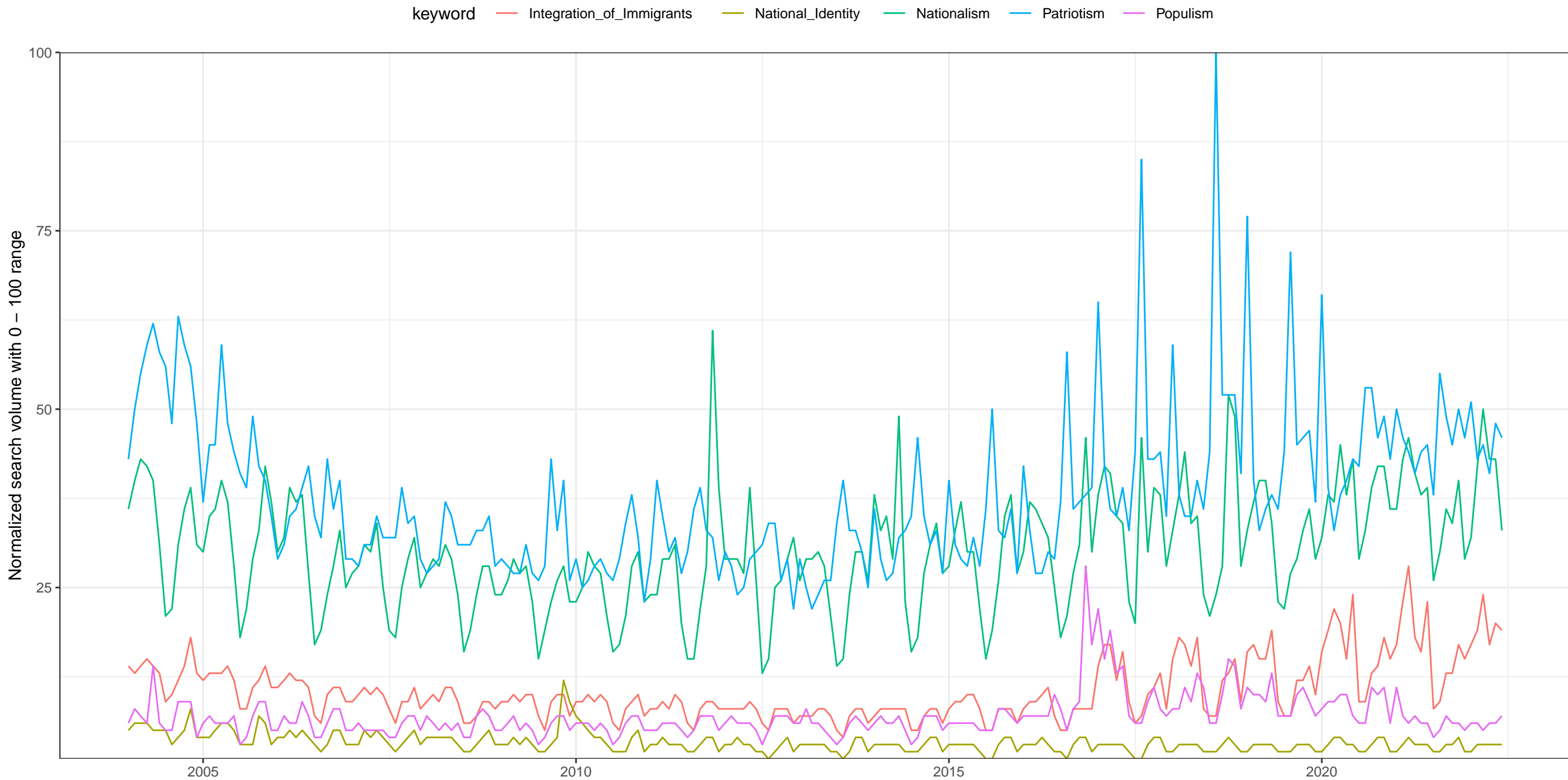


Global public interest
by search TOPIC



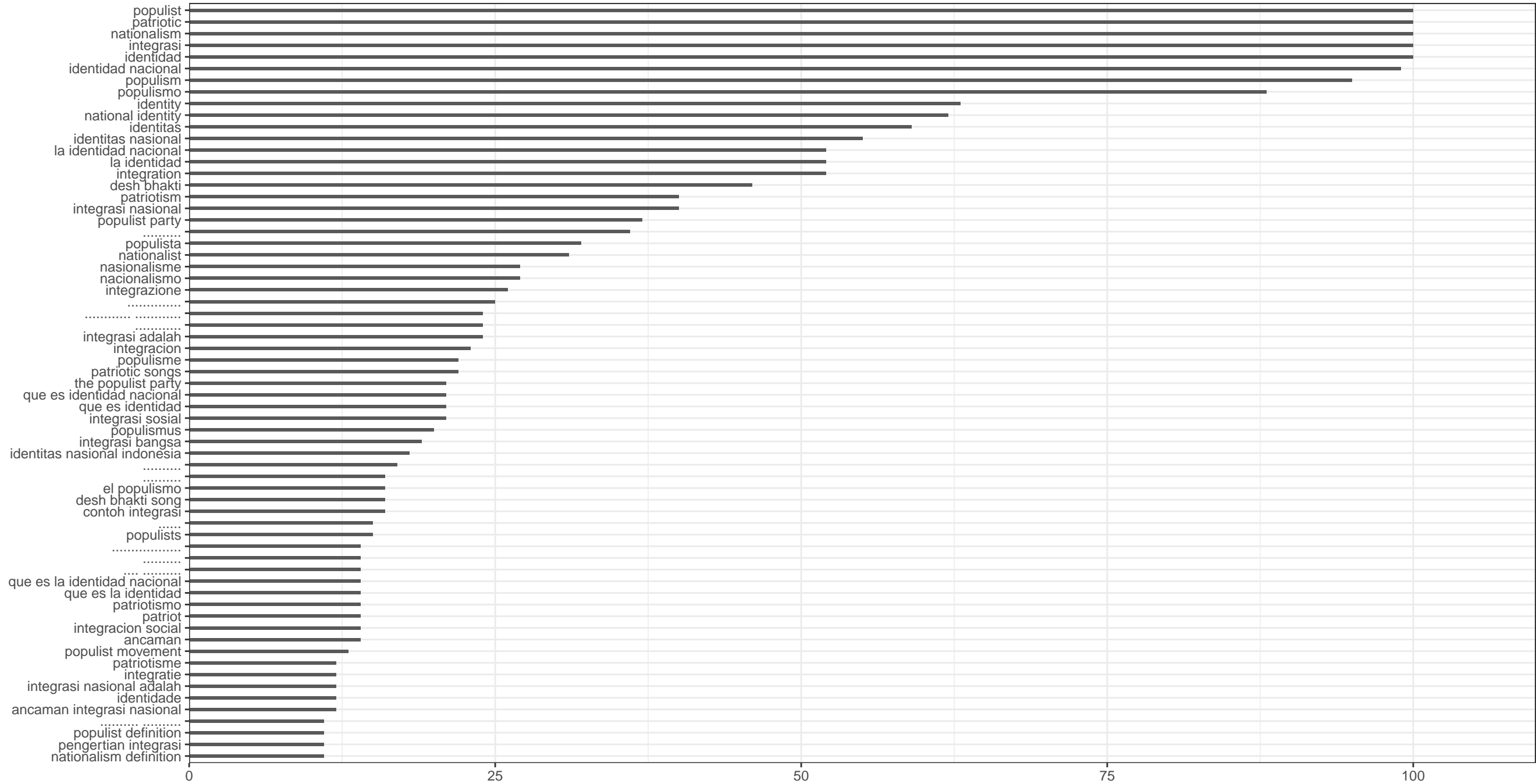
Google offers topics – a group of already clustered search terms that share the same concept or entity.

These topics are language agnostic & account for spelling variations & mistakes.

see <https://blog.google/products/search/15-tips-getting-most-out-google-trends/>

Google Topics -- Example related search queries

Topics are nationalism, patriotism, national identity, populism, integration of immigrants



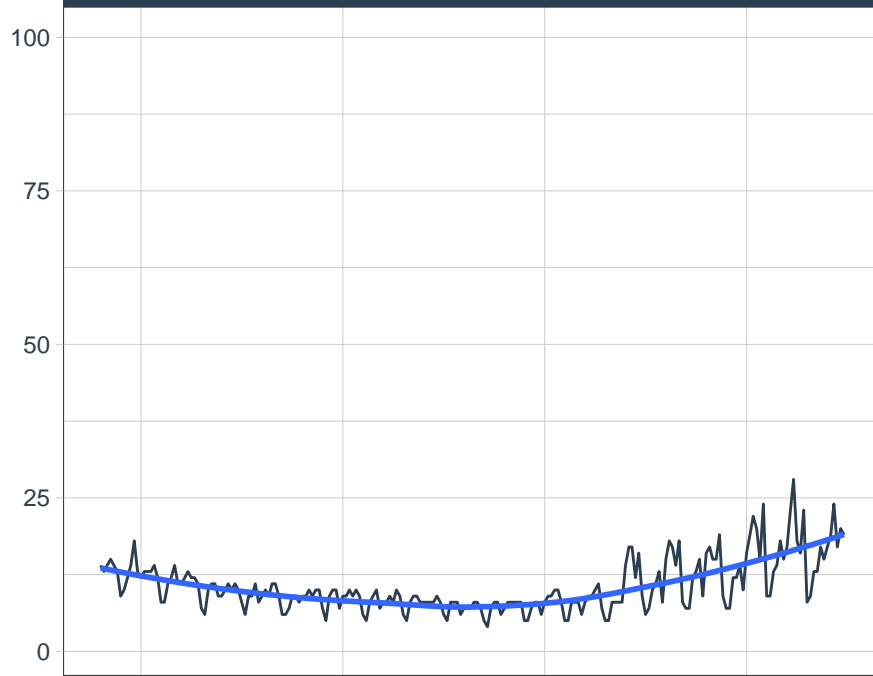
Google offers topics – a group of already clustered search terms that share the same concept or entity.

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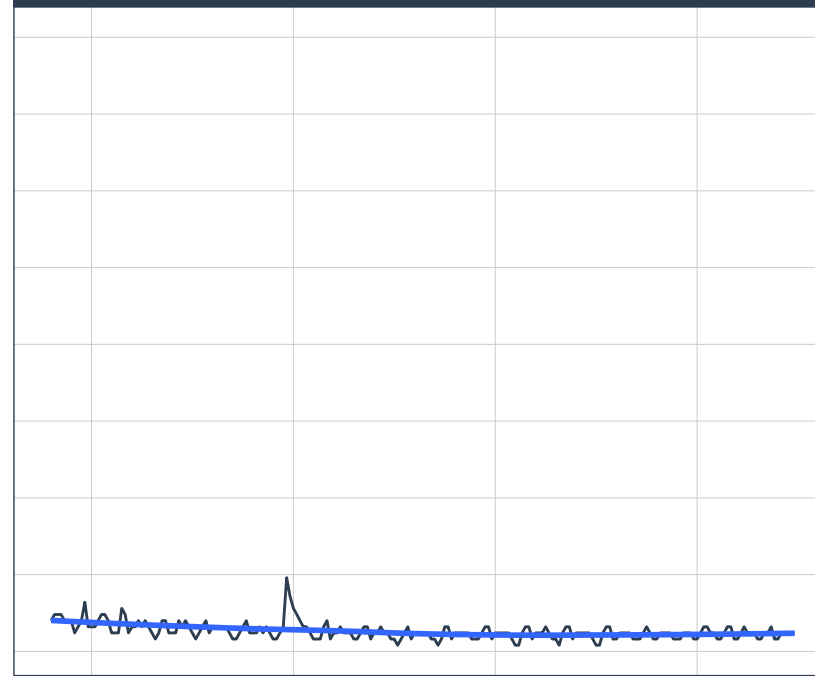
see <https://blog.google/products/search/15-tips-getting-most-out-google-trends/>

