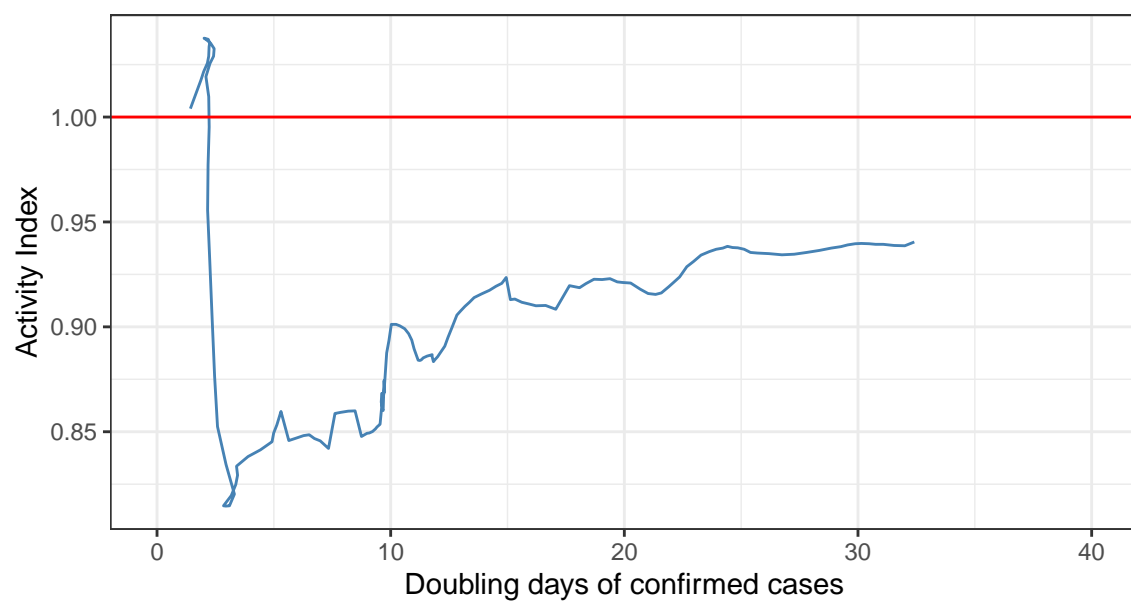


## Atividade x COVID

### Brasil



## Usando dados de mobilidade e energia

Utilizamos os dados de mobilidade do Google para montar o índice de atividade, de forma que:

$$\text{Atividade} = 0.3886 \cdot \text{Mobilidade} + 0.61$$

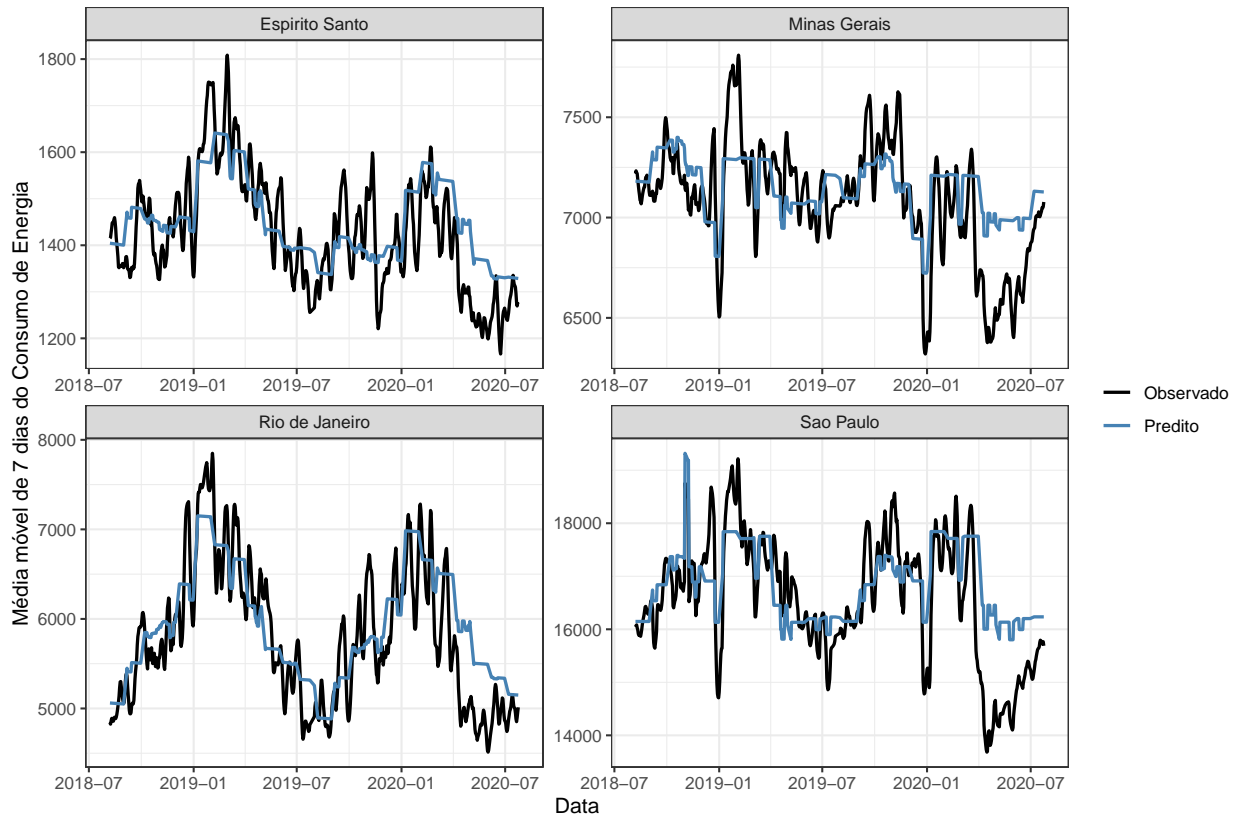
Para definir o contrafactual nos dados de energia, fazemos uma regressão para cada estado e ramo de atividade, com os dados de 08/2018 até 02/2020, da seguinte forma:

$$\begin{aligned} \text{Consumo Diário}_t = & \beta_0 + \sum_{i=2}^{12} \delta_i D_{\text{mês}_{it}} + \sum_{i=2}^7 \lambda_i D_{\text{dia da semana}_{it}} + \\ & + \sum_{i=2}^k \theta_i D_{\text{feriado}_{it}} + \phi t + \epsilon_t \end{aligned} \quad (1)$$

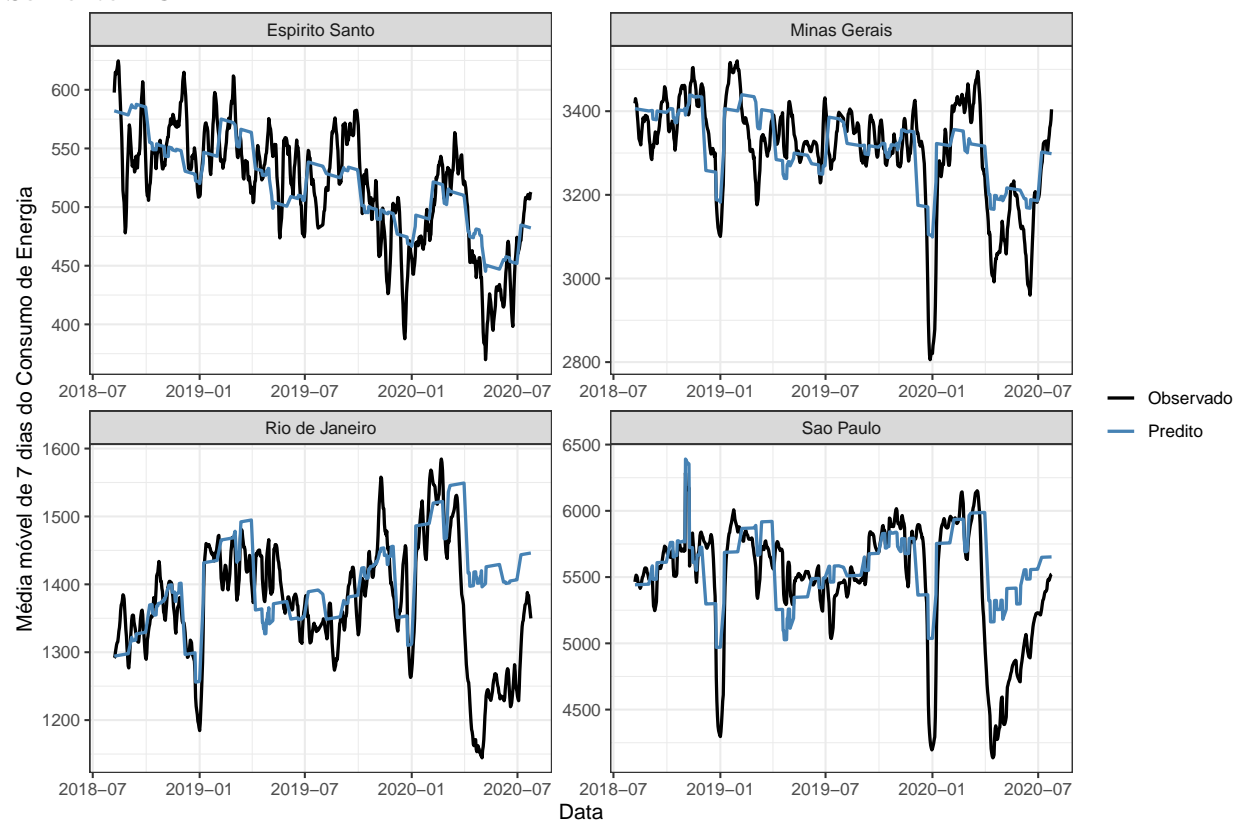
A partir de 1, usamos os valores preditos para os dados a partir de Março de 2020 como o esperado para o consumo de energia. A diferença percentual mostrada nos gráficos abaixo se baseia nesses valores.