Global public interest by search topic with trend lines

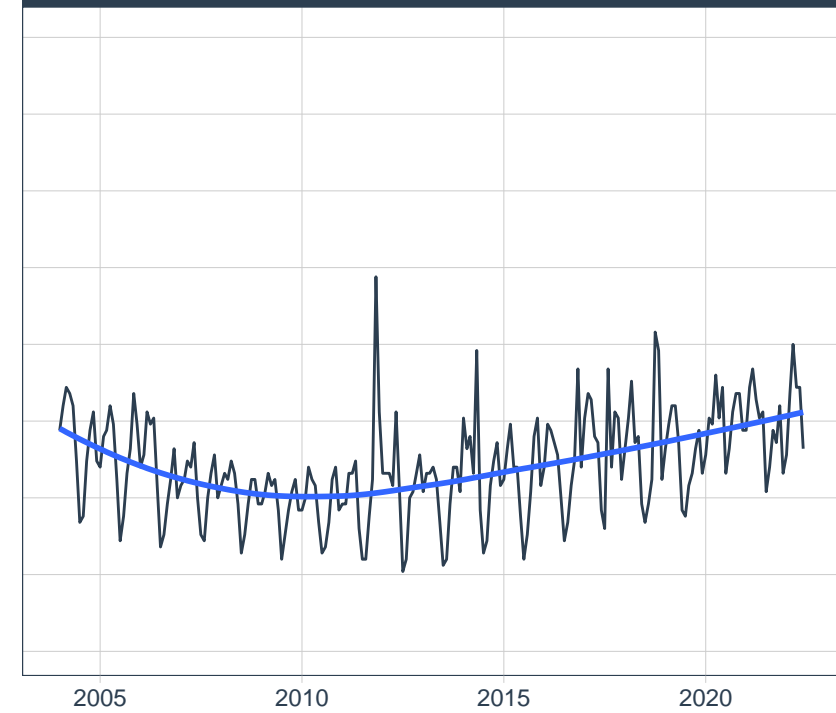
Integration_of_Immigrants



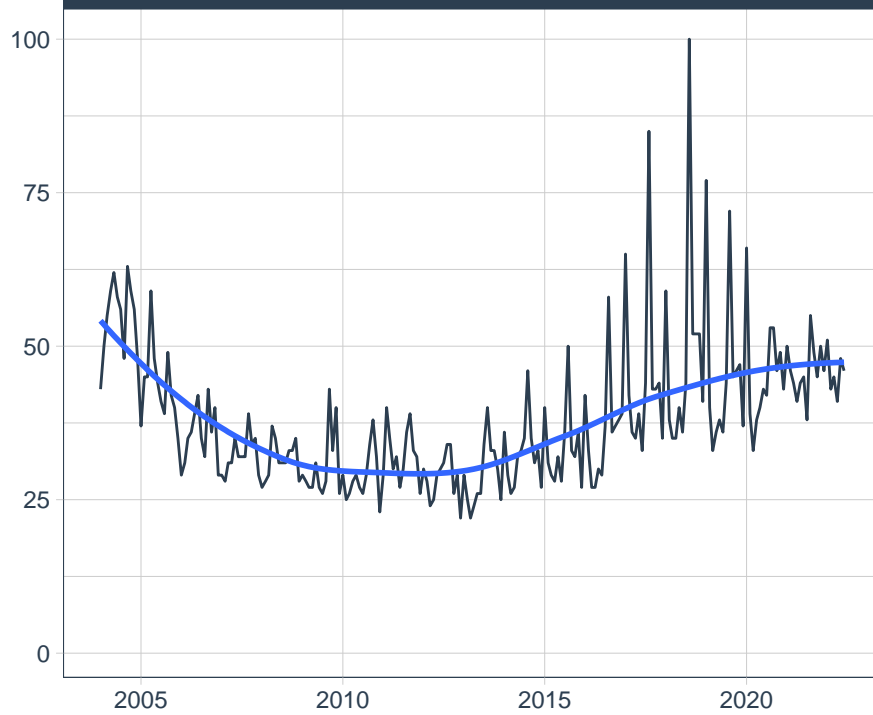
National_Identity



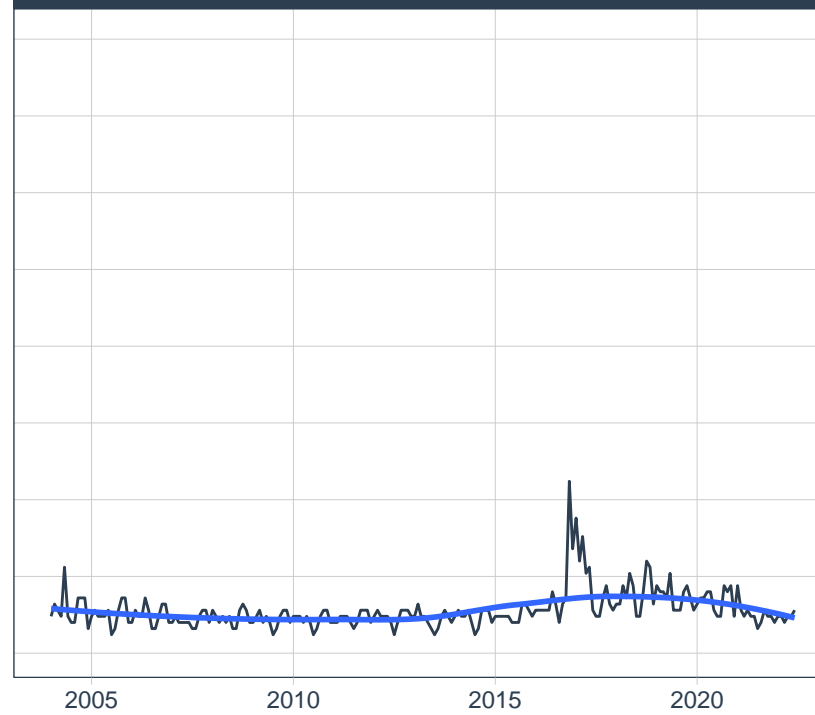
Nationalism



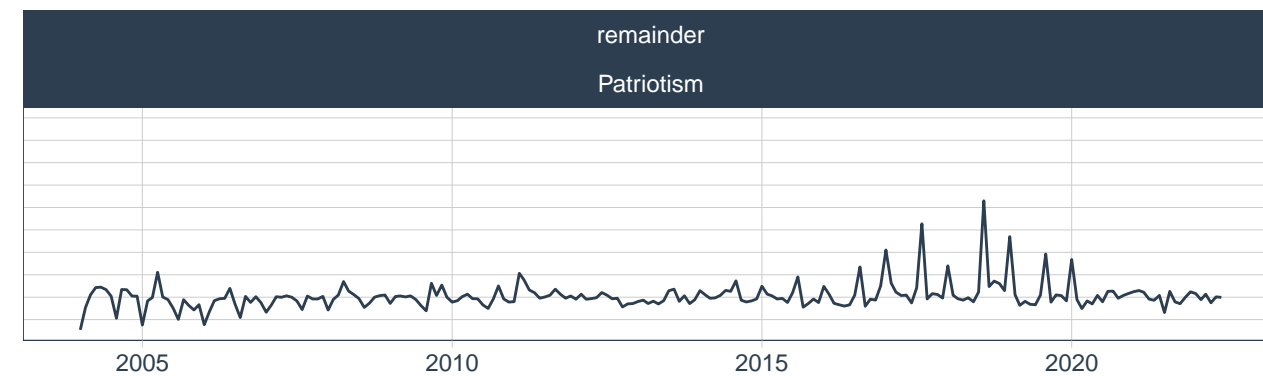
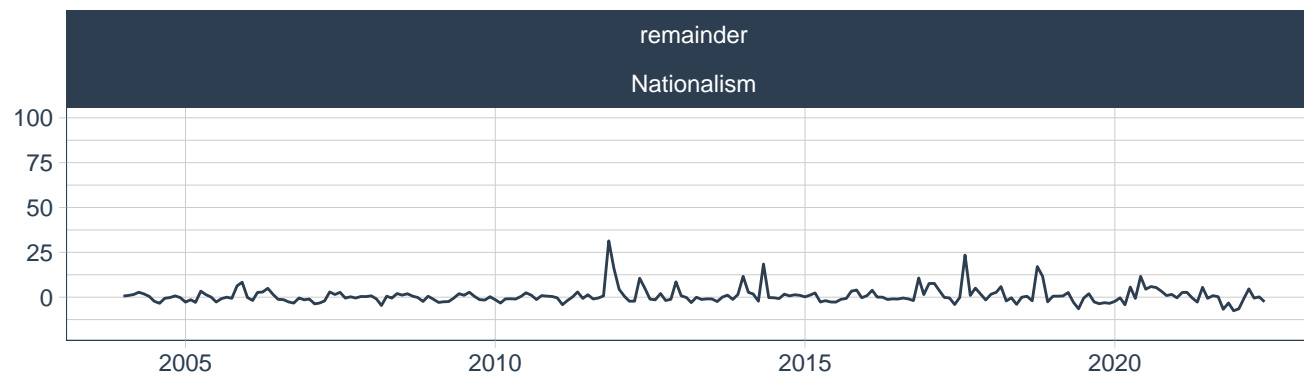
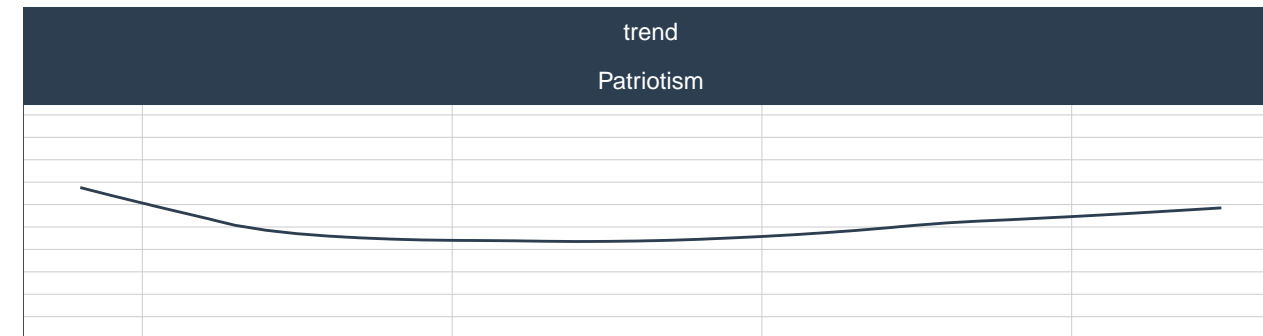
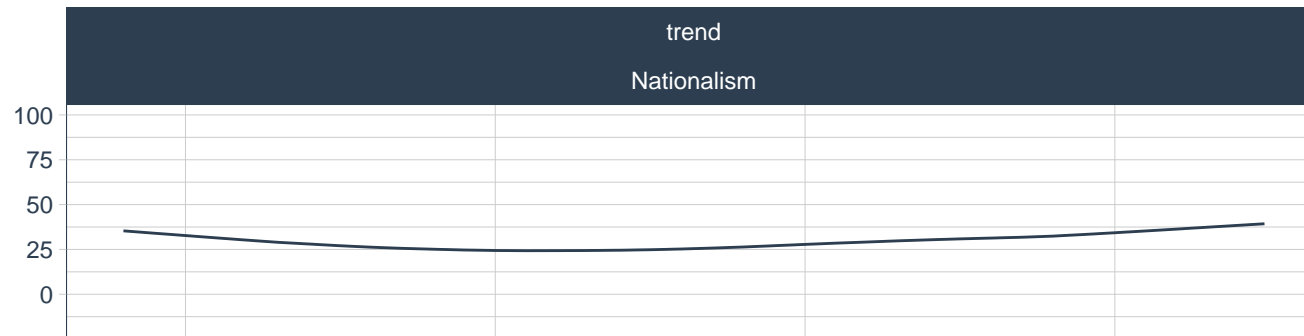
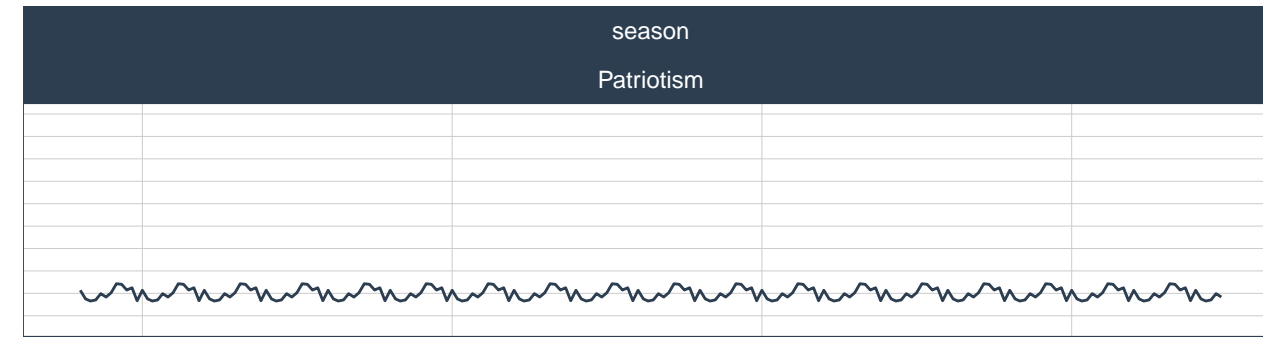
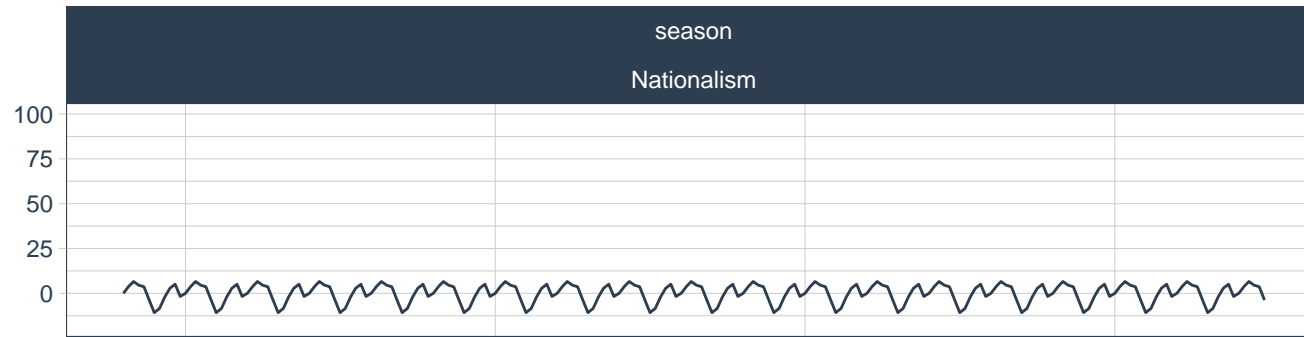
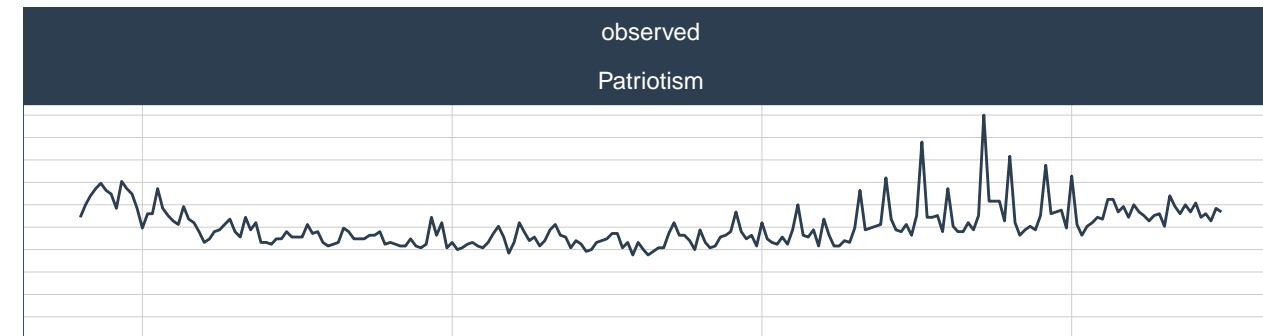
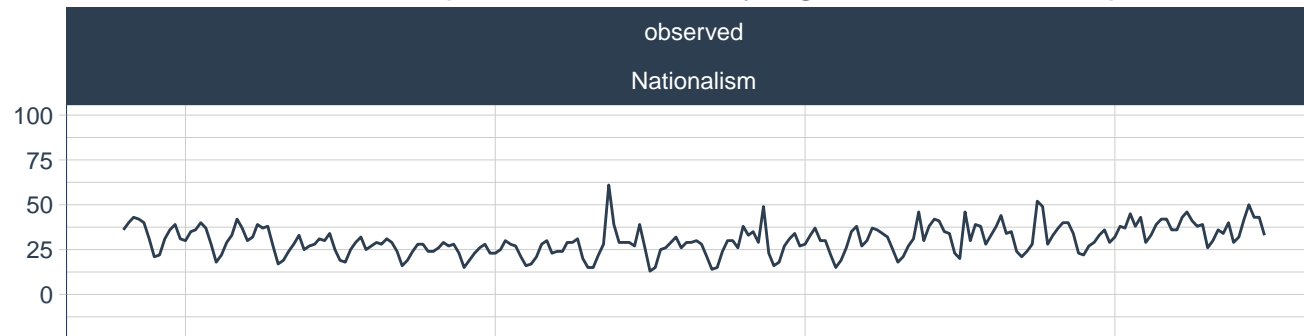
Patriotism