### Testando o fit nos dados de energia

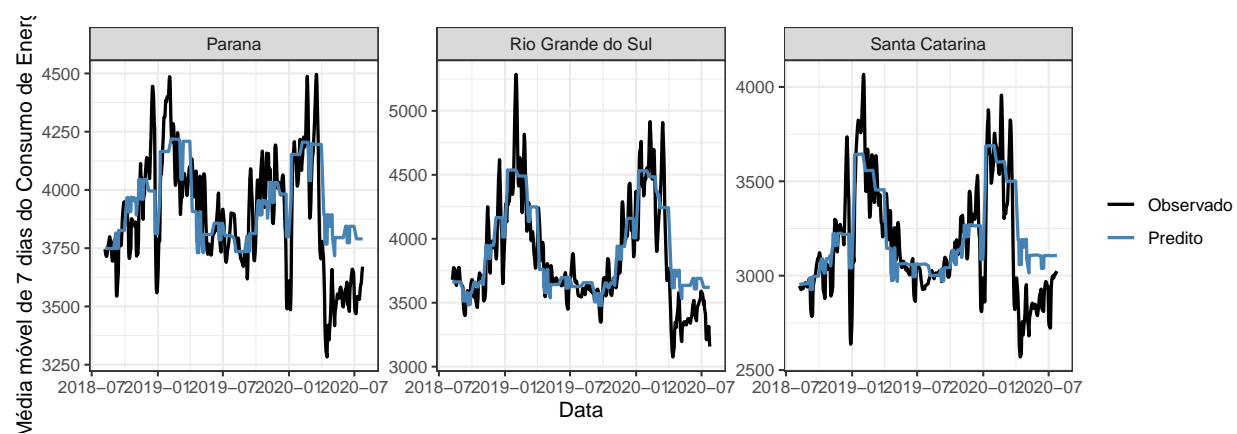
#### Região Sudeste



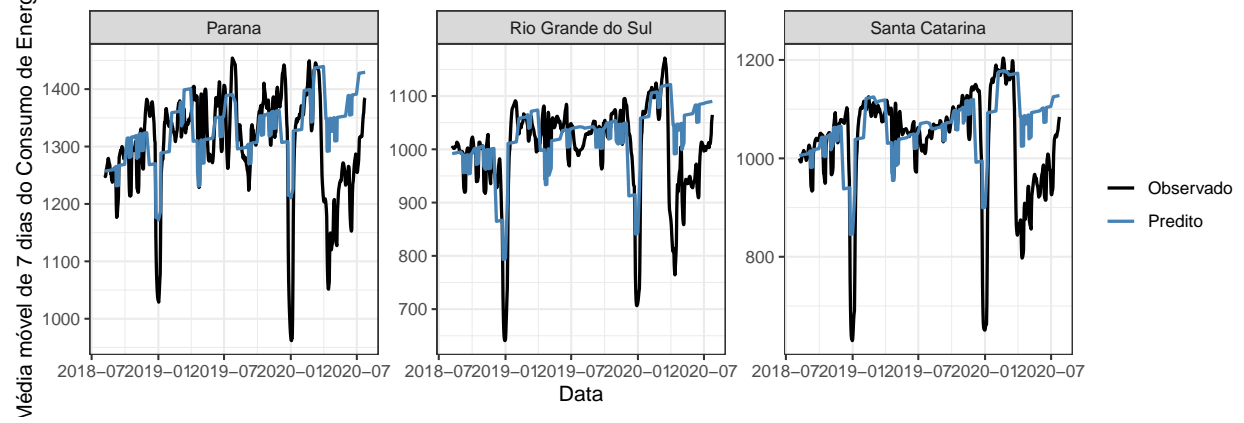
## Somente ACL



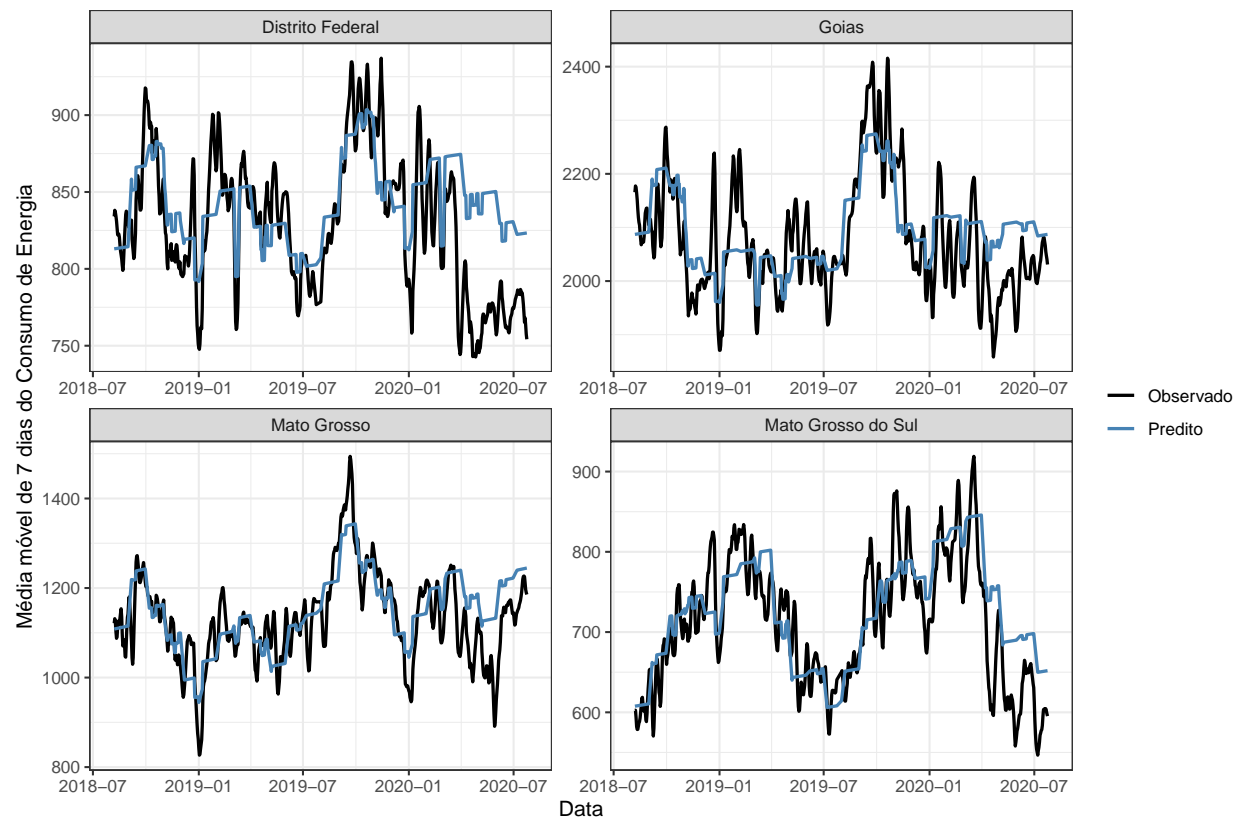
## Região Sul



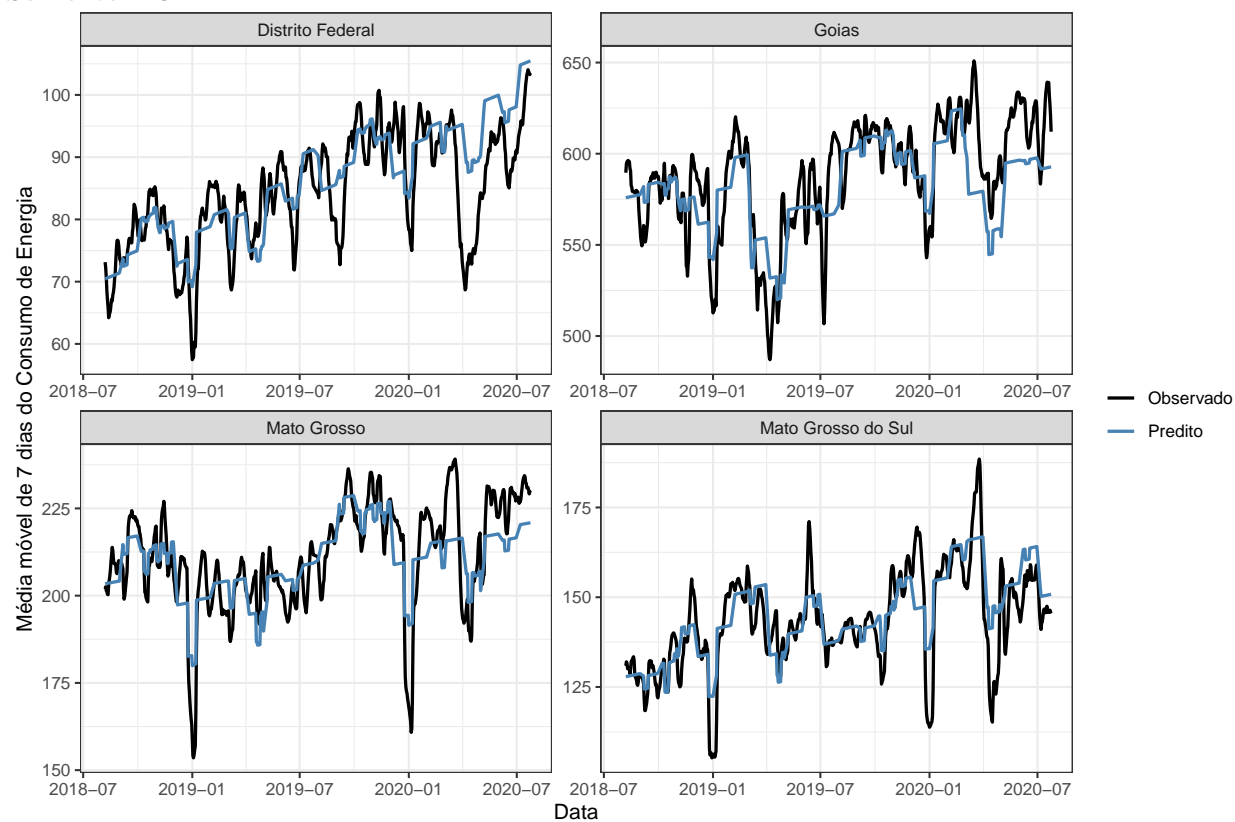
## Somente ACL



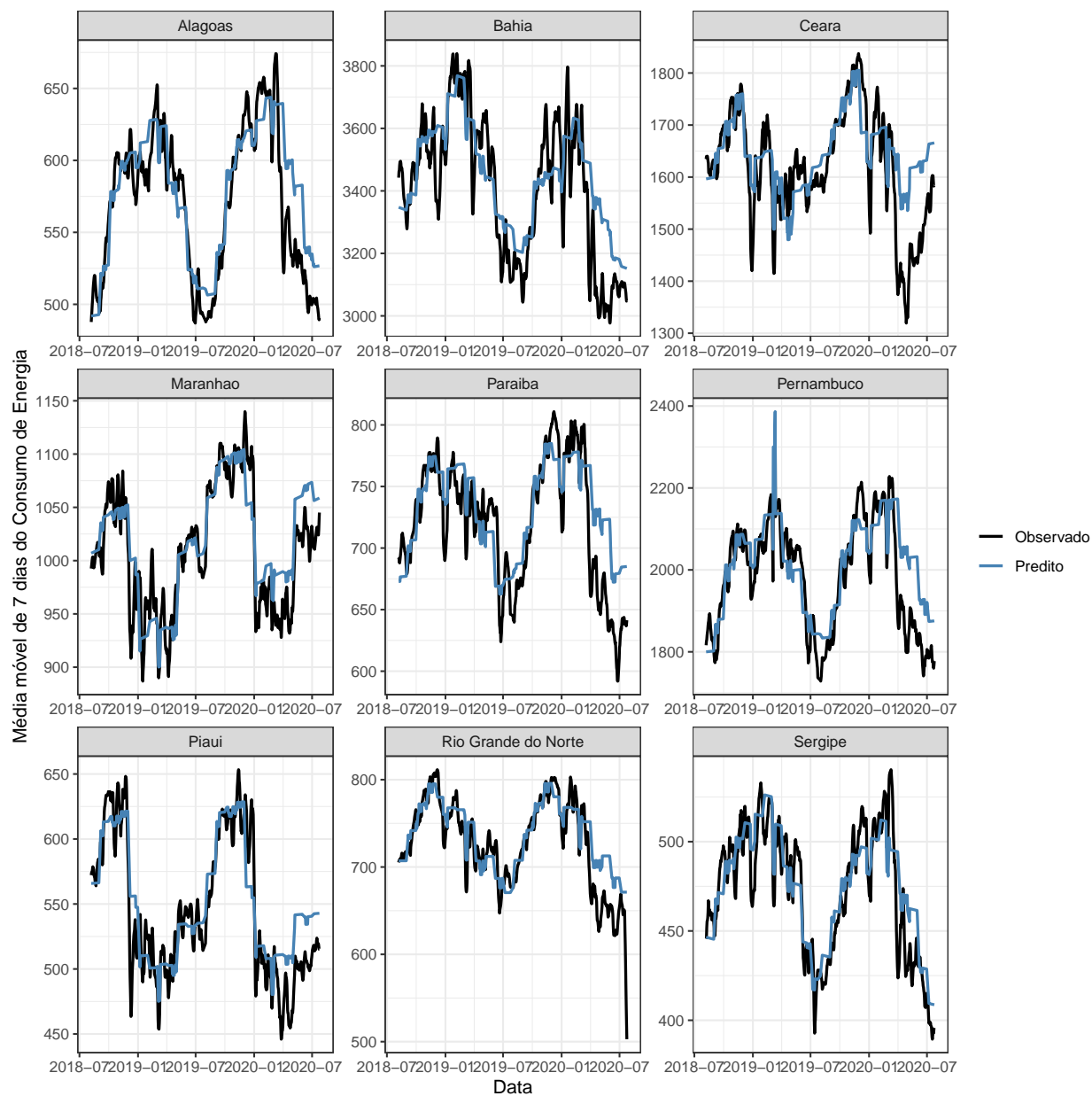
## Região Centro-Oeste



## Somente ACL

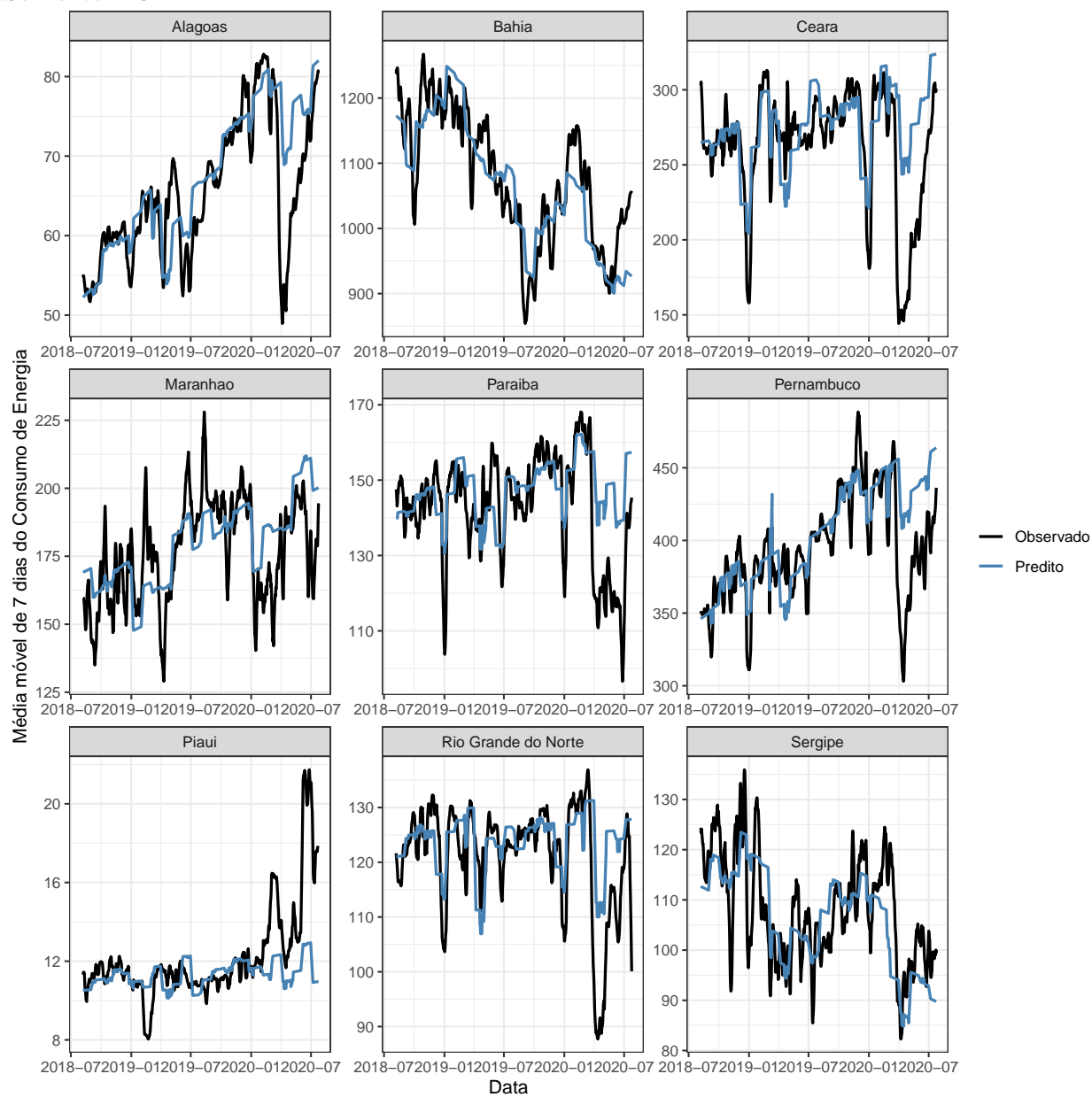


## Região Nordeste

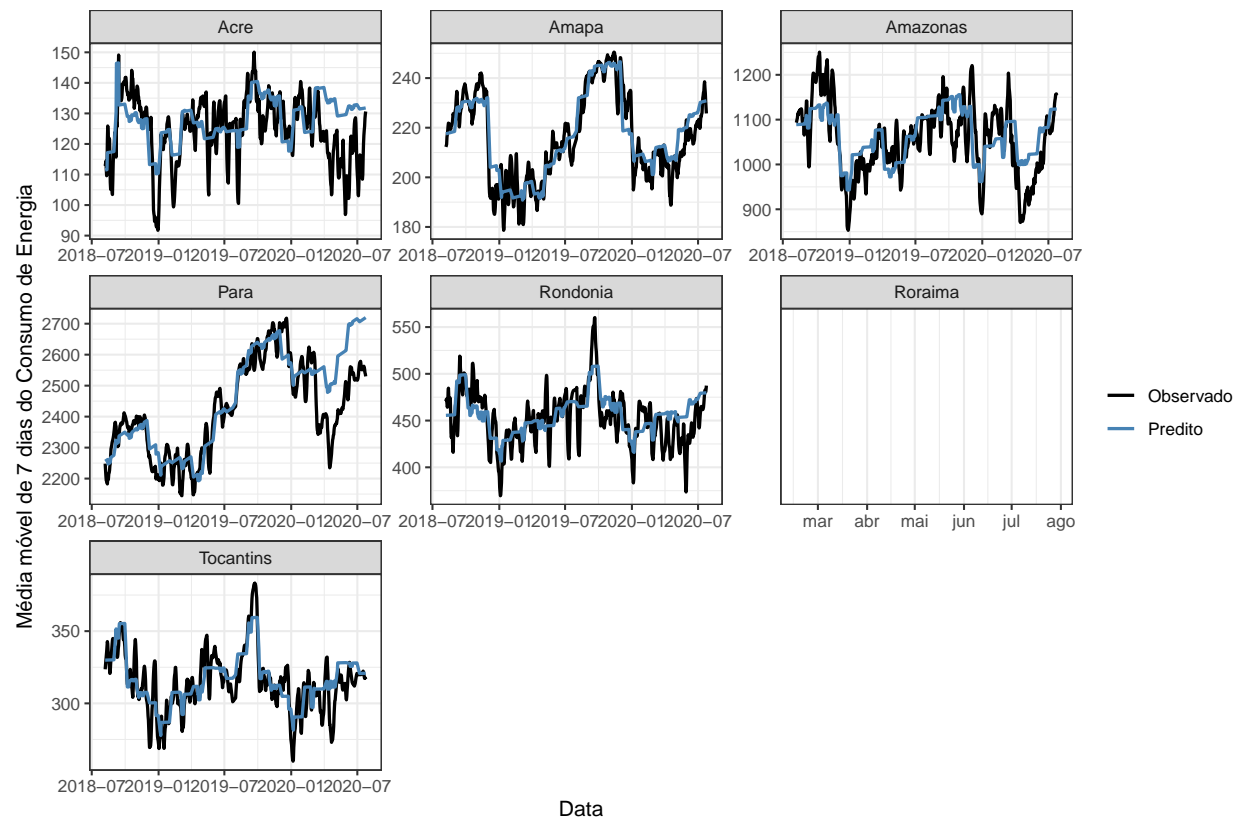




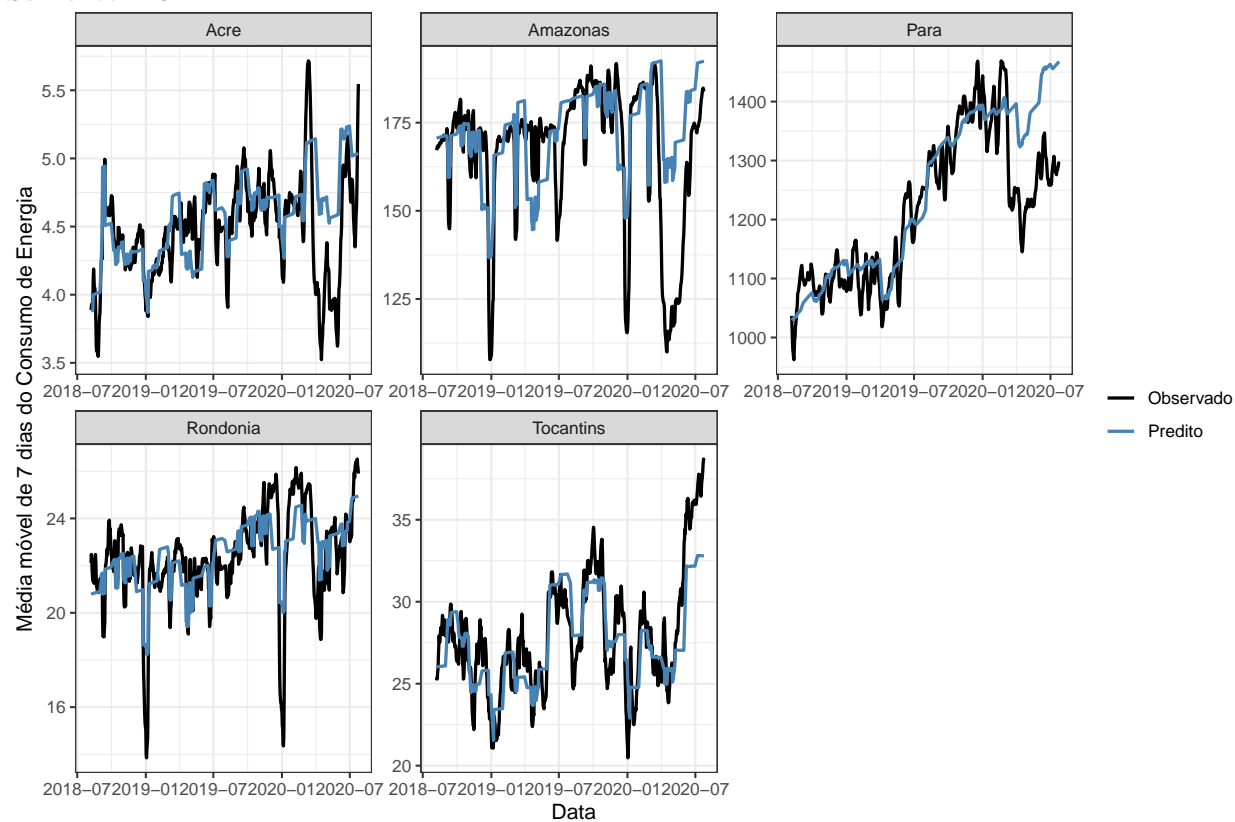
## Somente ACL



## Região Norte

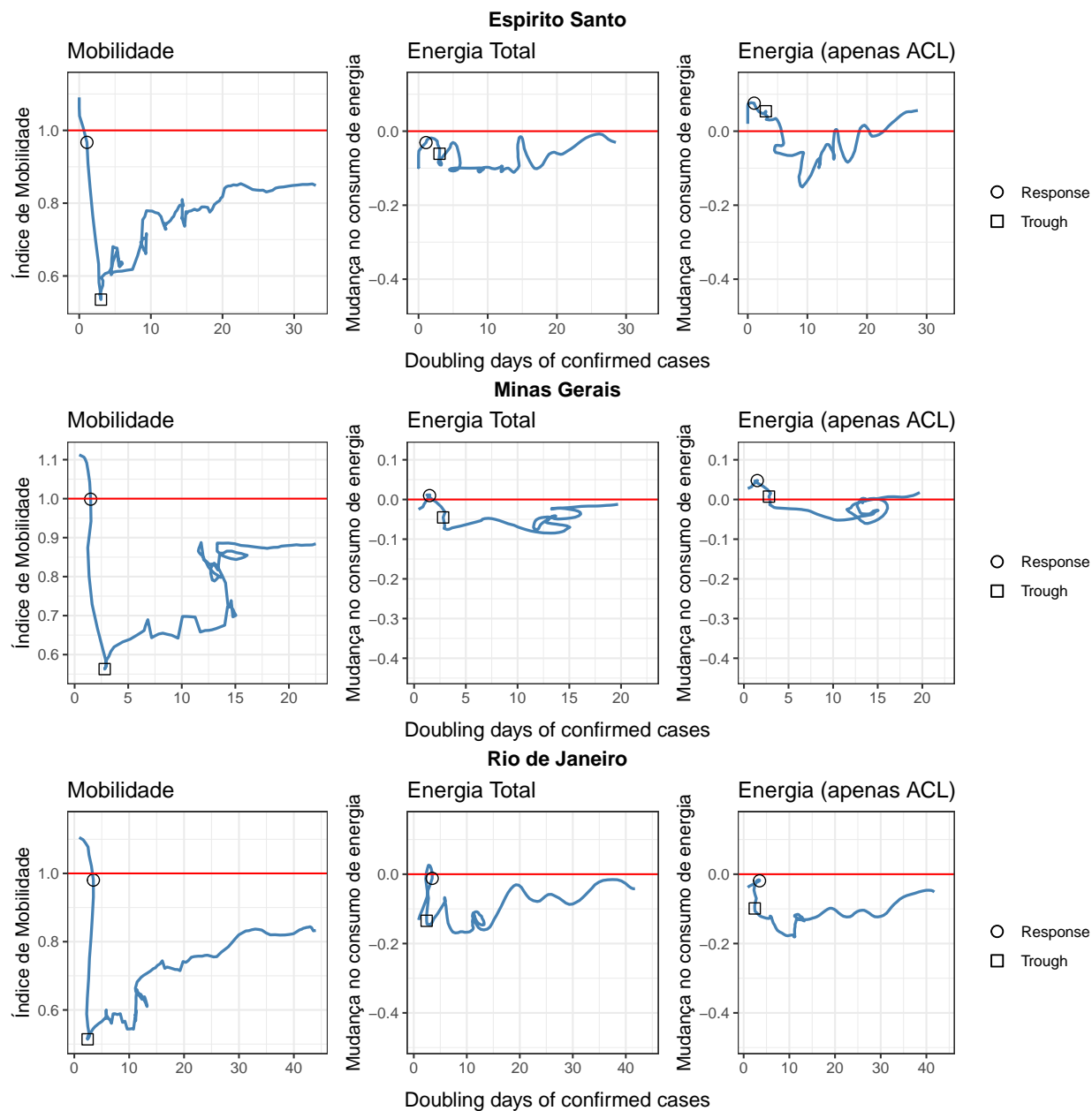


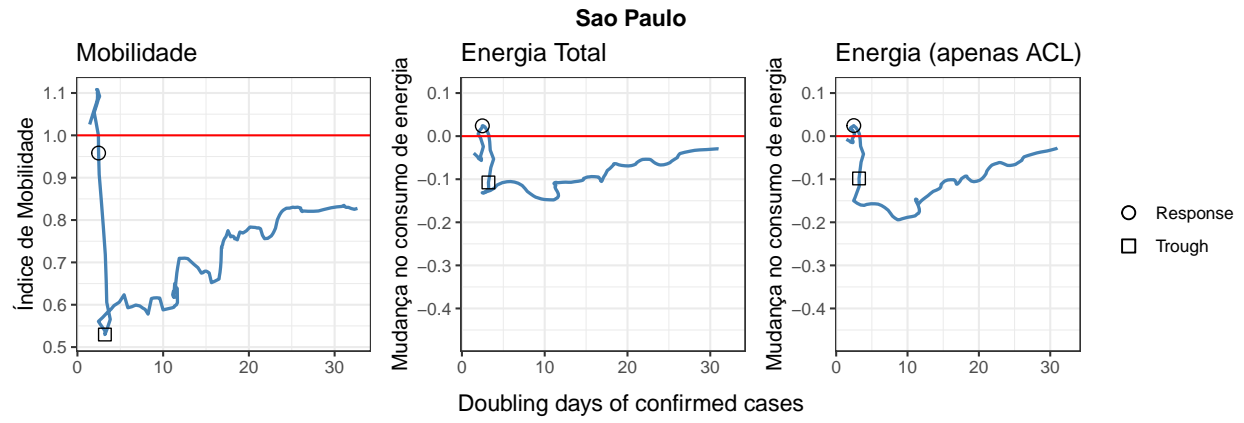
## Somente ACL



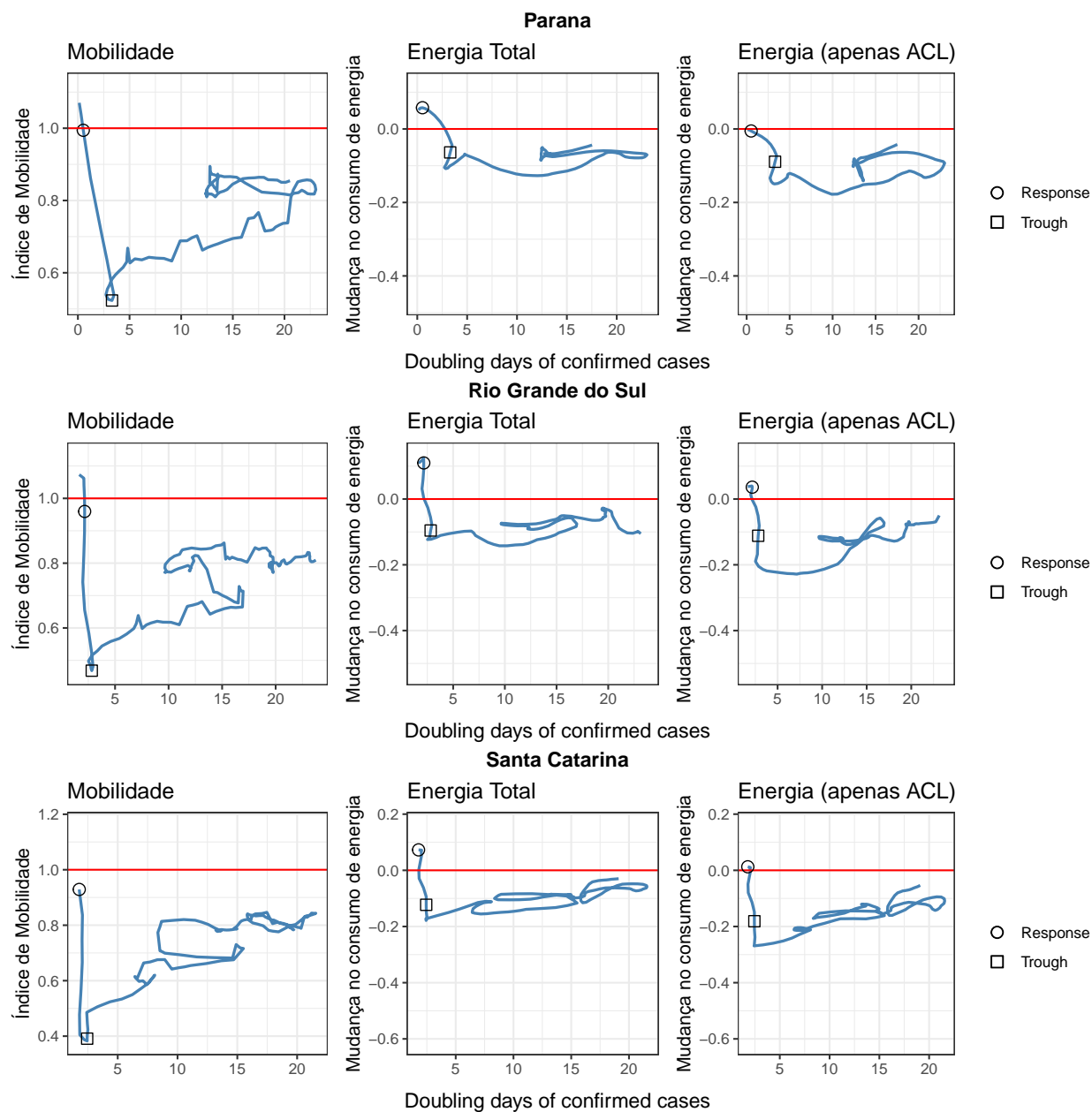