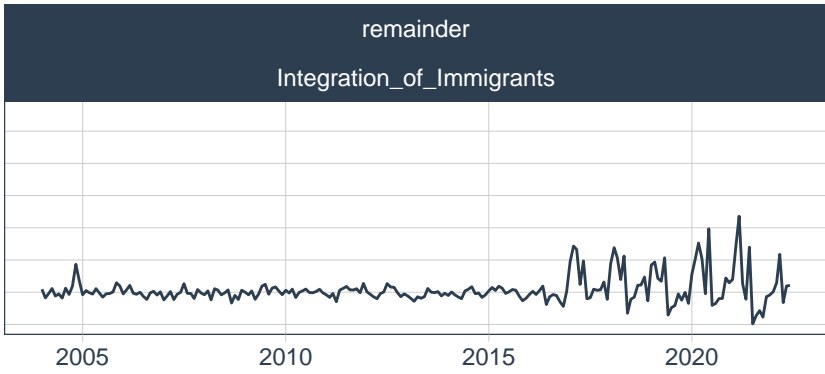
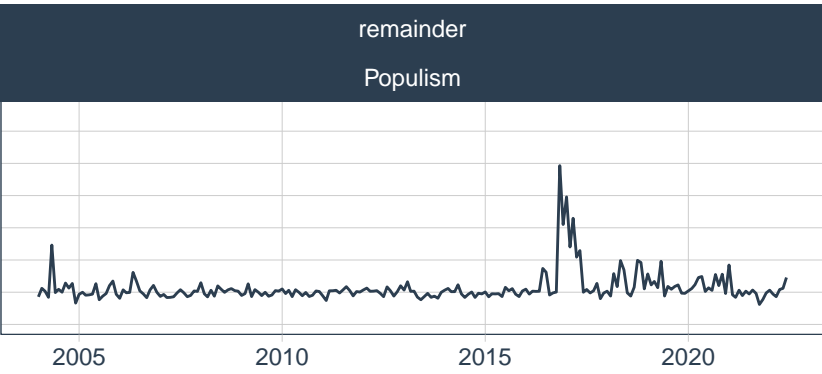
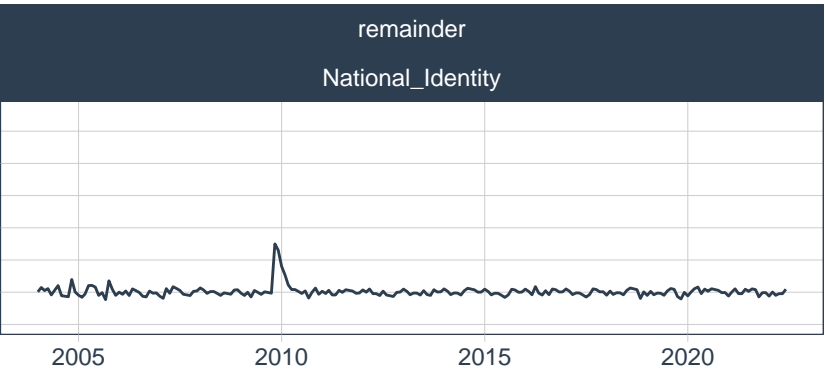
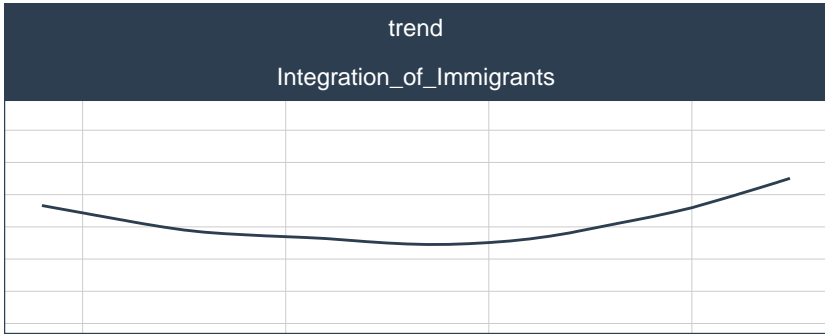
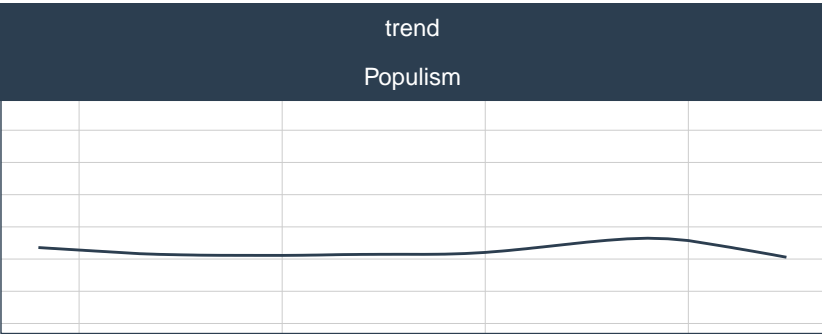
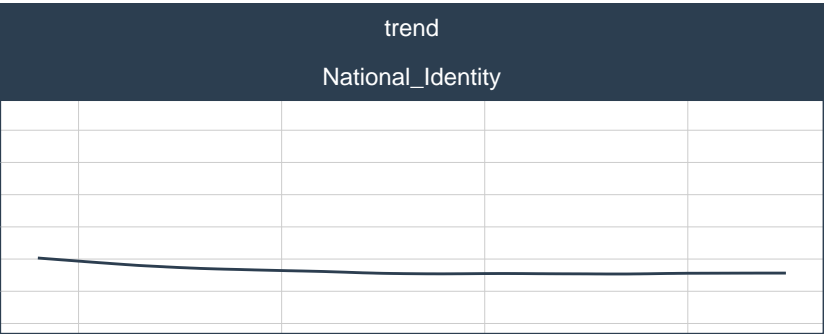
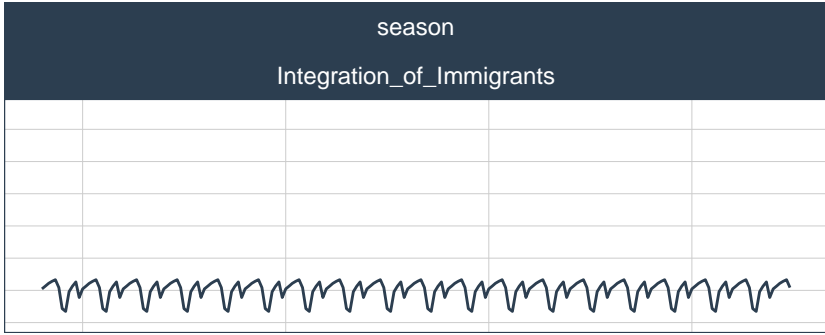
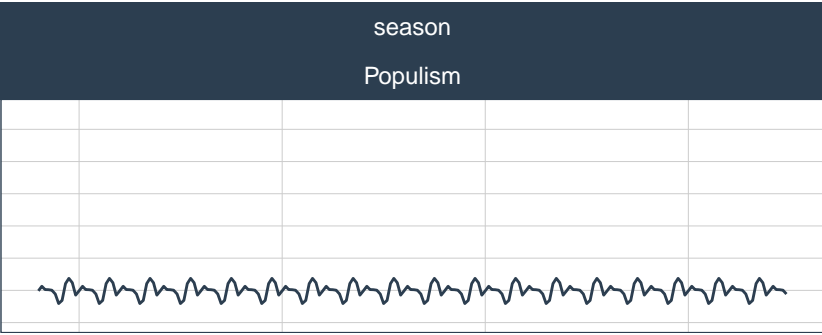
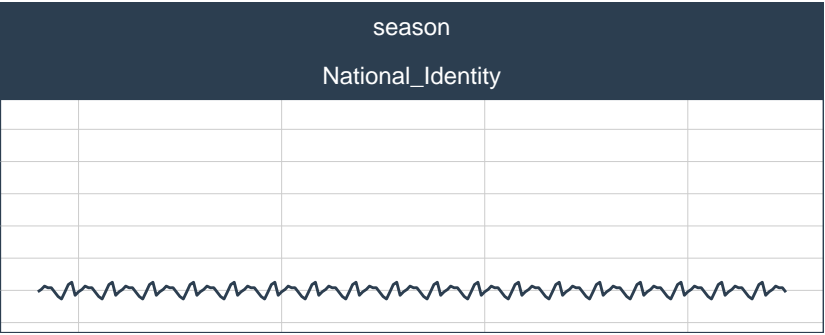
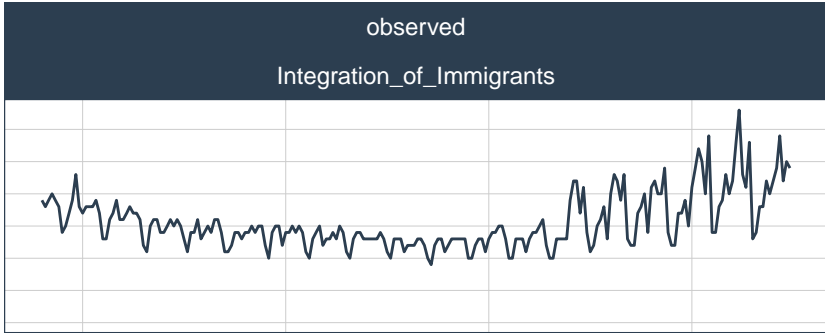
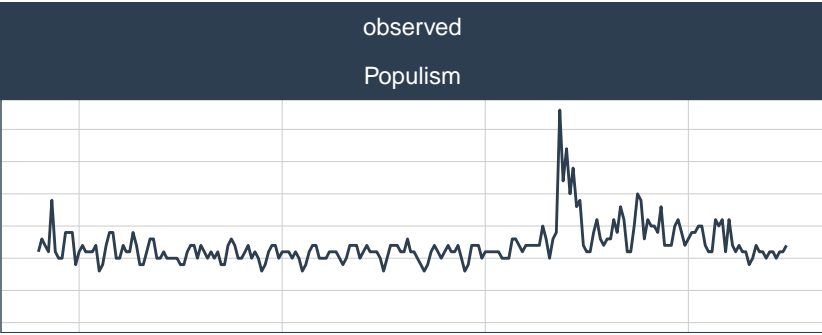
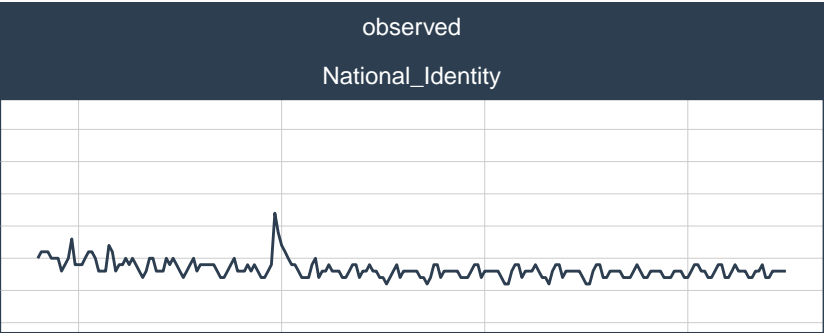
Populism