# Atividade x COVID

## Região Sudeste

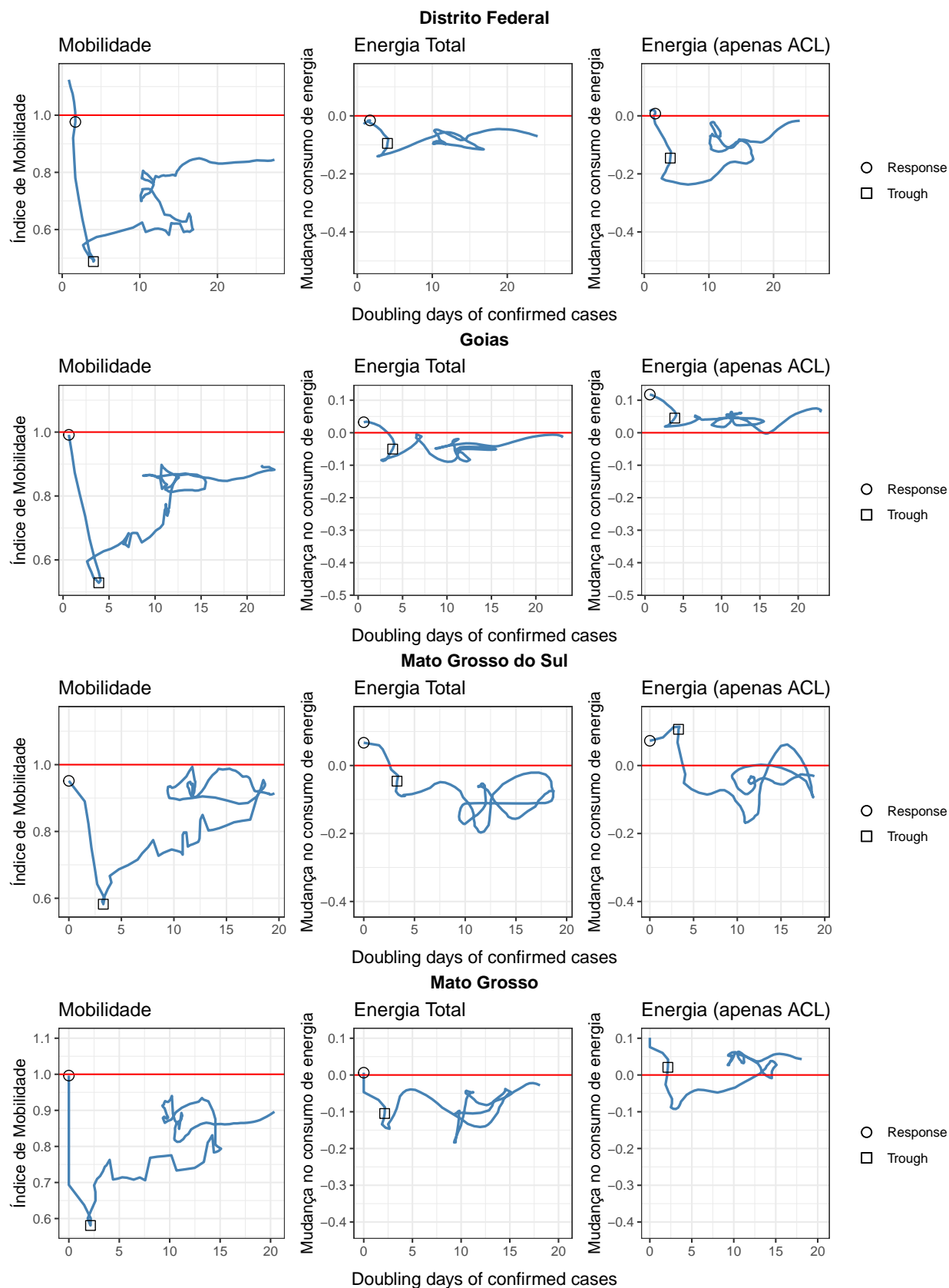




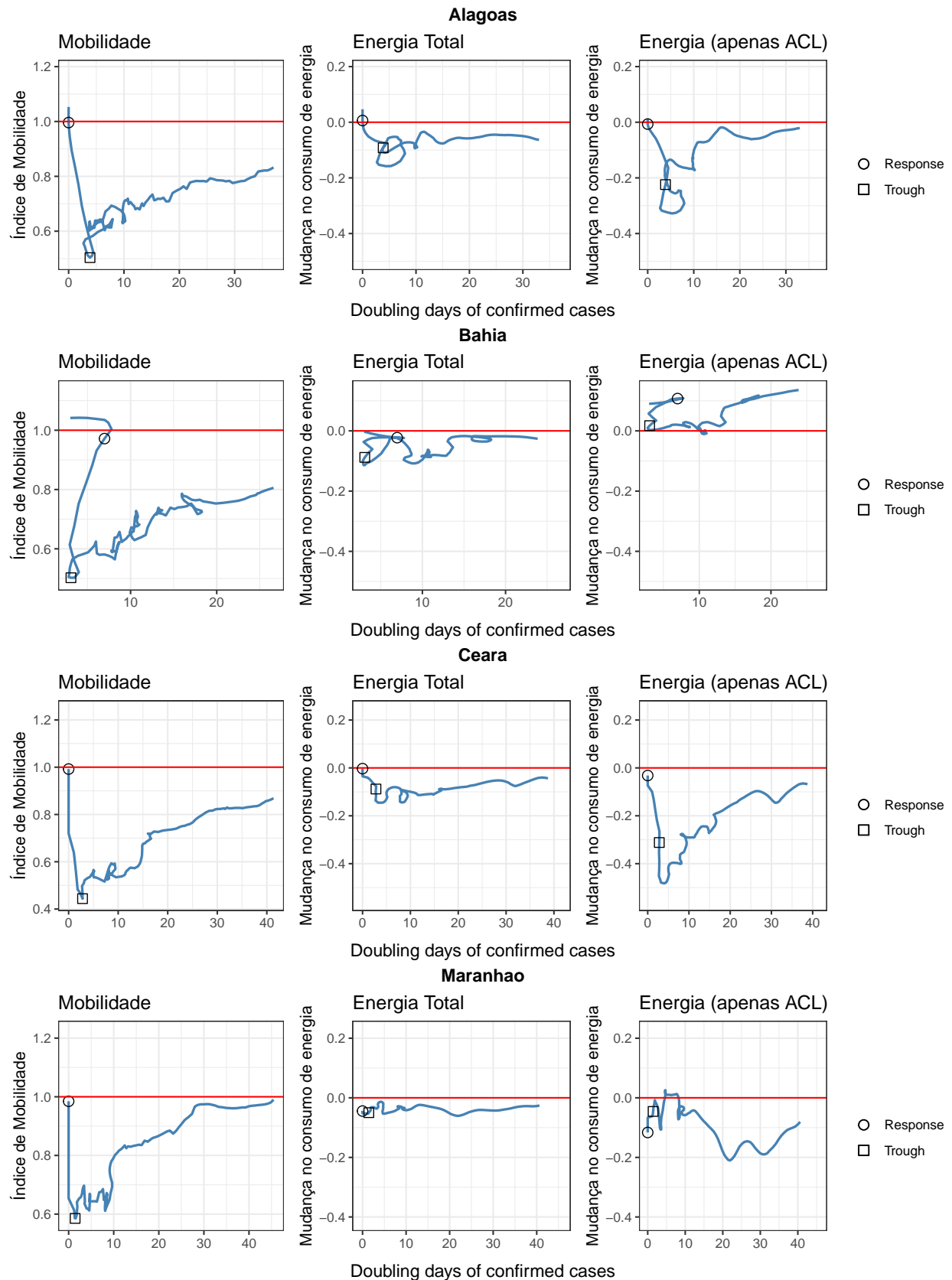
## Região Sul



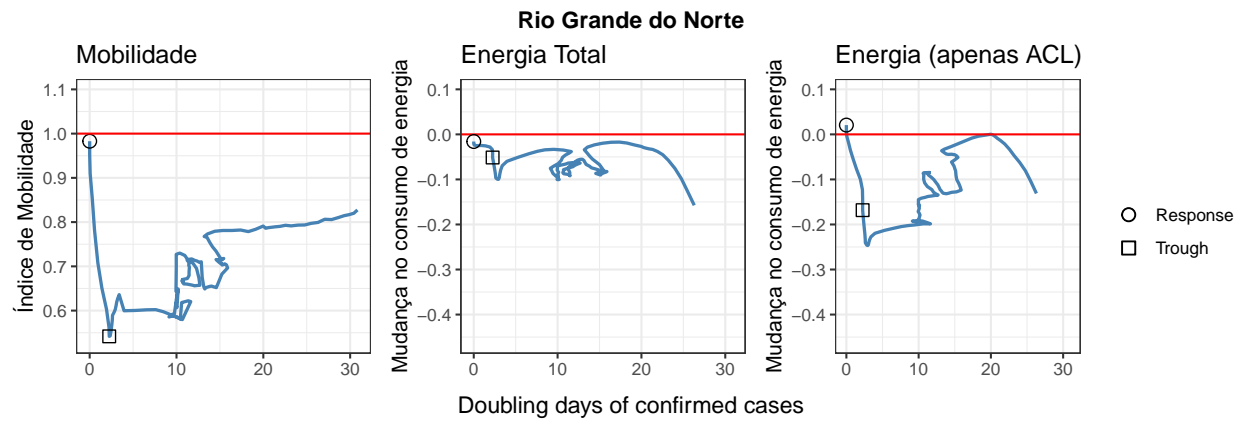
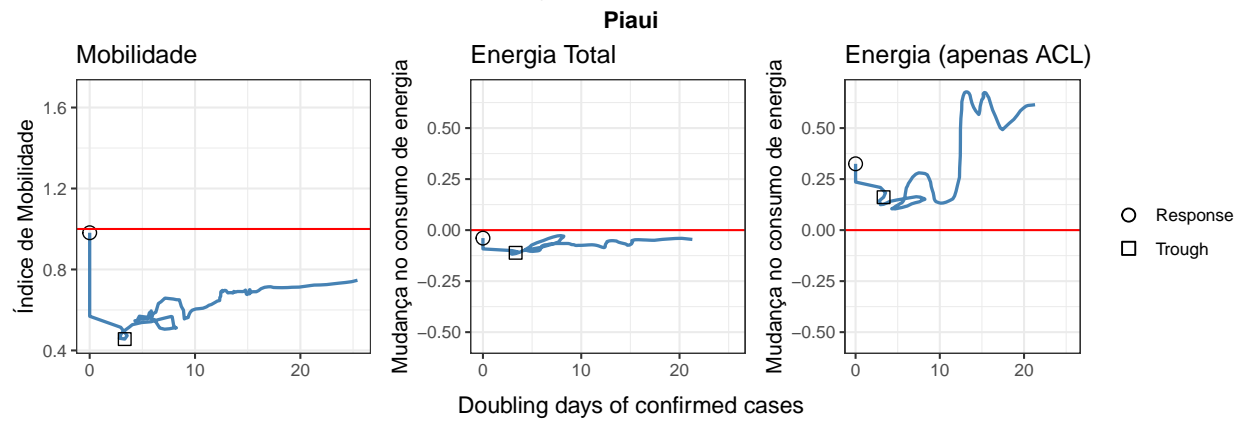
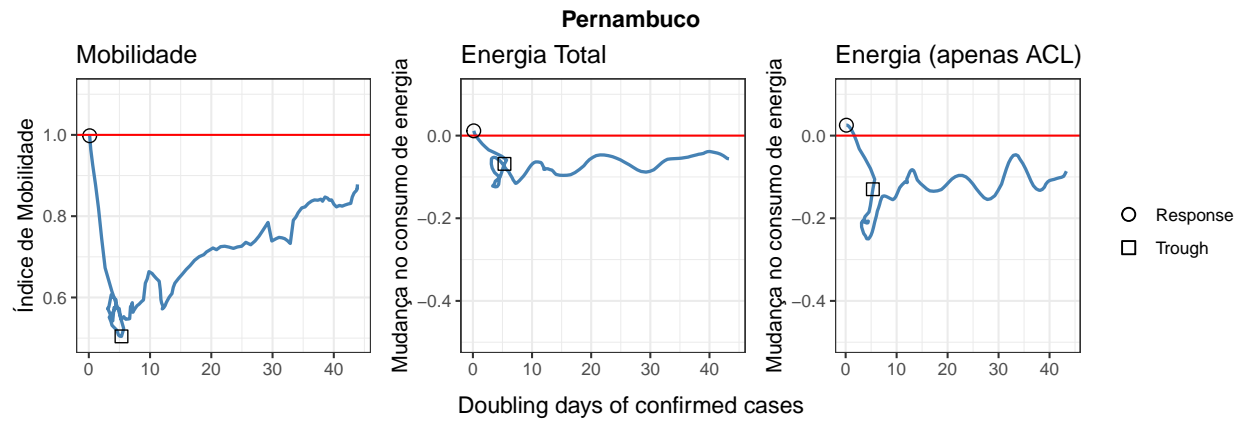
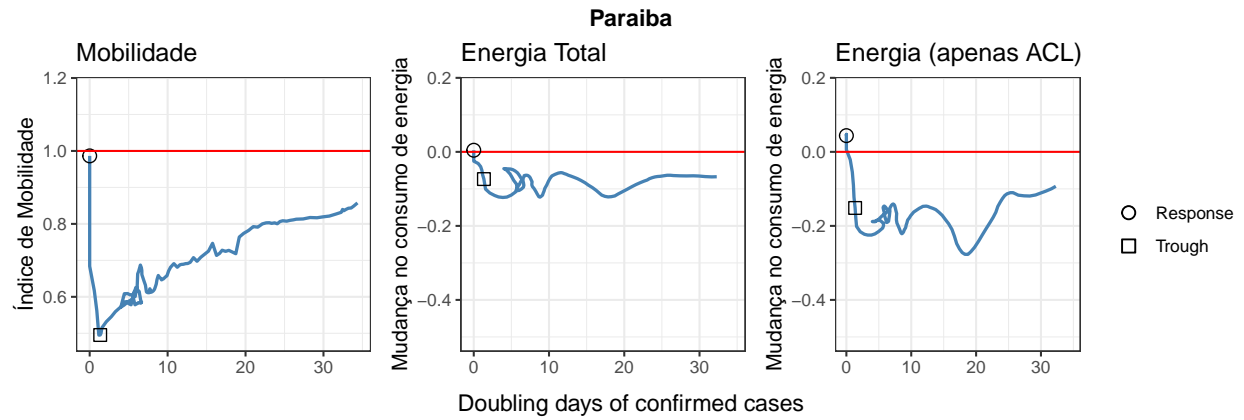
## Região Centro-Oeste