Seasonal & trend decomposition for relatively high search volume topics

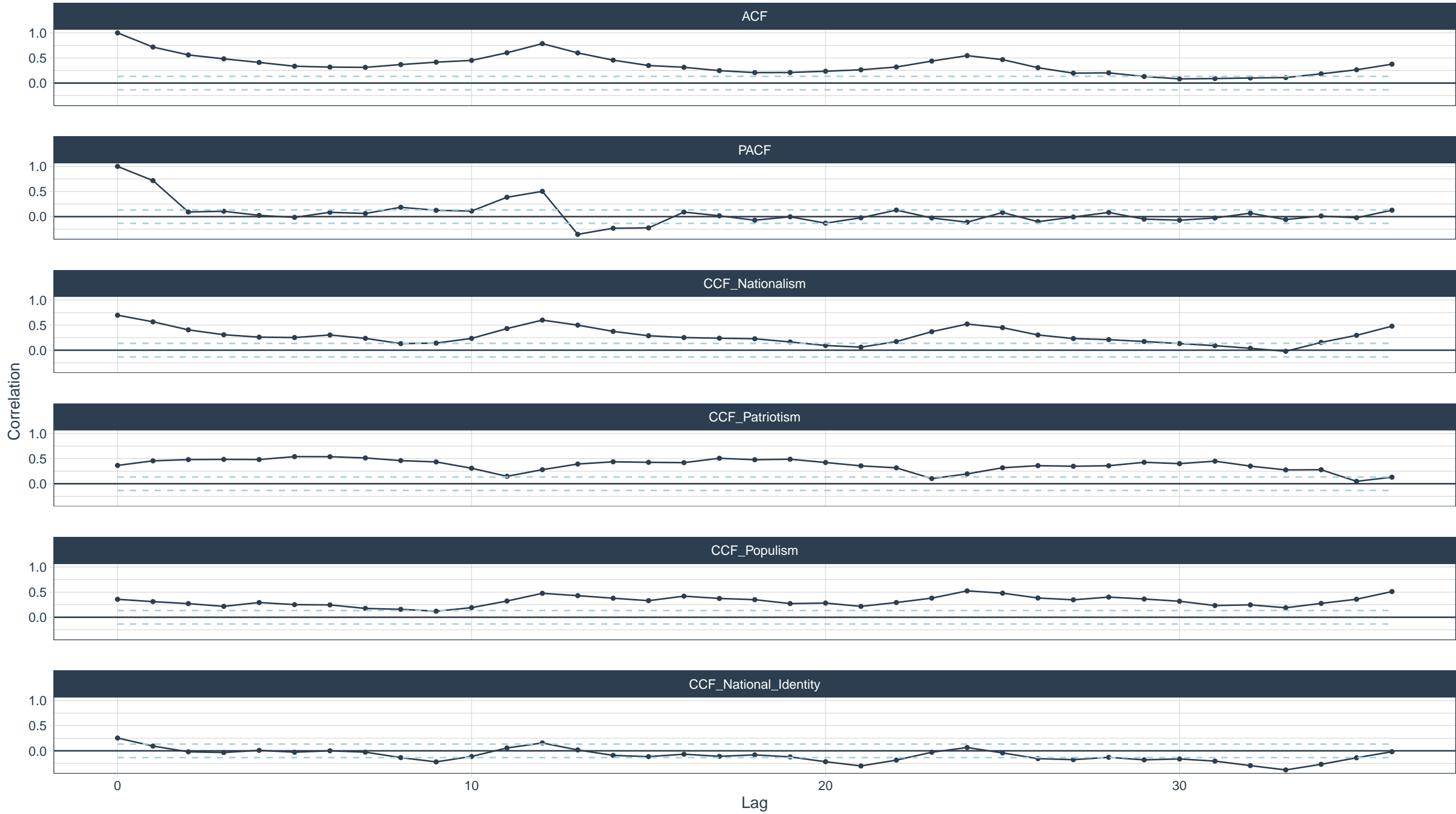


Seasonal & trend decomposition for relatively low search volume topics



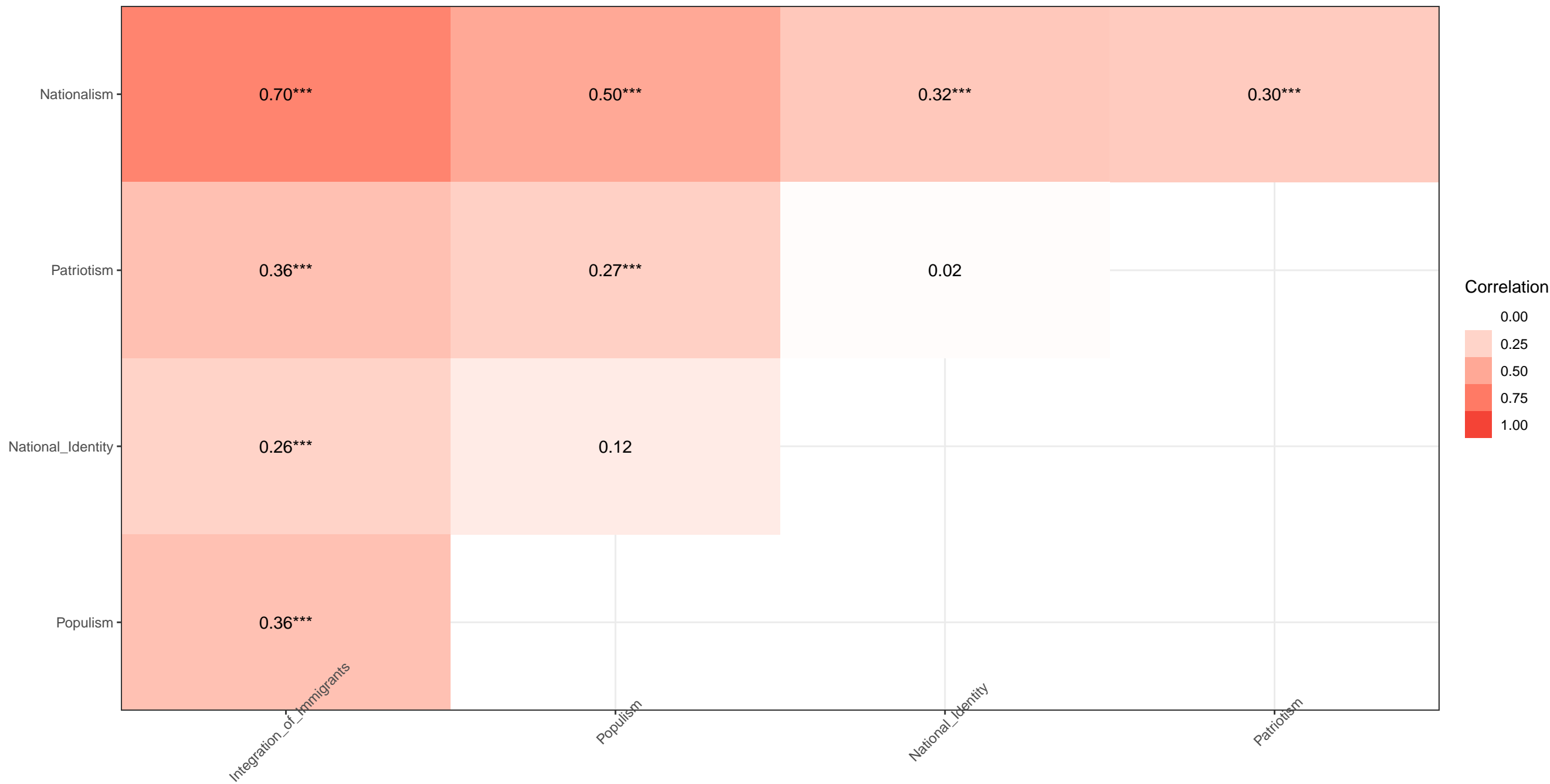
Lag diagnostics for Integration of Immigrants

with Natioanism, Patriotism, Populism & National Identity as the cross correlation function variables



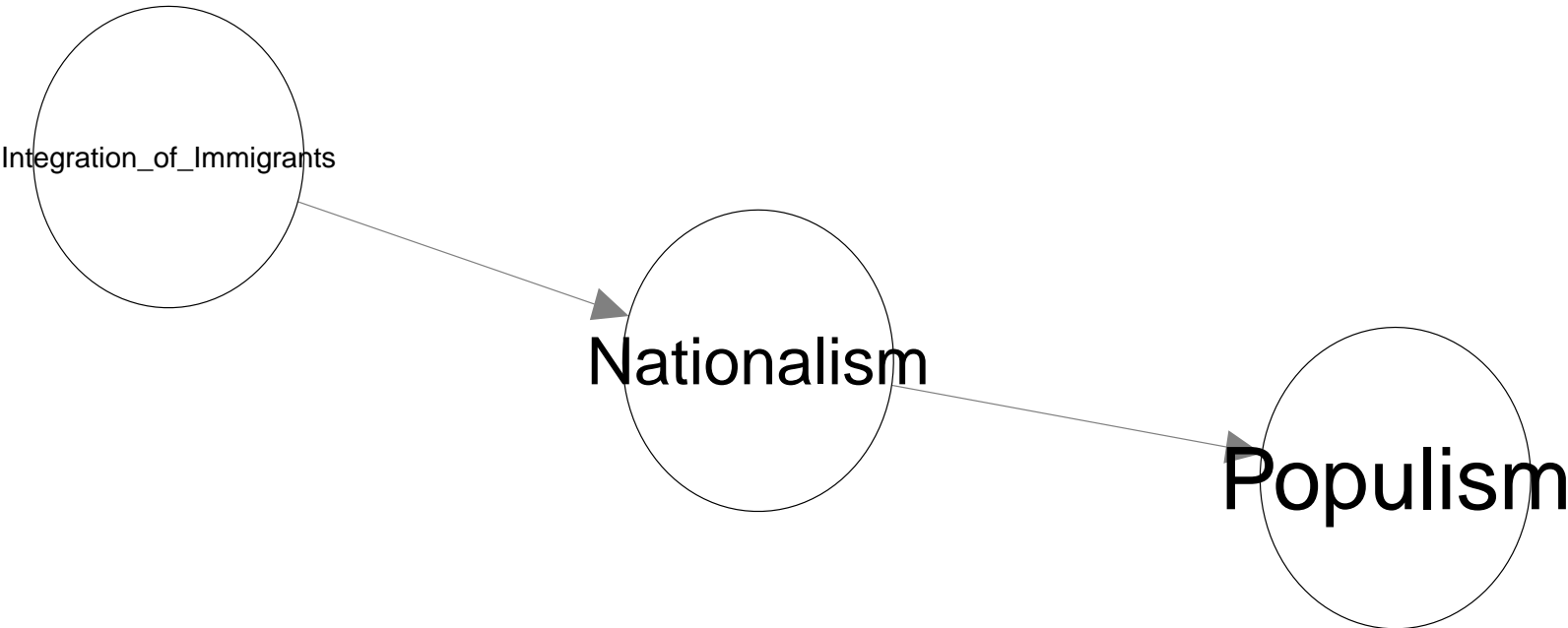
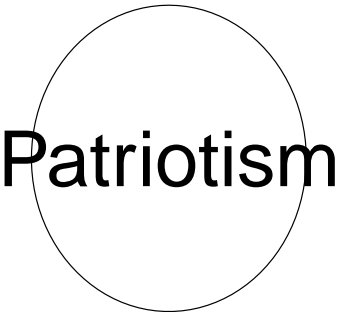
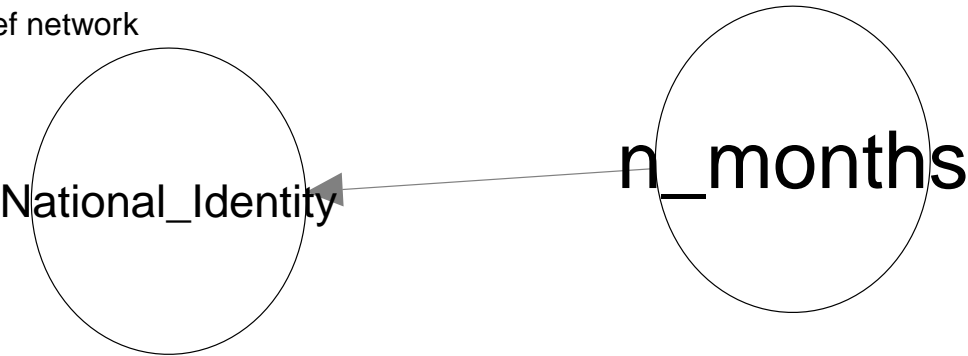
Correlations across Search Volume

Used Google Topics are Integration of Immigrants, Nationalism, Patriotism, Populism, National Identity



Google Topics are used as a proxy for public interest

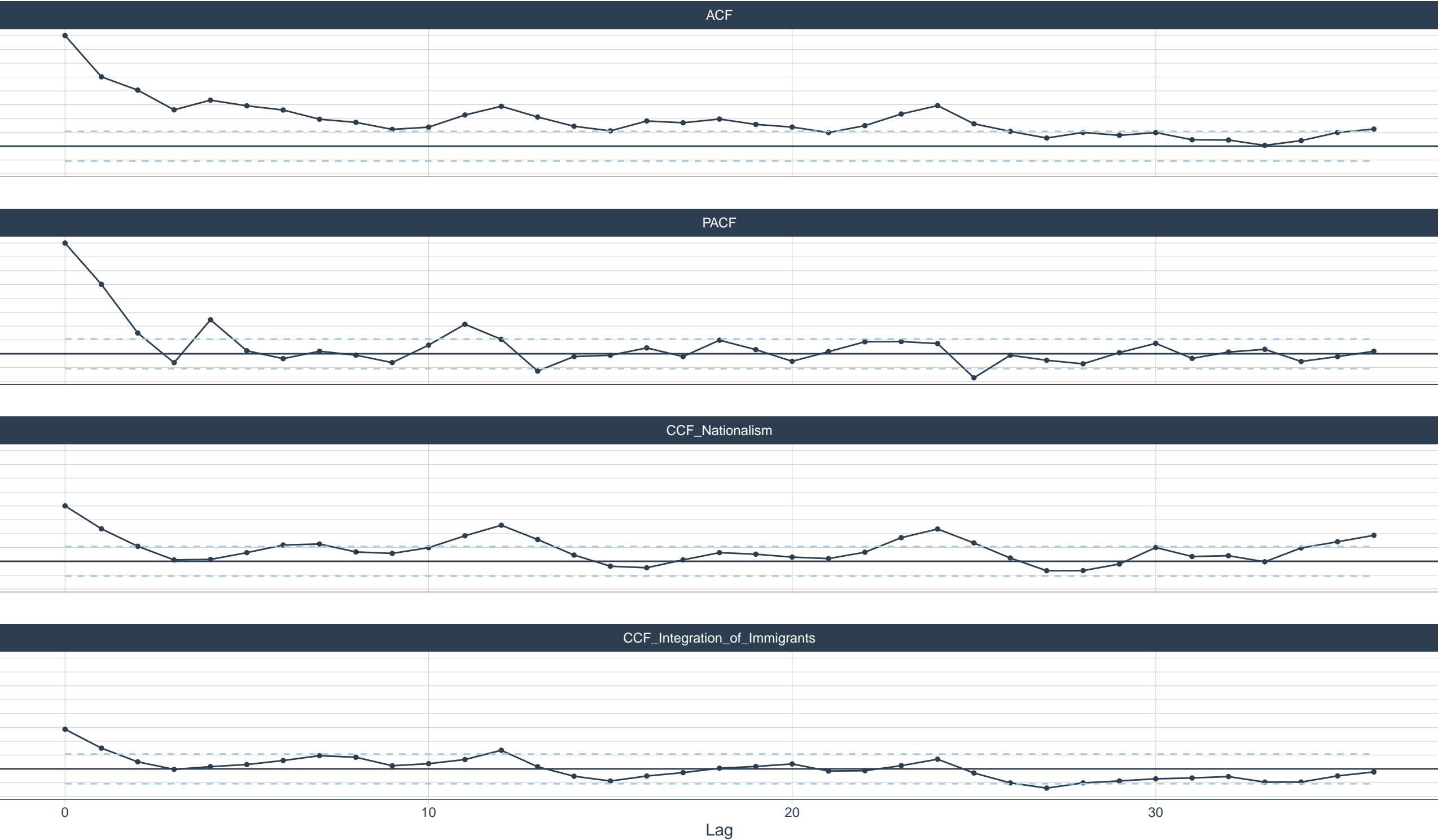
See: <https://blog.google/products/search/15-tips-getting-most-out-google-trends/> to find out more about Google Topics



1. time passed determines public interest in national identity 2. public interest in integration of immigrants determines public interest in nationalism, which in turn determines interest in populism

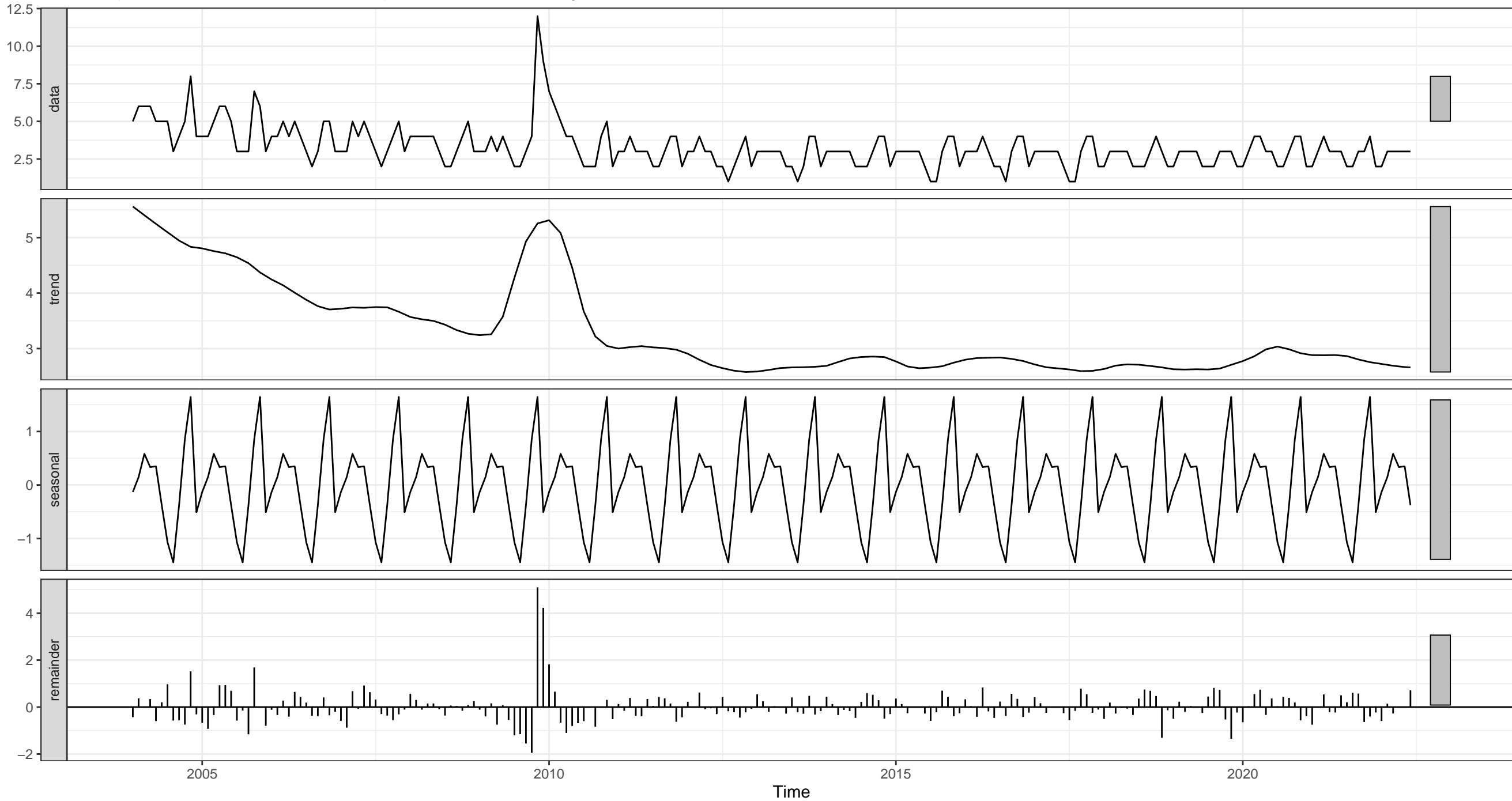
Lag diagnostics for Populism

with Nationalism & Integration of Immigrants as the cross correlation function variables