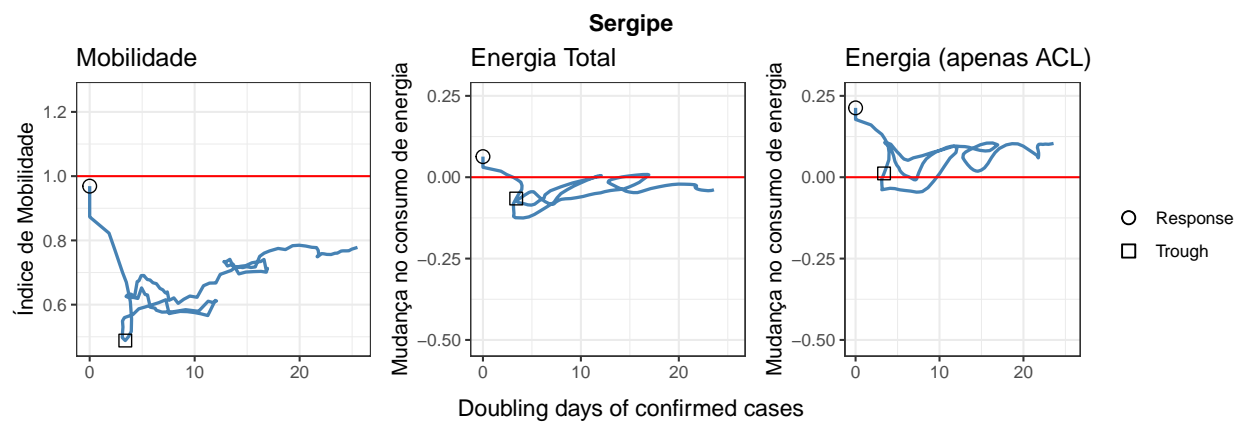


## Região Nordeste

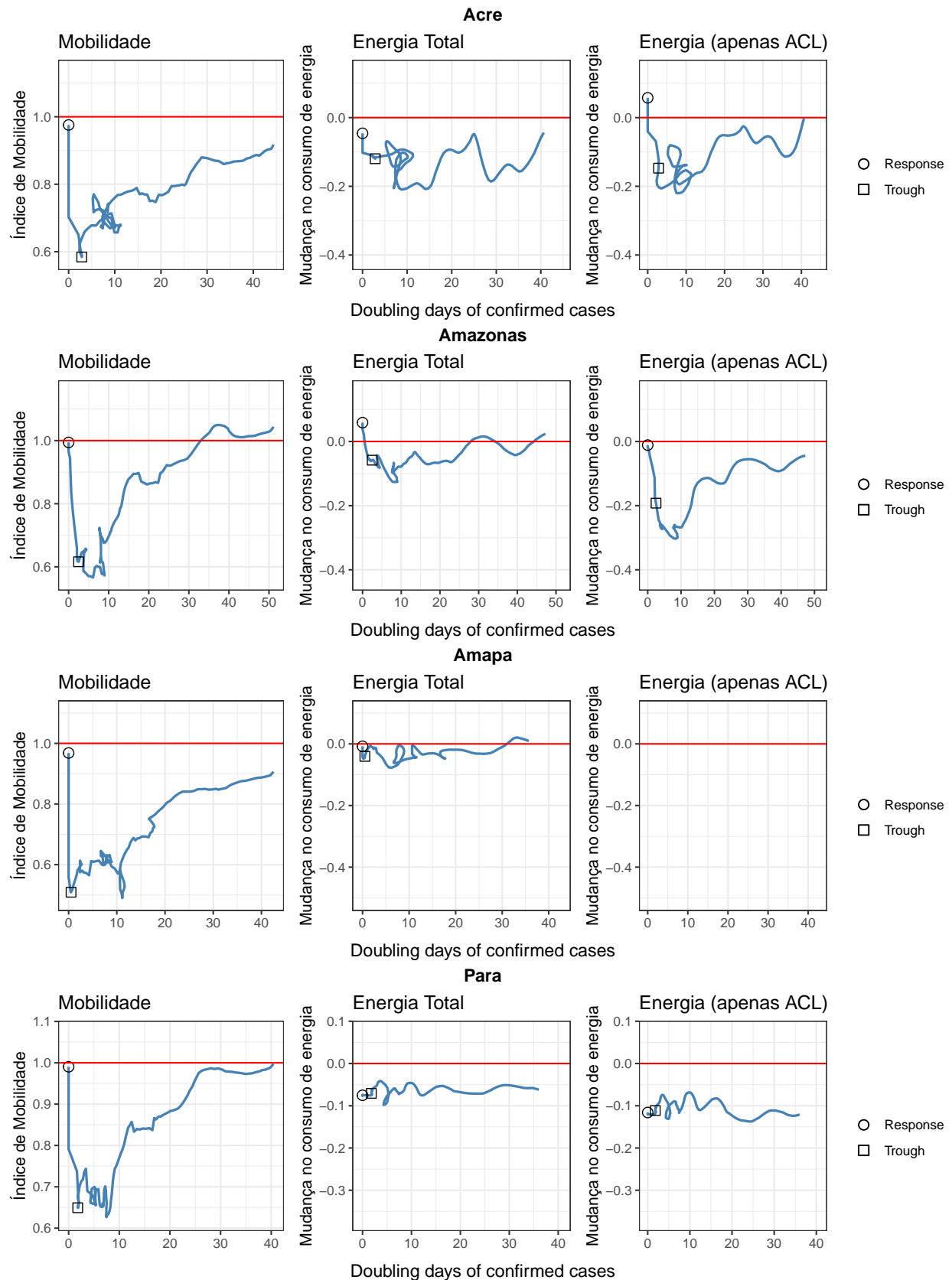


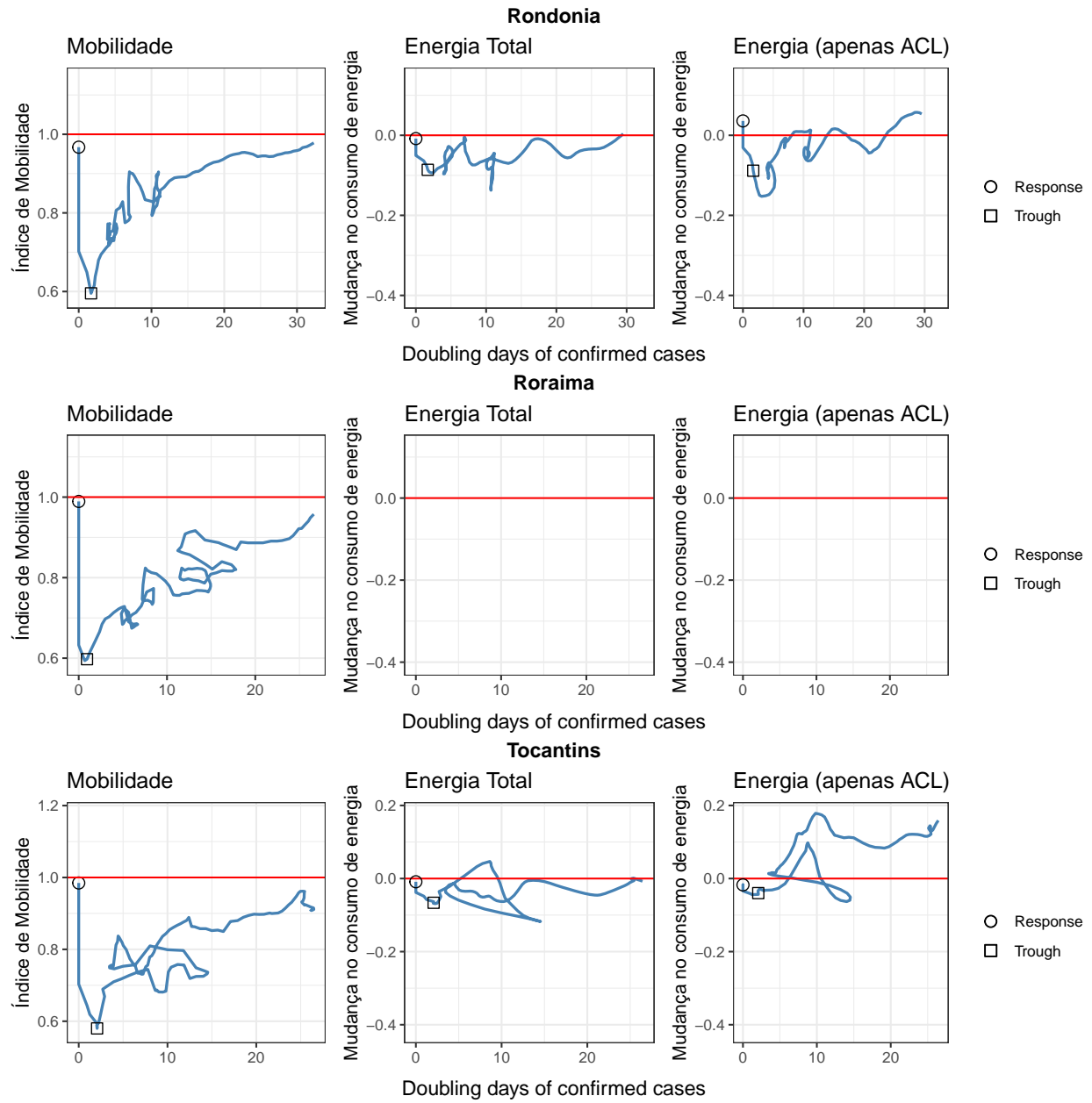






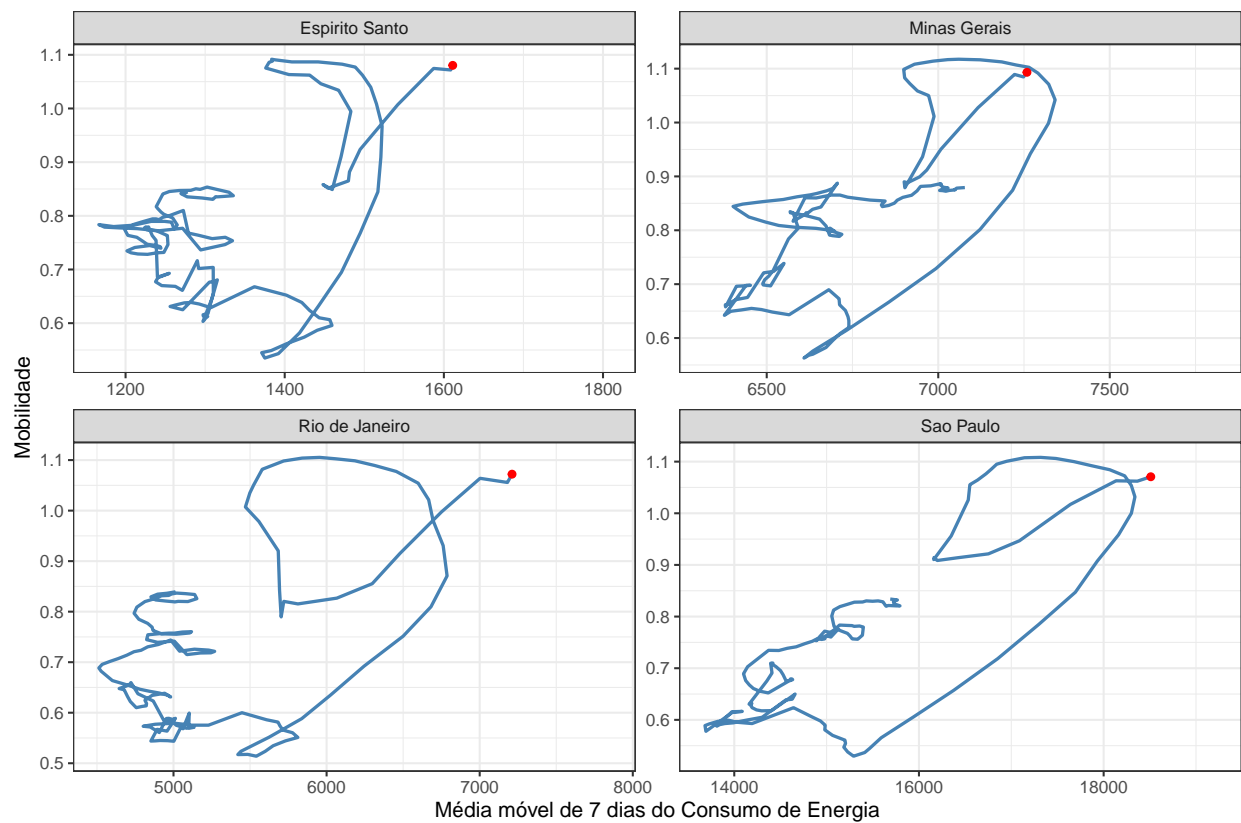
## Região Norte



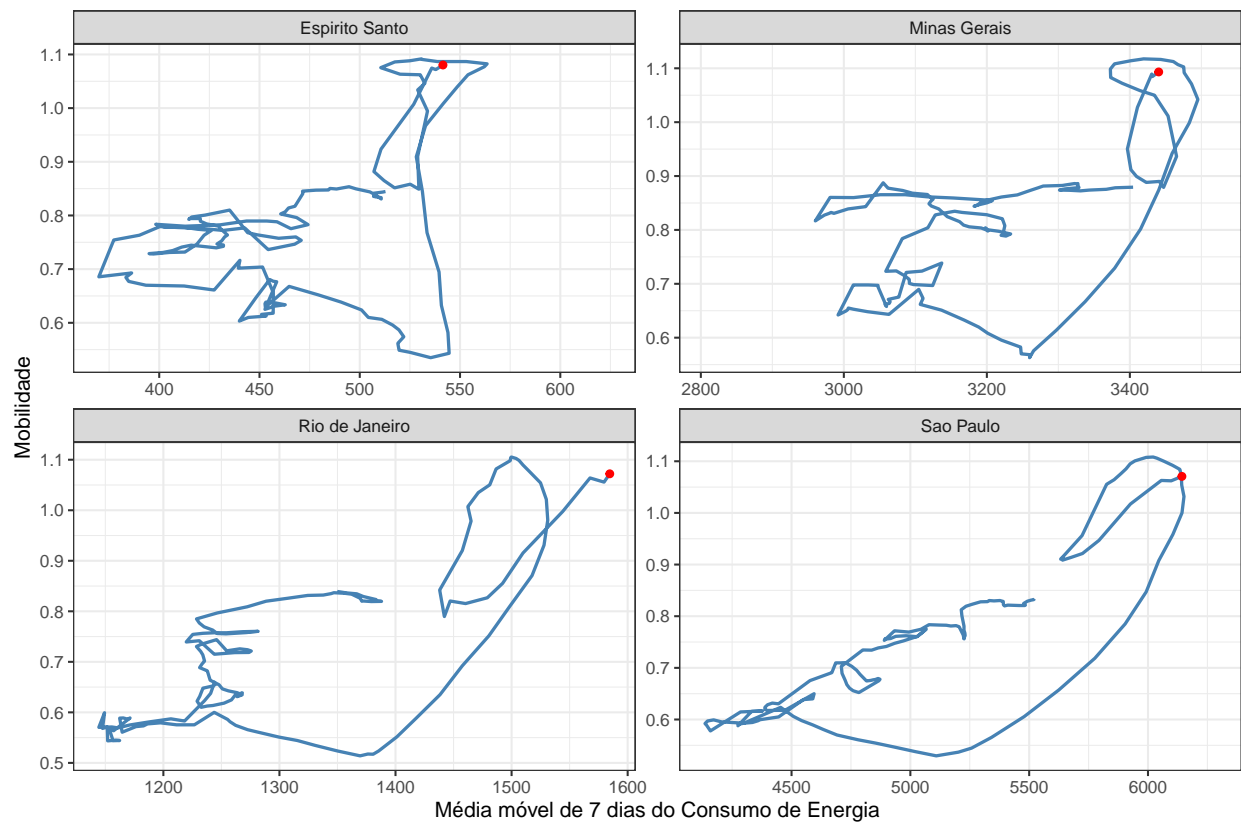


## Relação Mobilidade x Consumo de Energia

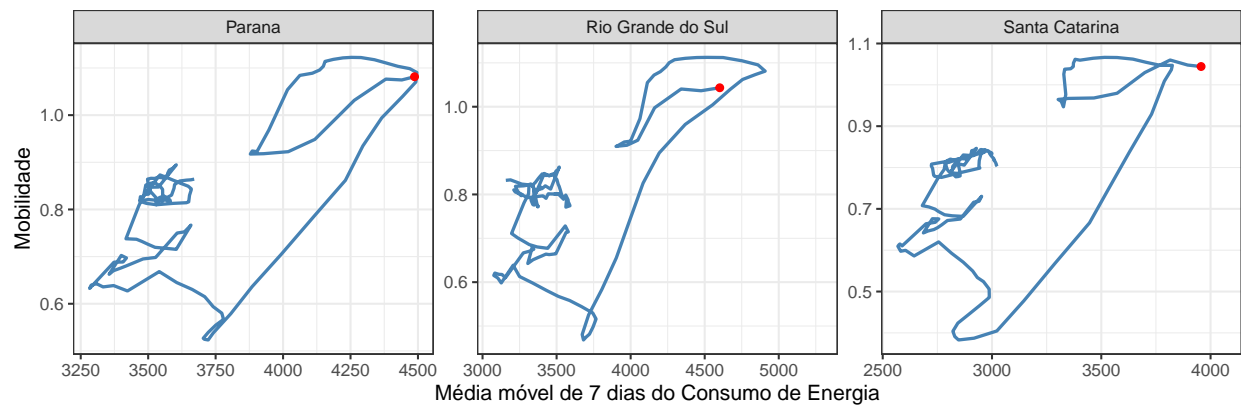
### Região Sudeste



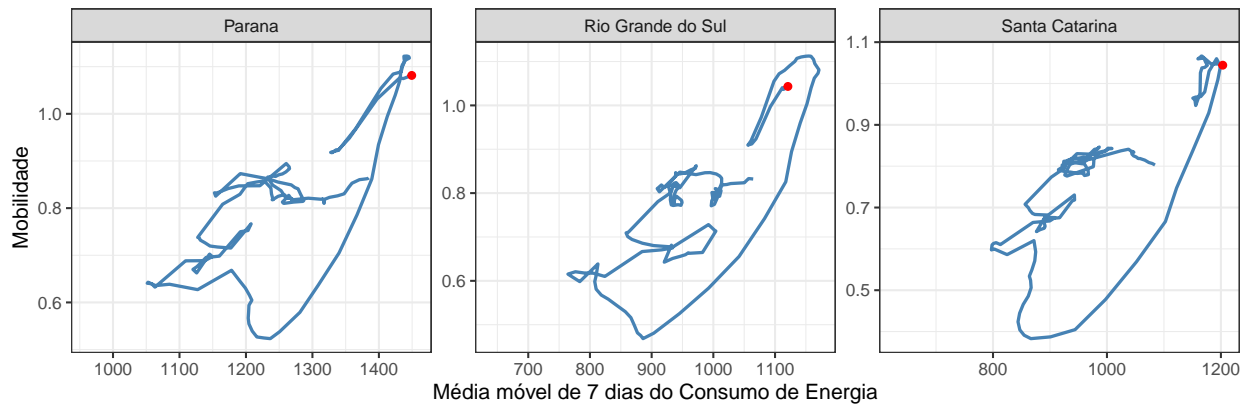
## Somente ACL



## Região Sul

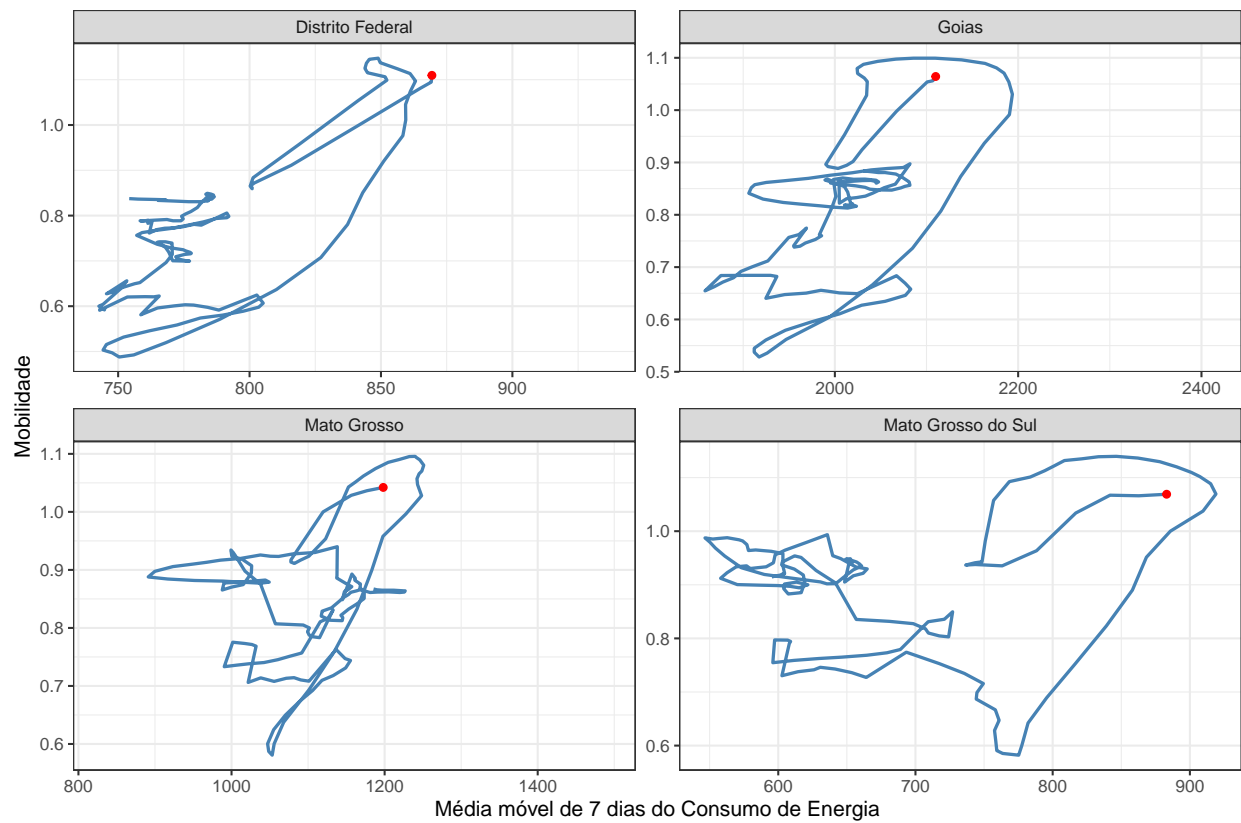