Global public interest in national identity over time

decomposed univariate time series with repeated LOESS smoothing

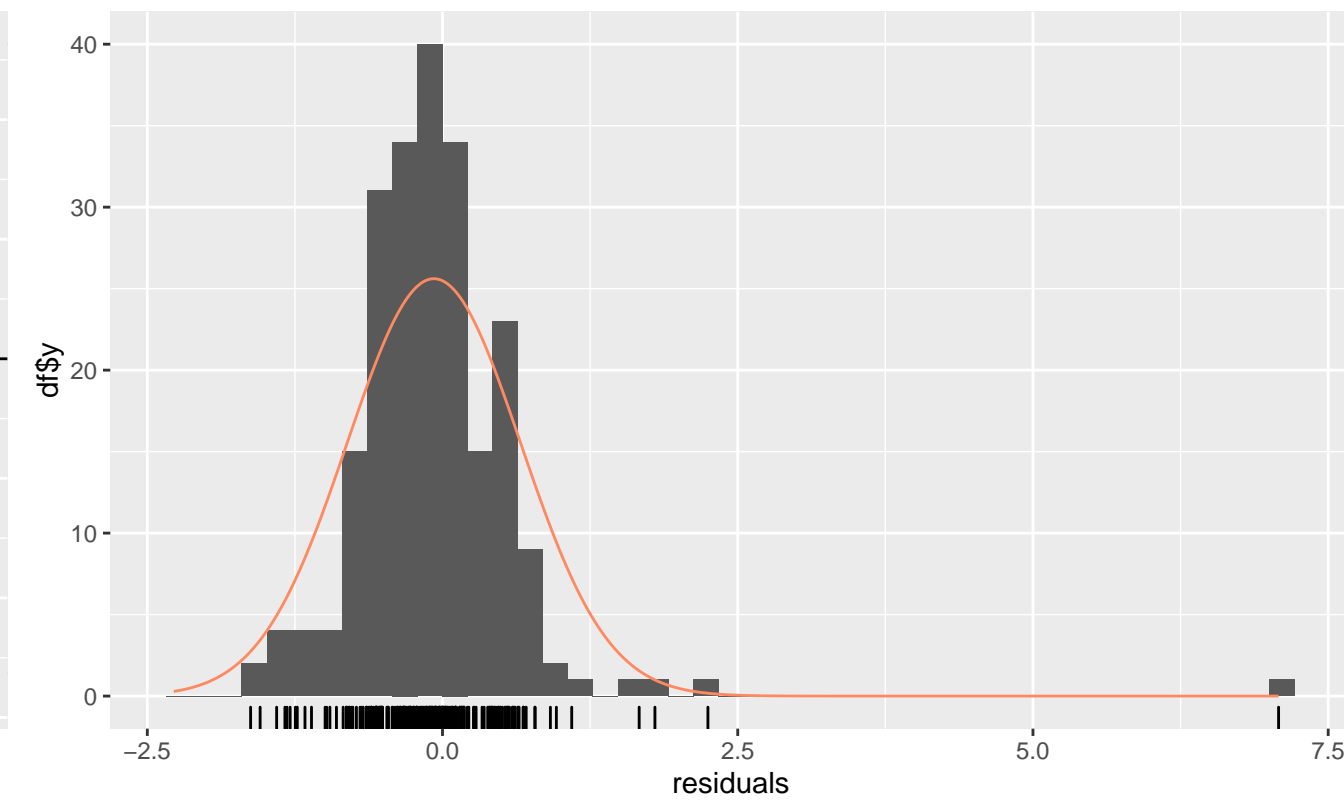
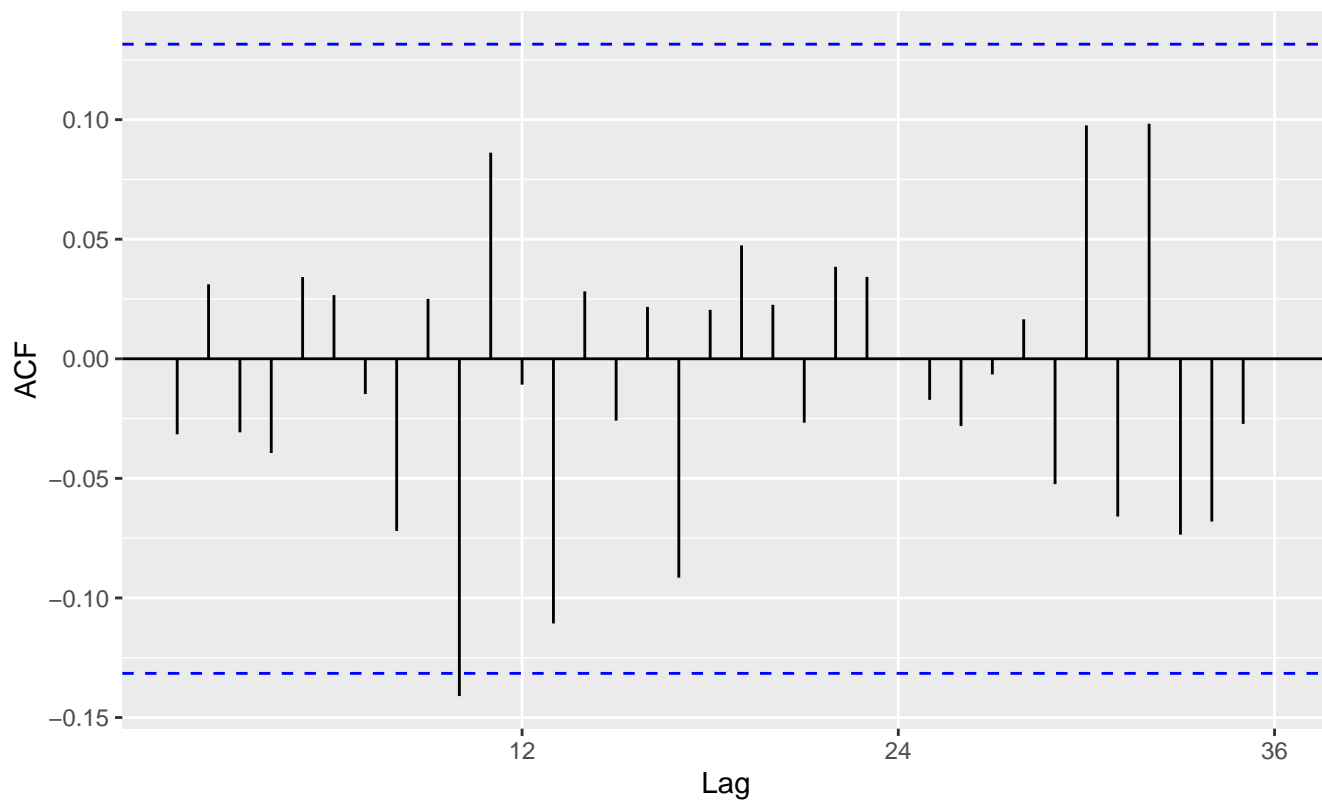
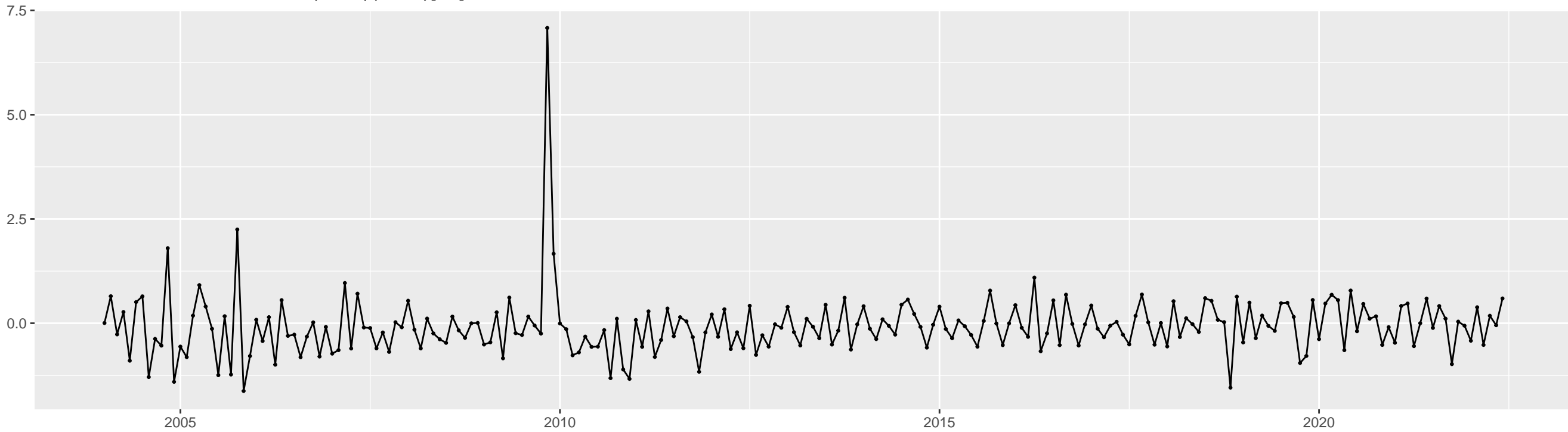


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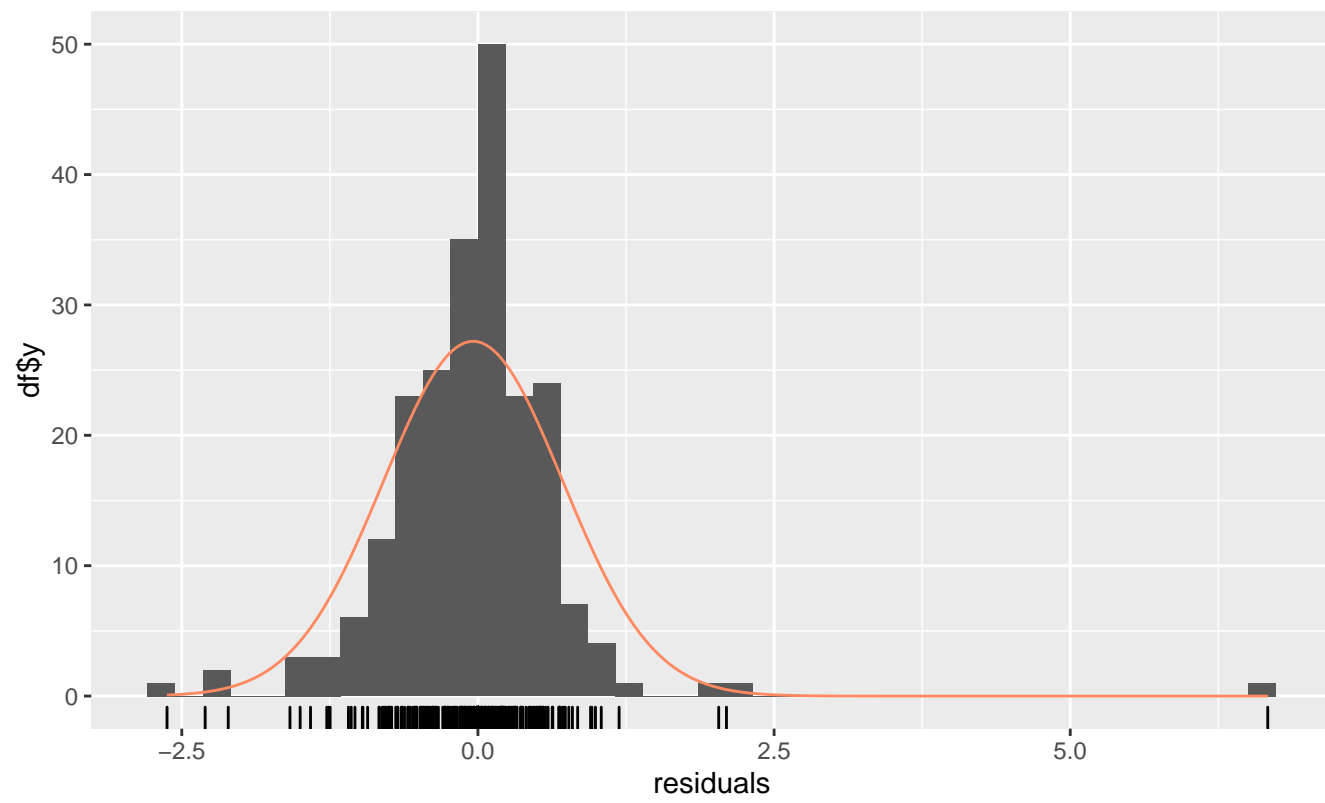
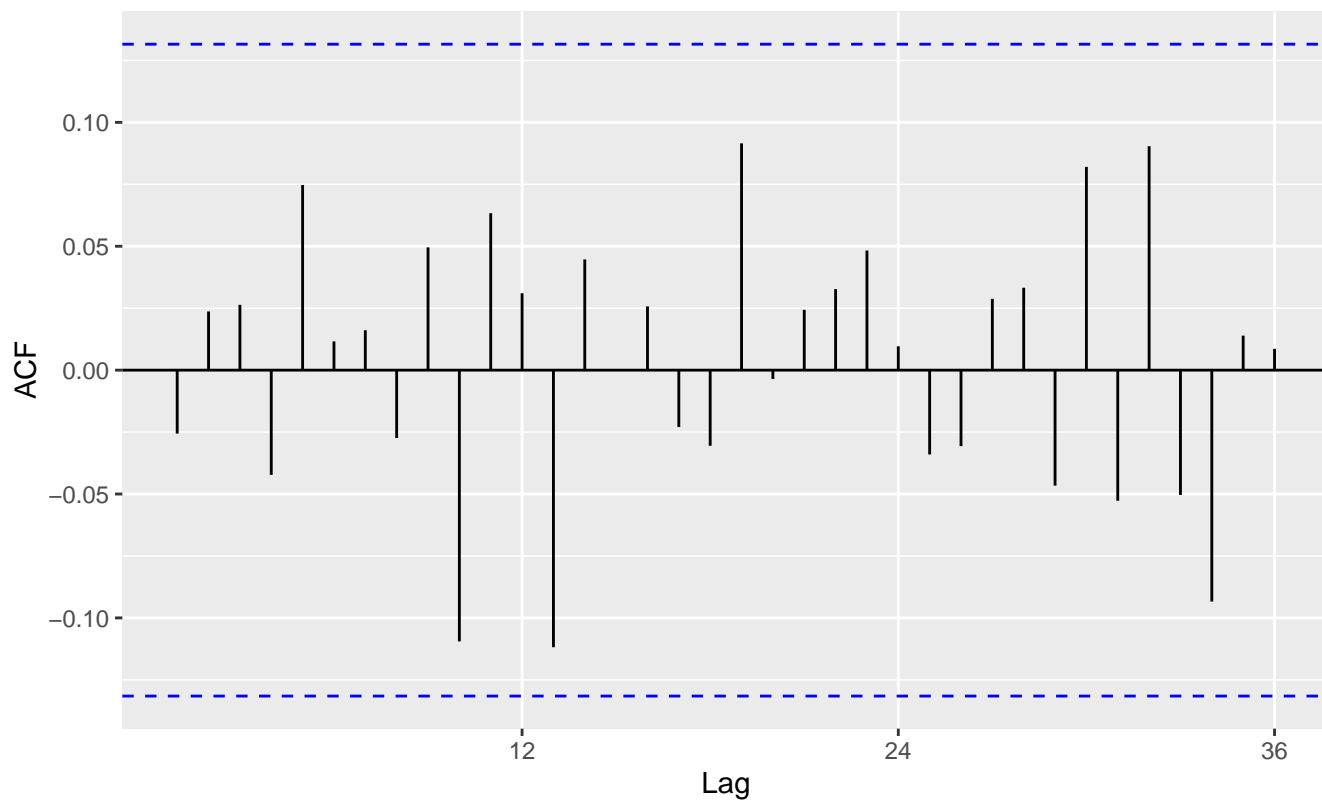
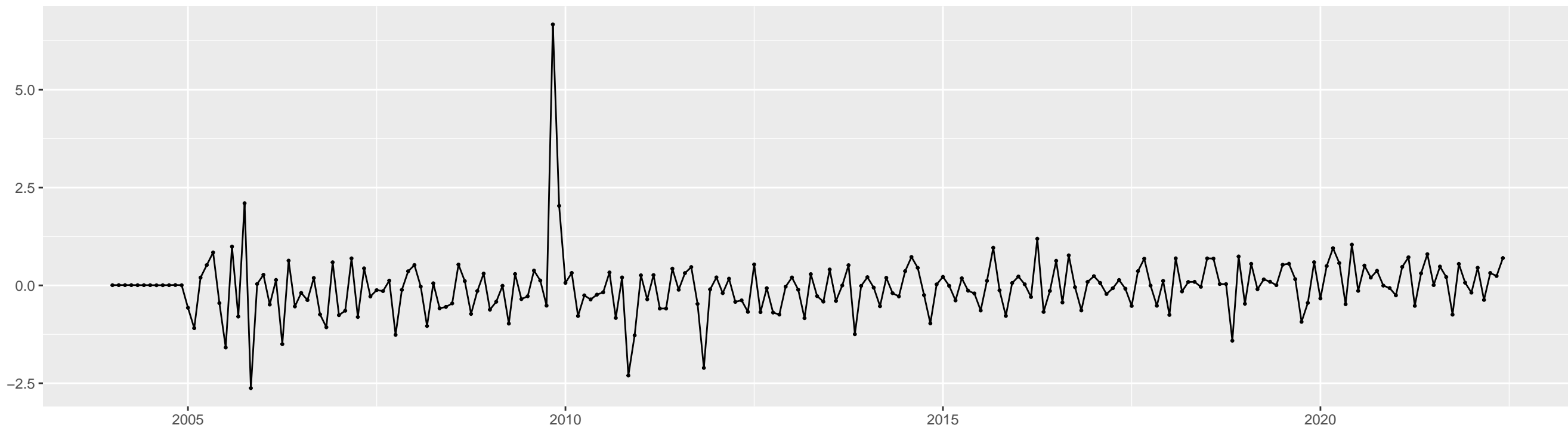
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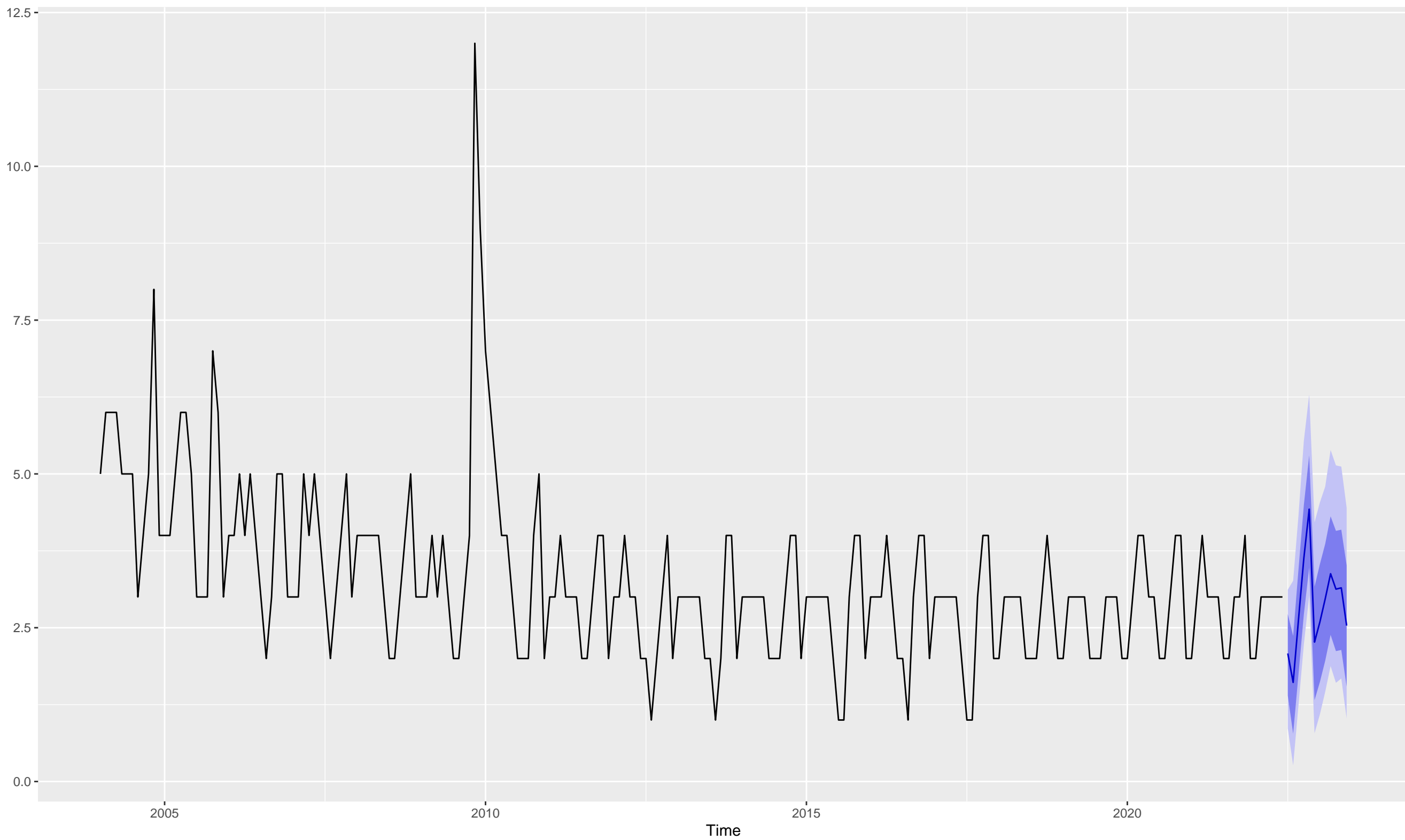
Residuals from STL + ARIMA(2,1,2)(2,0,0)[12]