### Somente ACL

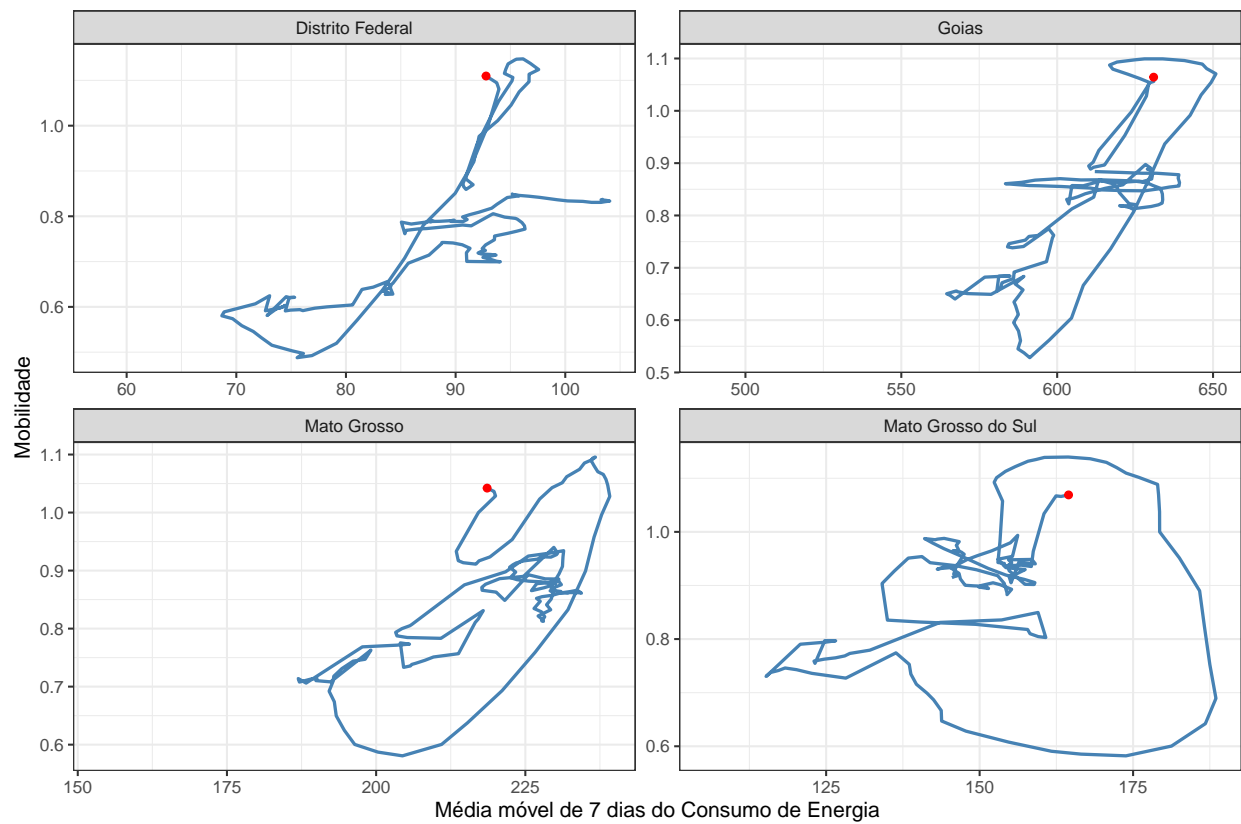




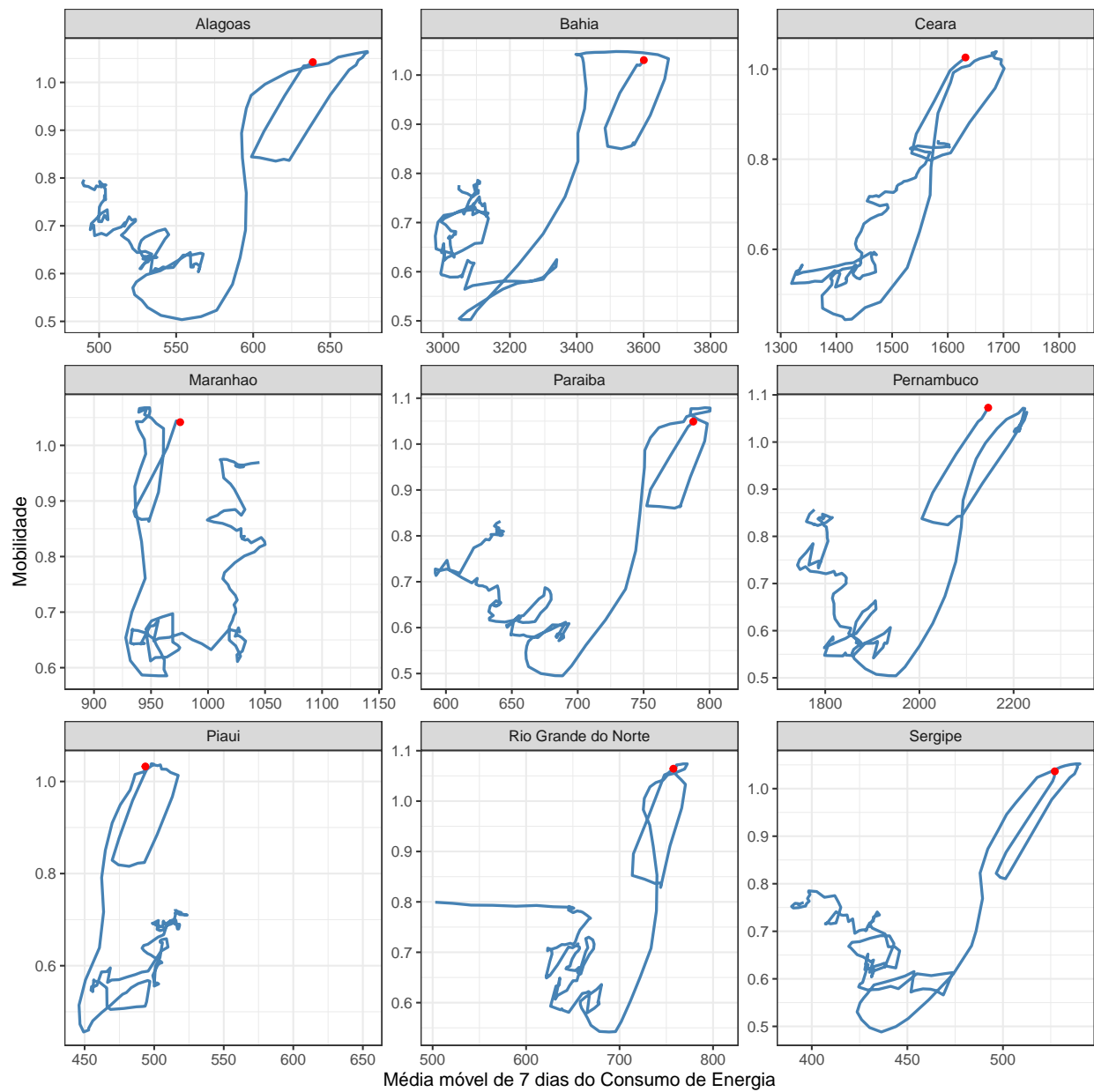
## Região Centro-Oeste



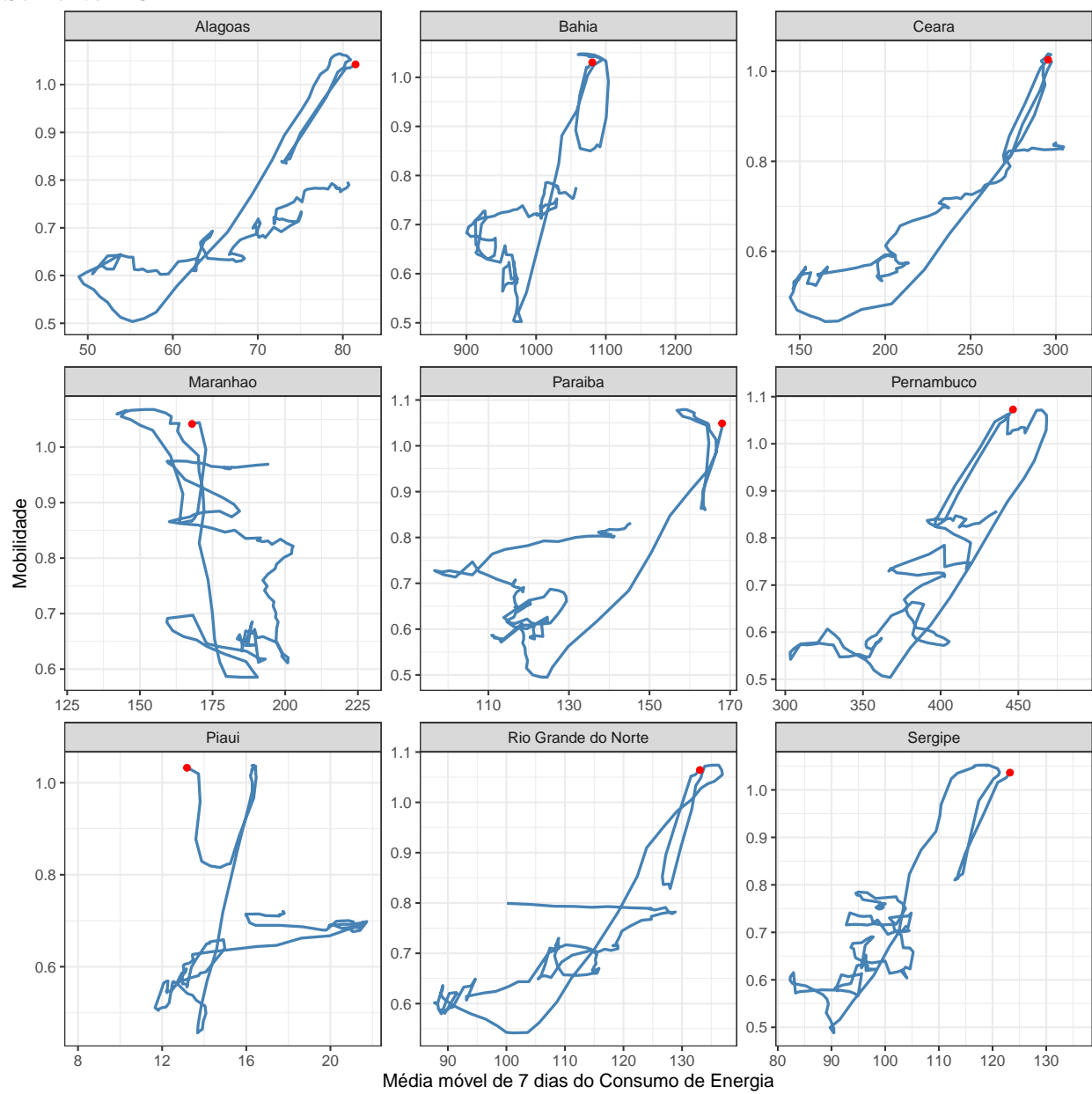
## Somente ACL



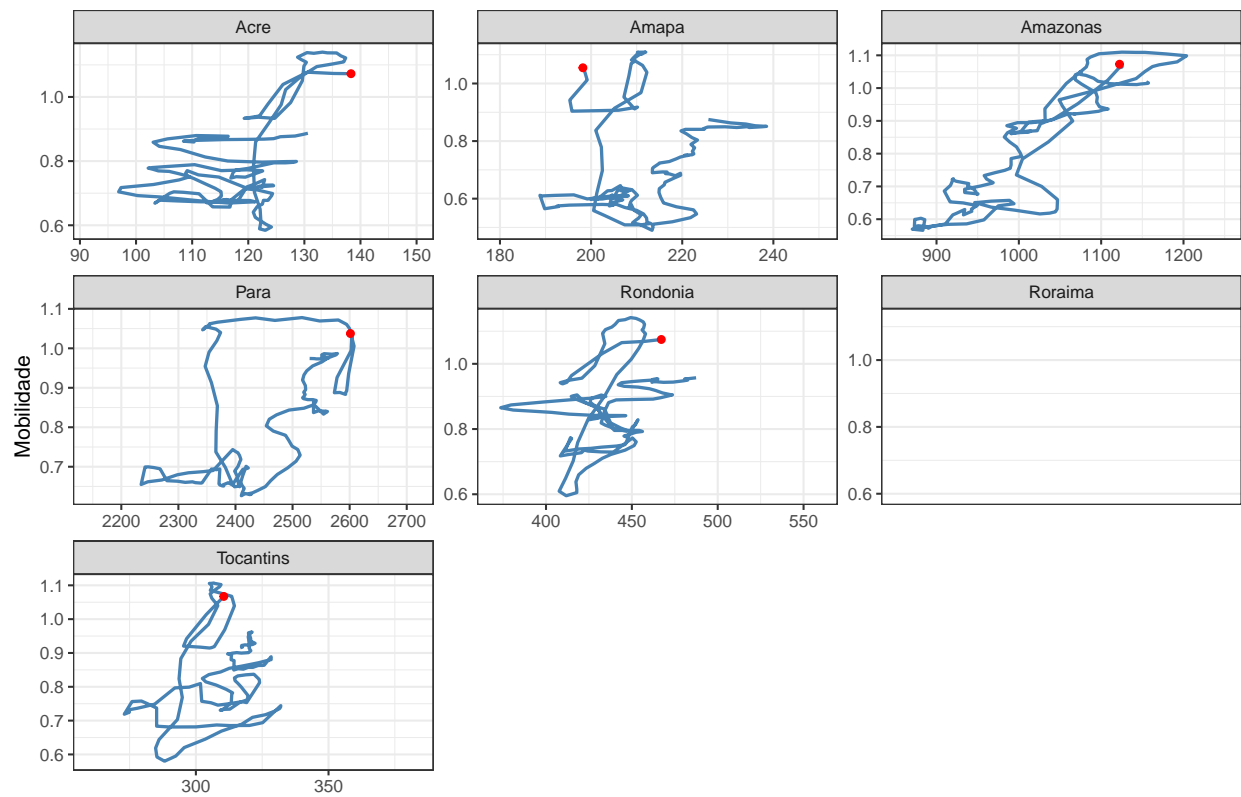
## Região Nordeste



## Somente ACL

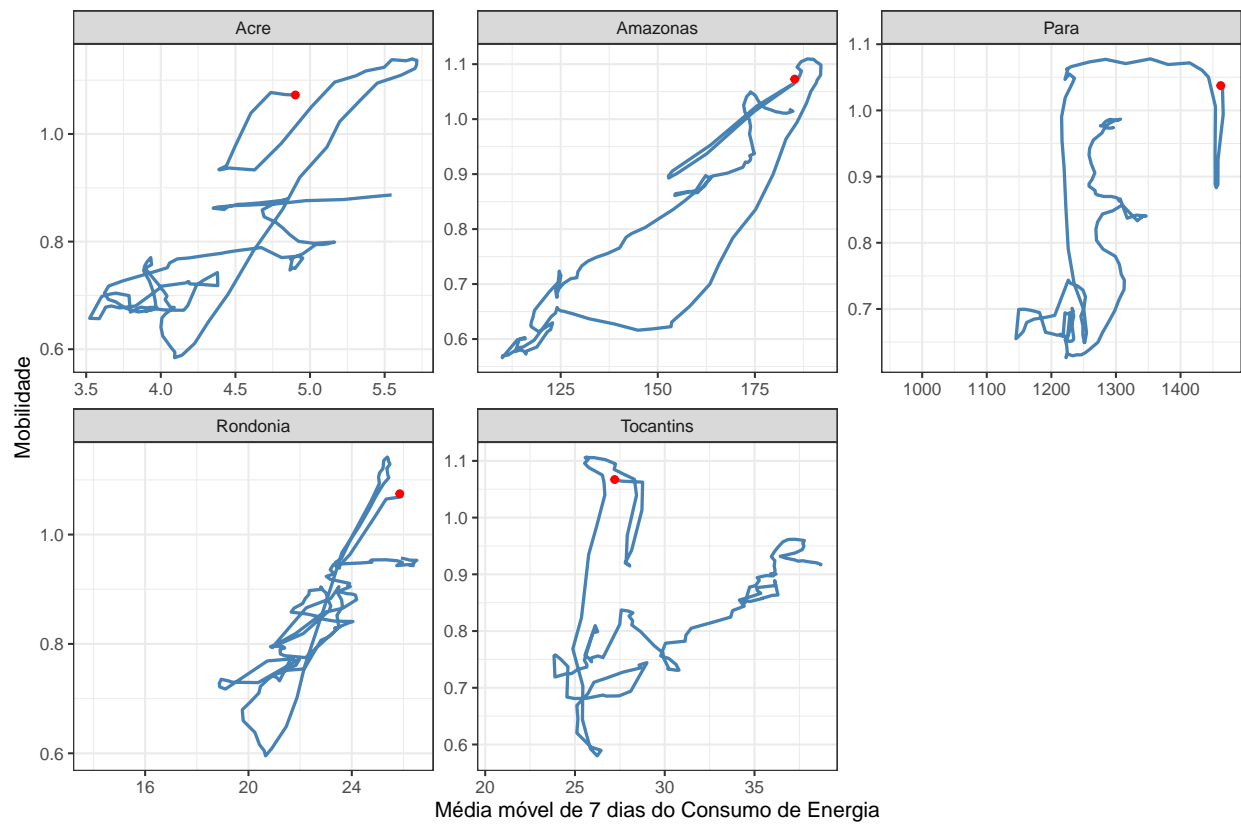


## Região Norte



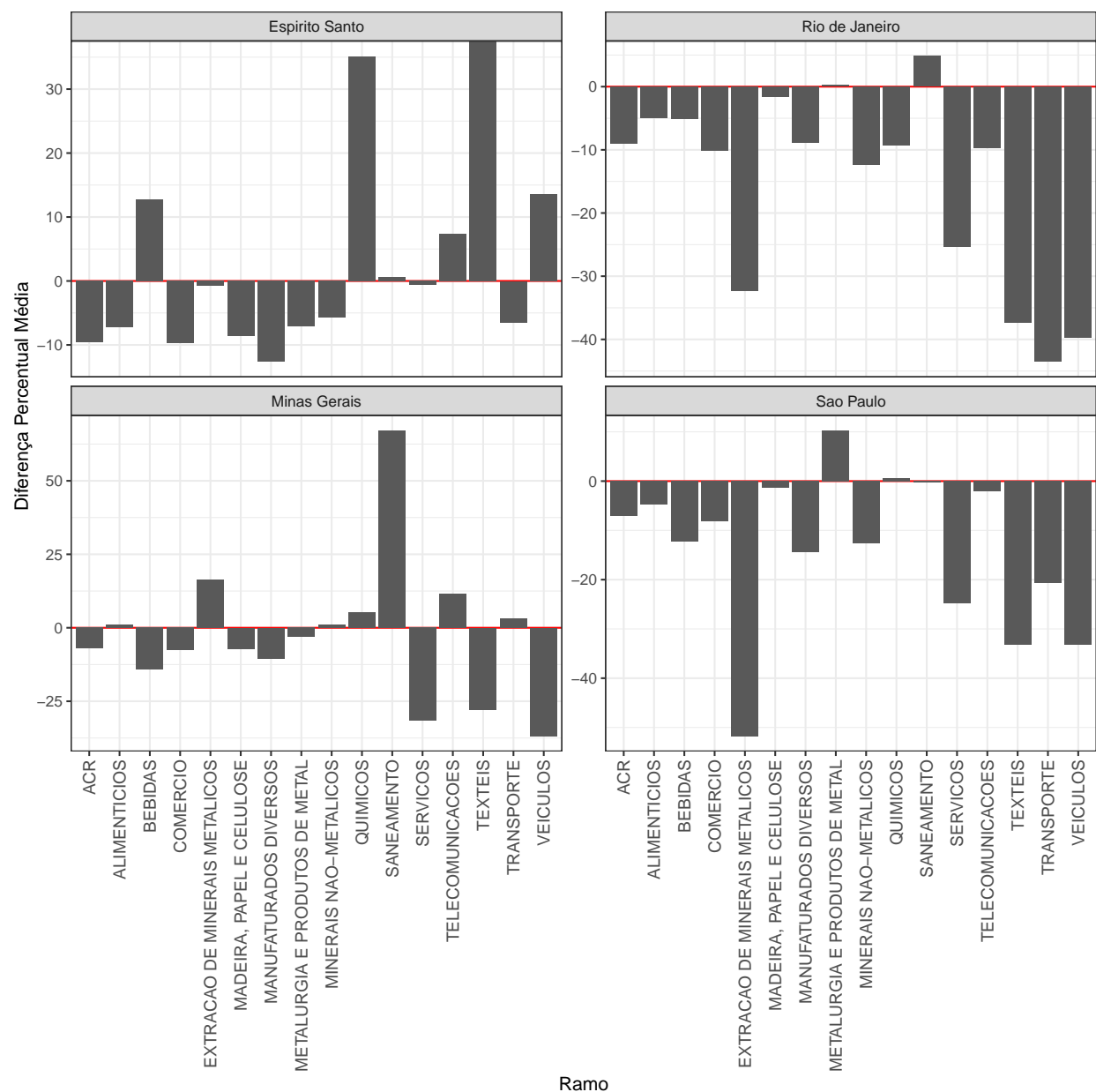
Média móvel de 7 dias do Consumo de Energia

## Somente ACL

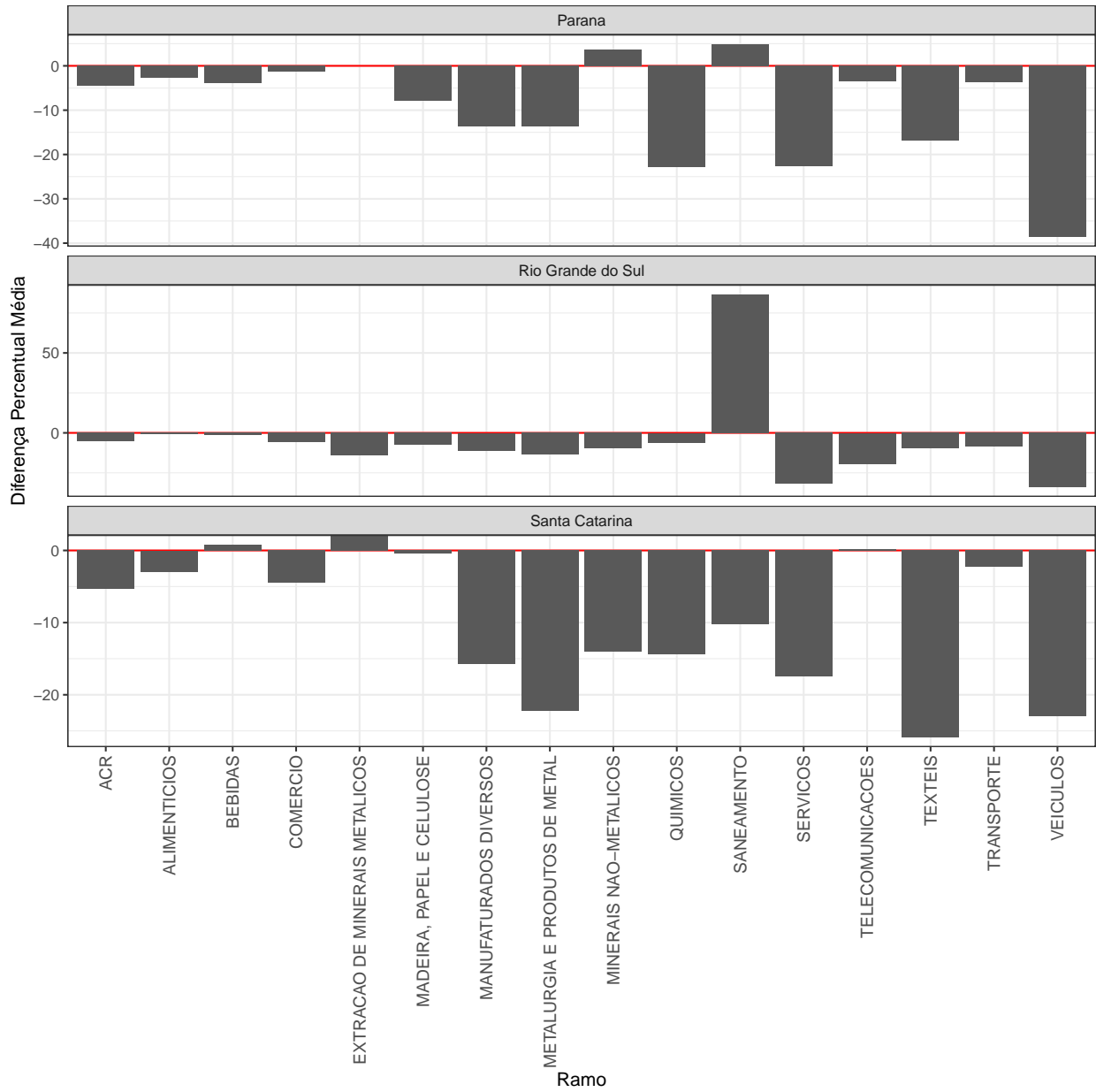


# Alteração do nível de consumo por Ramo

Região Sudeste

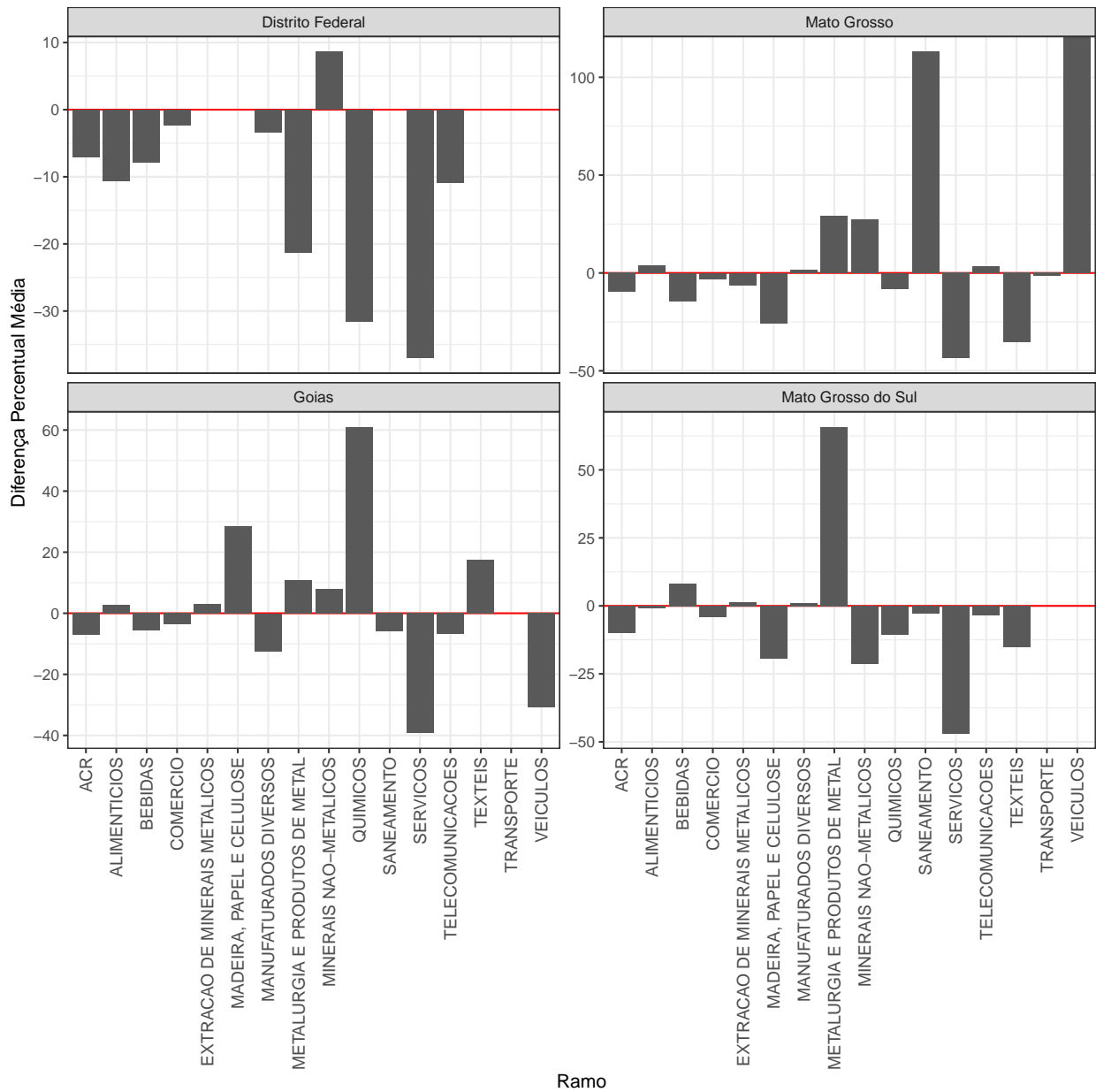


Região Sul

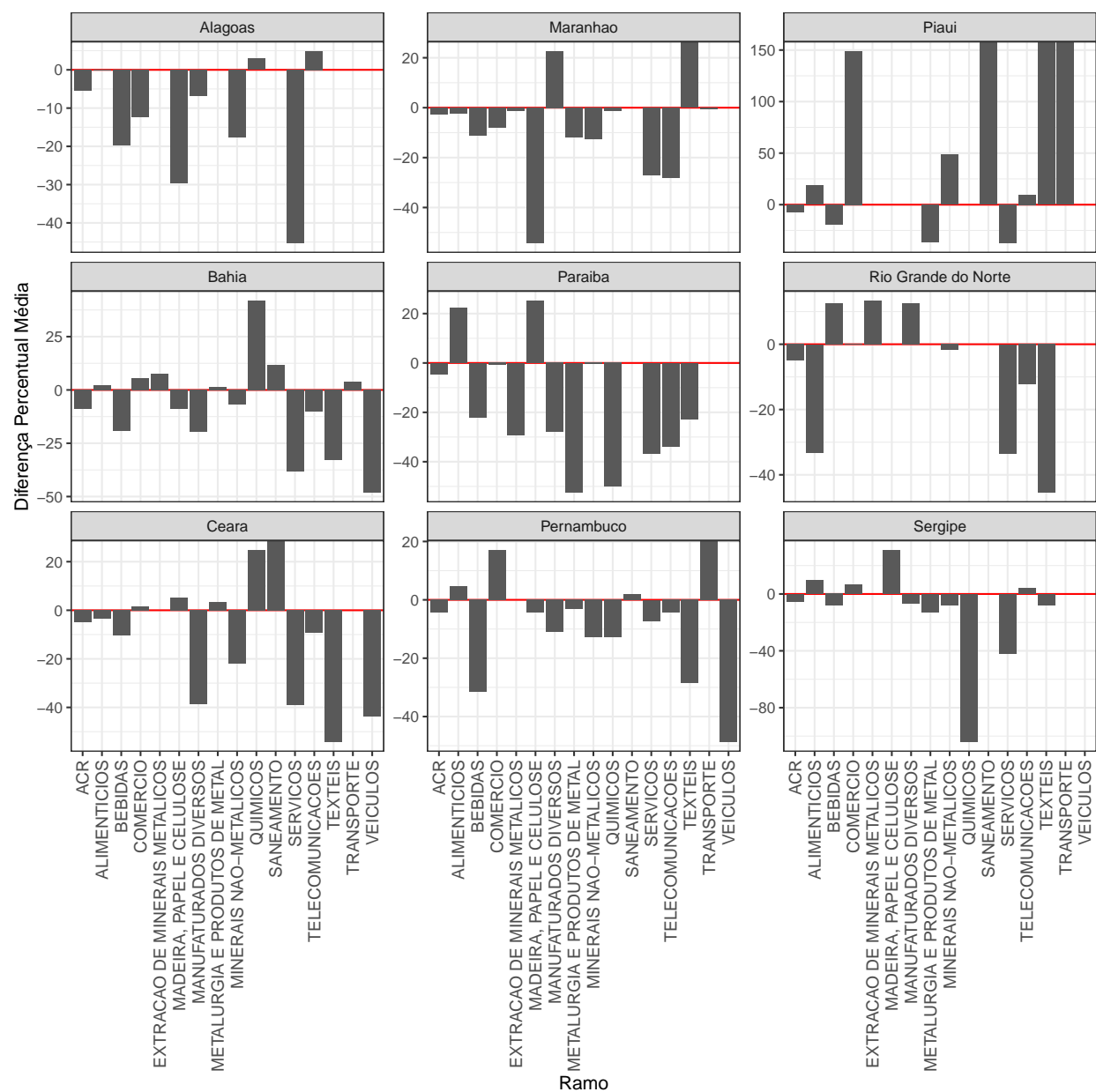




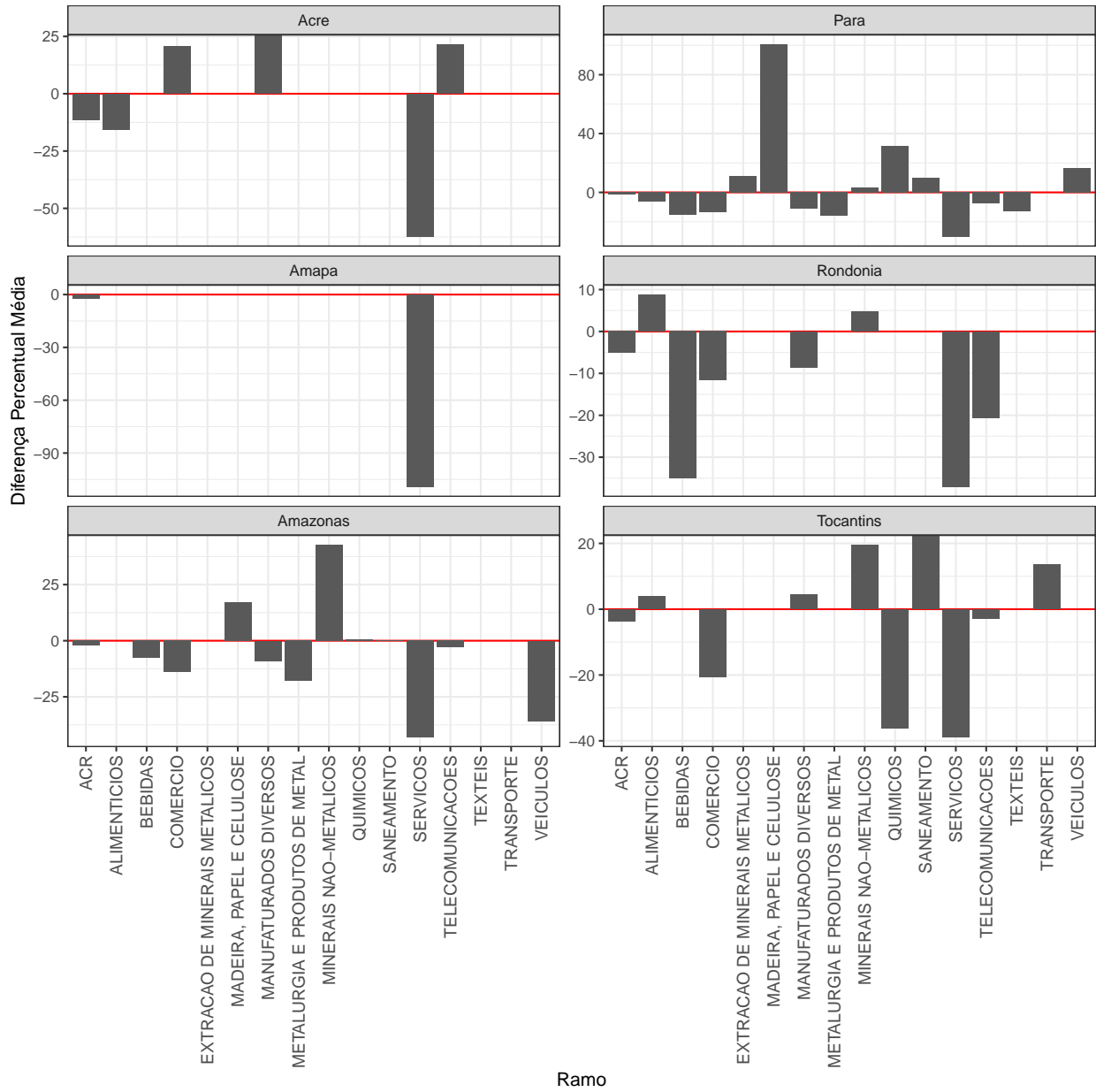
Região Centro-Oeste