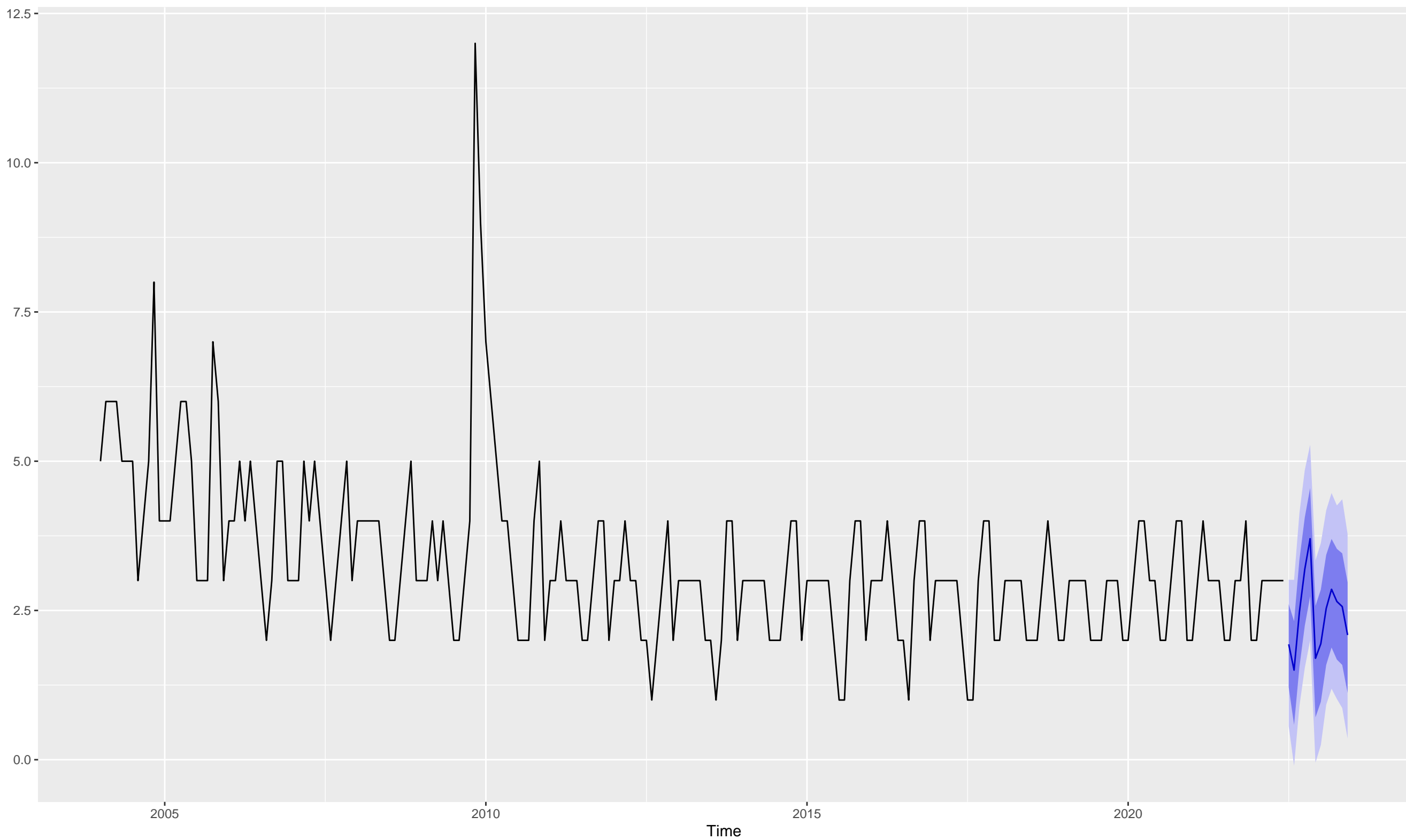
Residuals from ARIMA(1,0,0)(2,1,1)[12] with drift



Forecasts from STL + ARIMA(2,1,2)(2,0,0)[12]



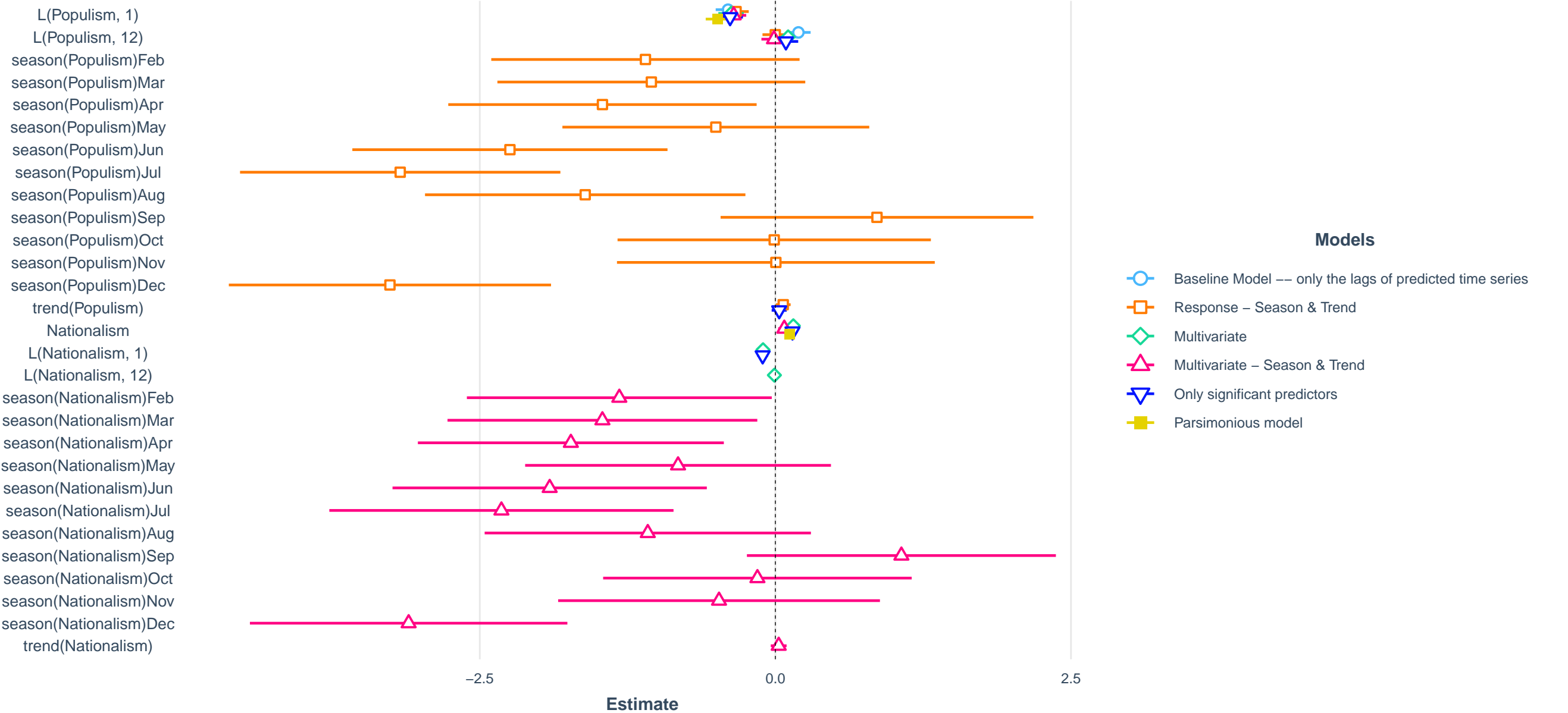
Forecasts from ARIMA(1,0,0)(2,1,1)[12] with drift



Dynamic linear models for time series

Time Series Regression | Start: 2004-01-01 – End: 2022-05-29

Adjusted R-squared: 22 % for the baseline model; 30 % for the selected parsimonious model; all other models range between 36-39 %



Data Source: Google Trends

All time series are are Google topics and reflect relative search volumes, which are proxies for public interest to the topics

See <https://blog.google/products/search/15-tips-getting-most-out-google-trends> for more info

L(, #) L stands for lag; # is the lagged number of months of the times series in the models

Forecast plot of 3 models

Search volume: public interest in national identity worldwide

Relative Range is 0–100

12
8
4
0

2005

2010

2015

2020

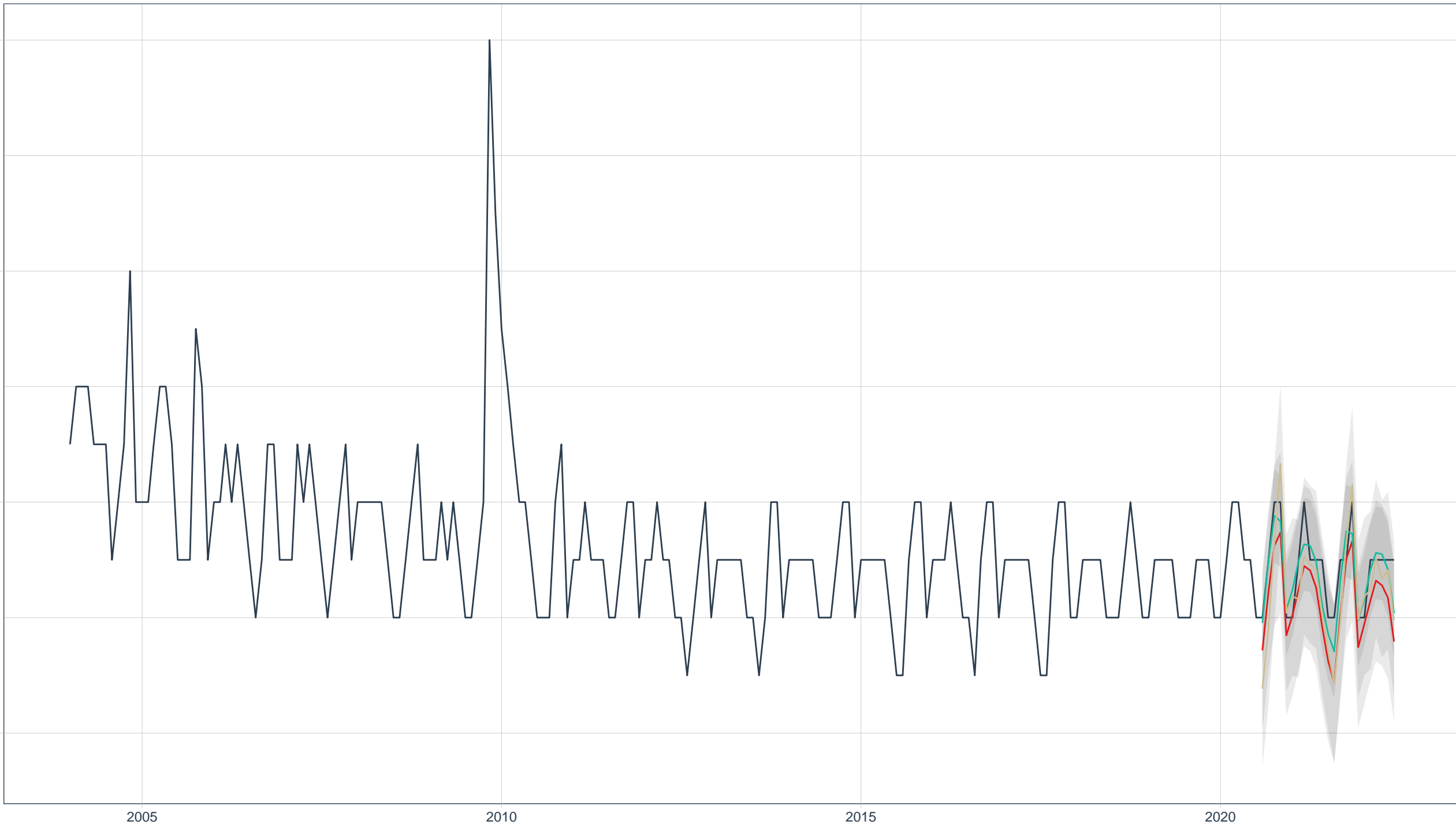
Legend

— ACTUAL

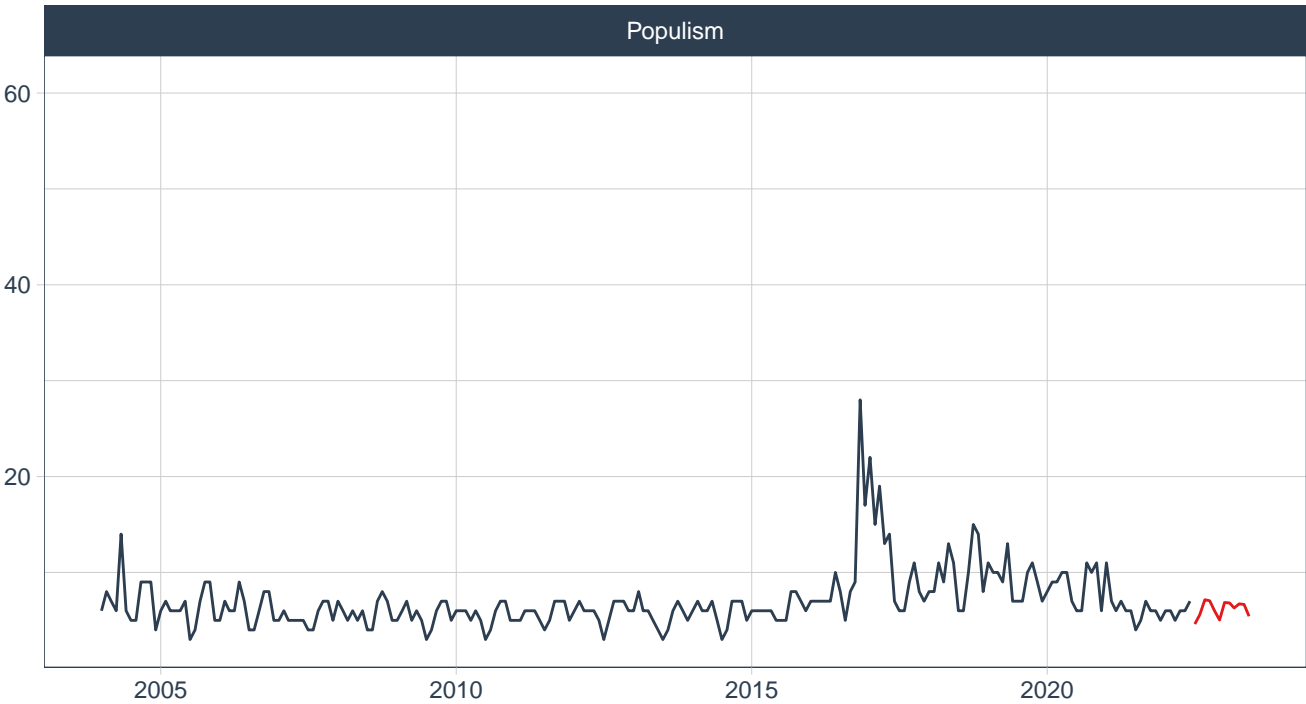
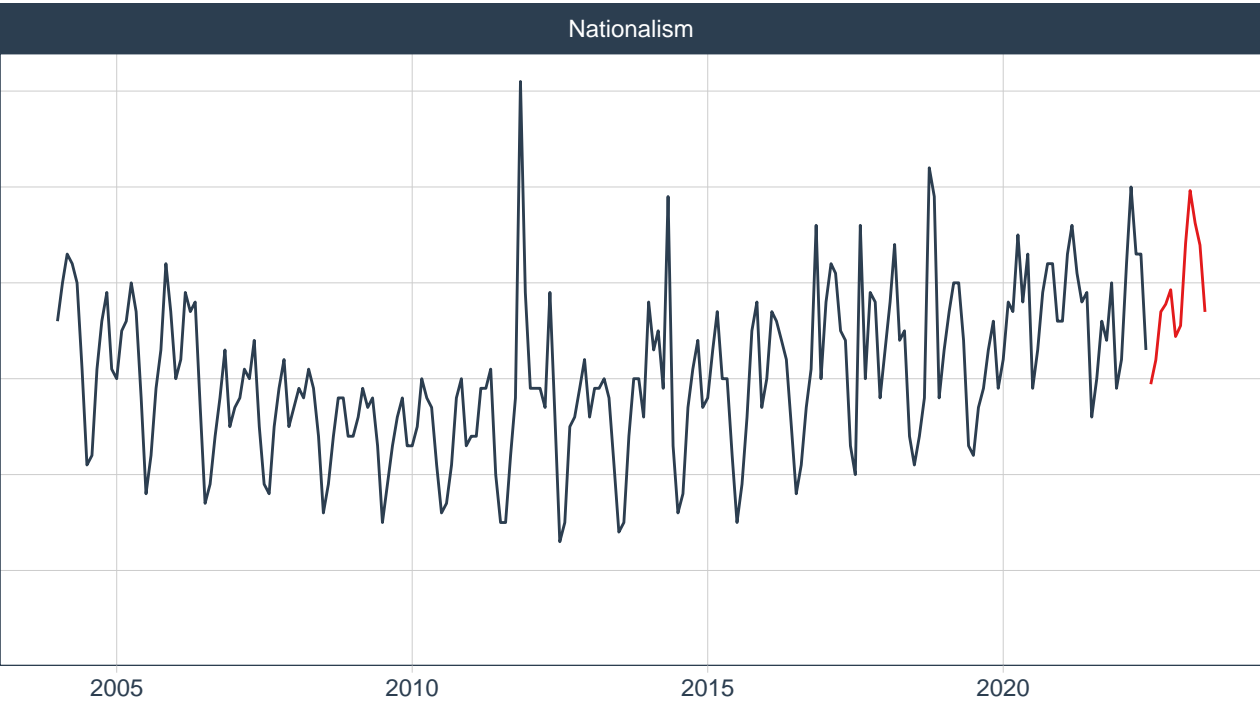
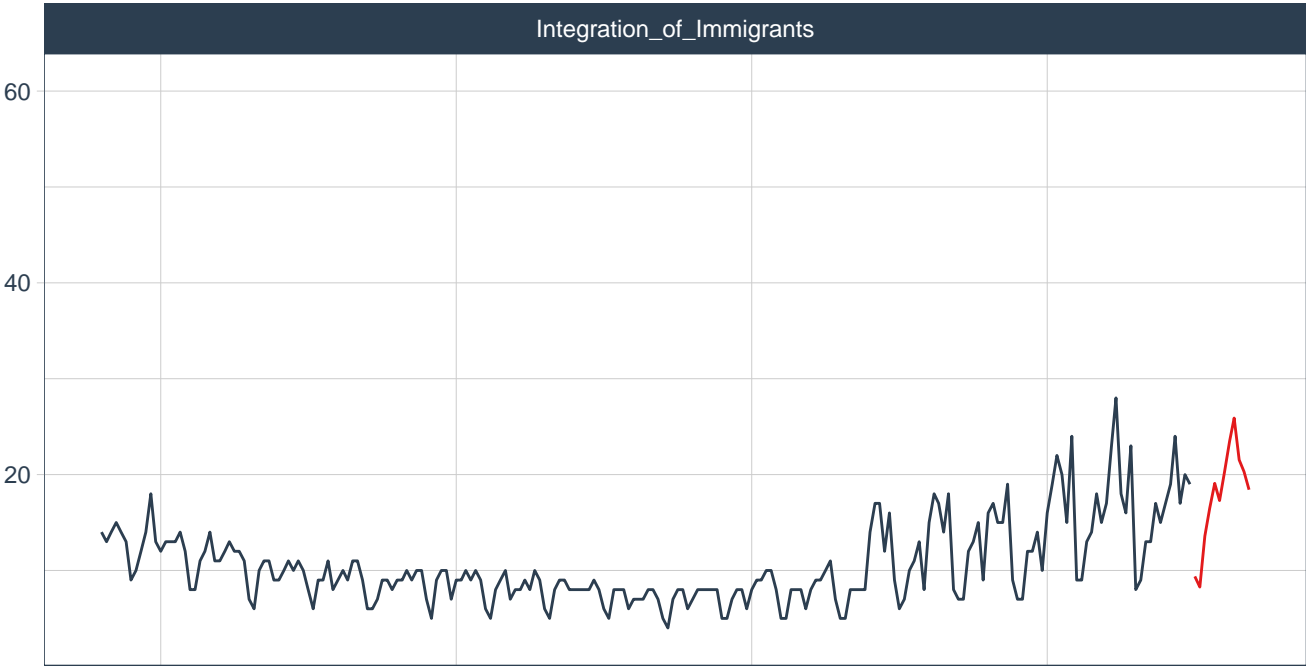
— 1_ARIMA(1,0,0)(2,1,1)[12] WITH DRIFT

— 2_ARIMA(1,0,0)(0,1,1)[12] WITH DRIFT ...

— 3_PROPHET



Forecast plot multivariate time series with deep learning



Legend — ACTUAL — 1_DEEPAR