## Região Nordeste

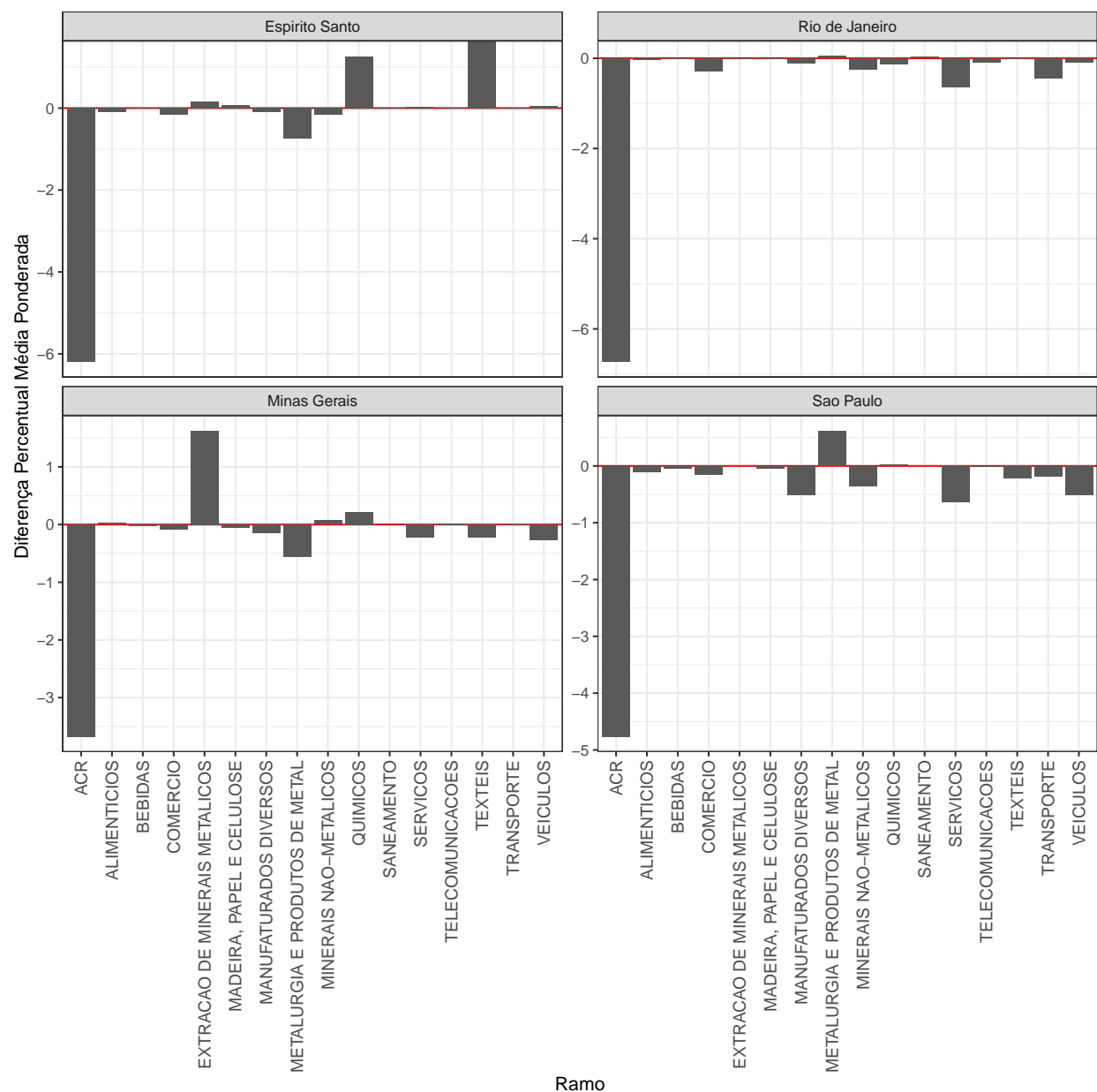


Região Norte

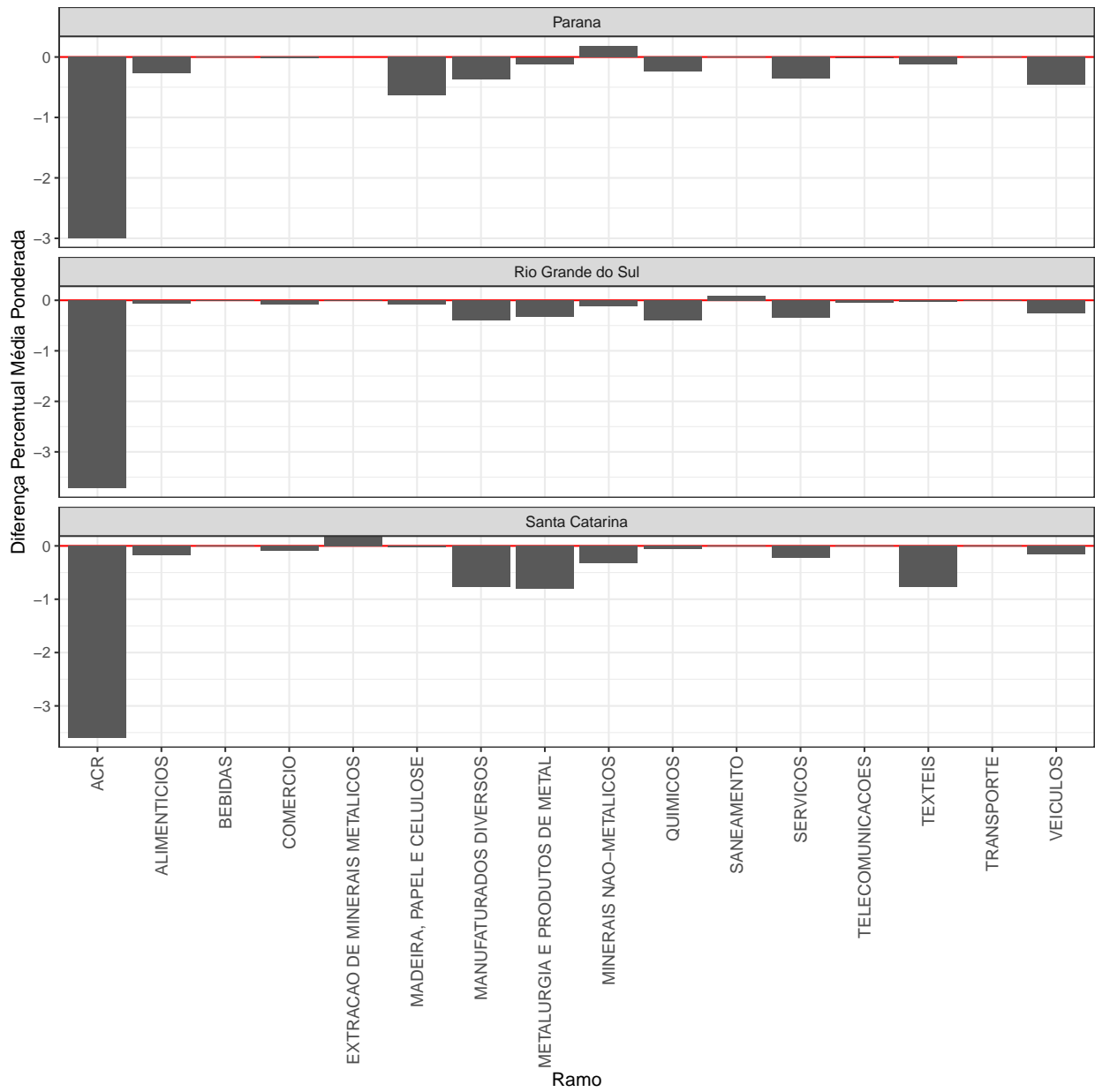


# Alteração do nível de consumo por Ramo, ponderado por proporção do consumo

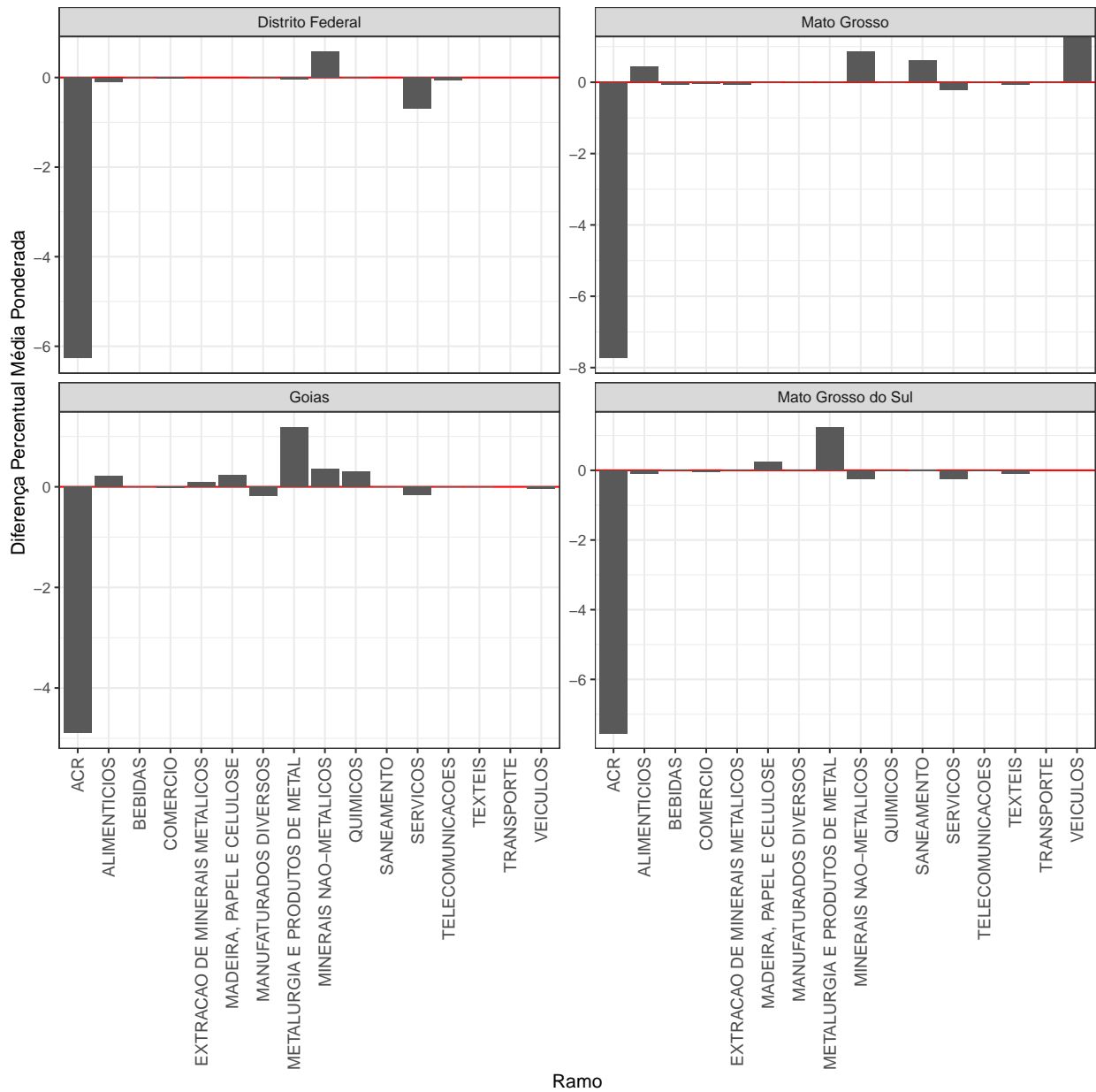
Região Sudeste



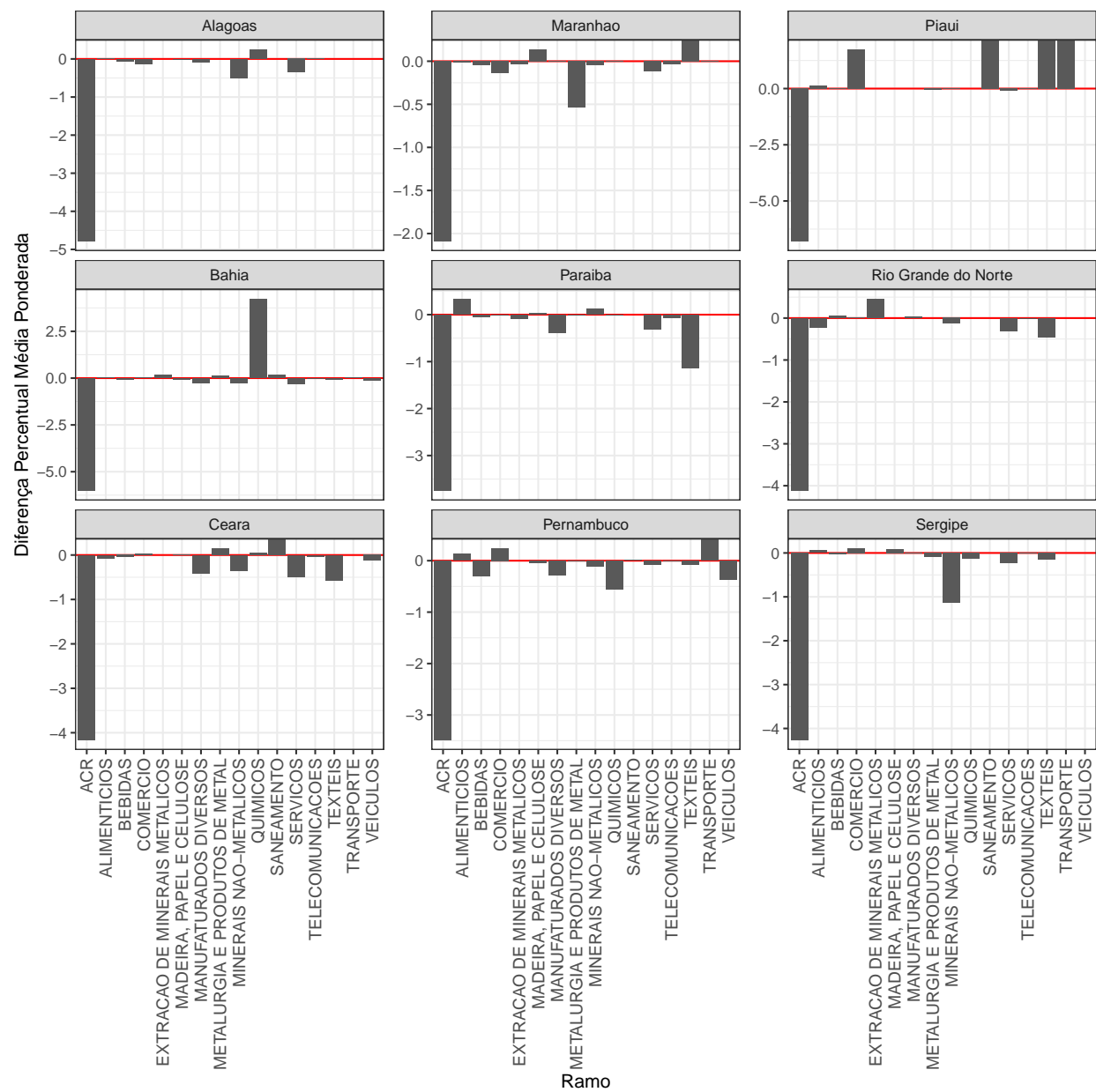
Região Sul



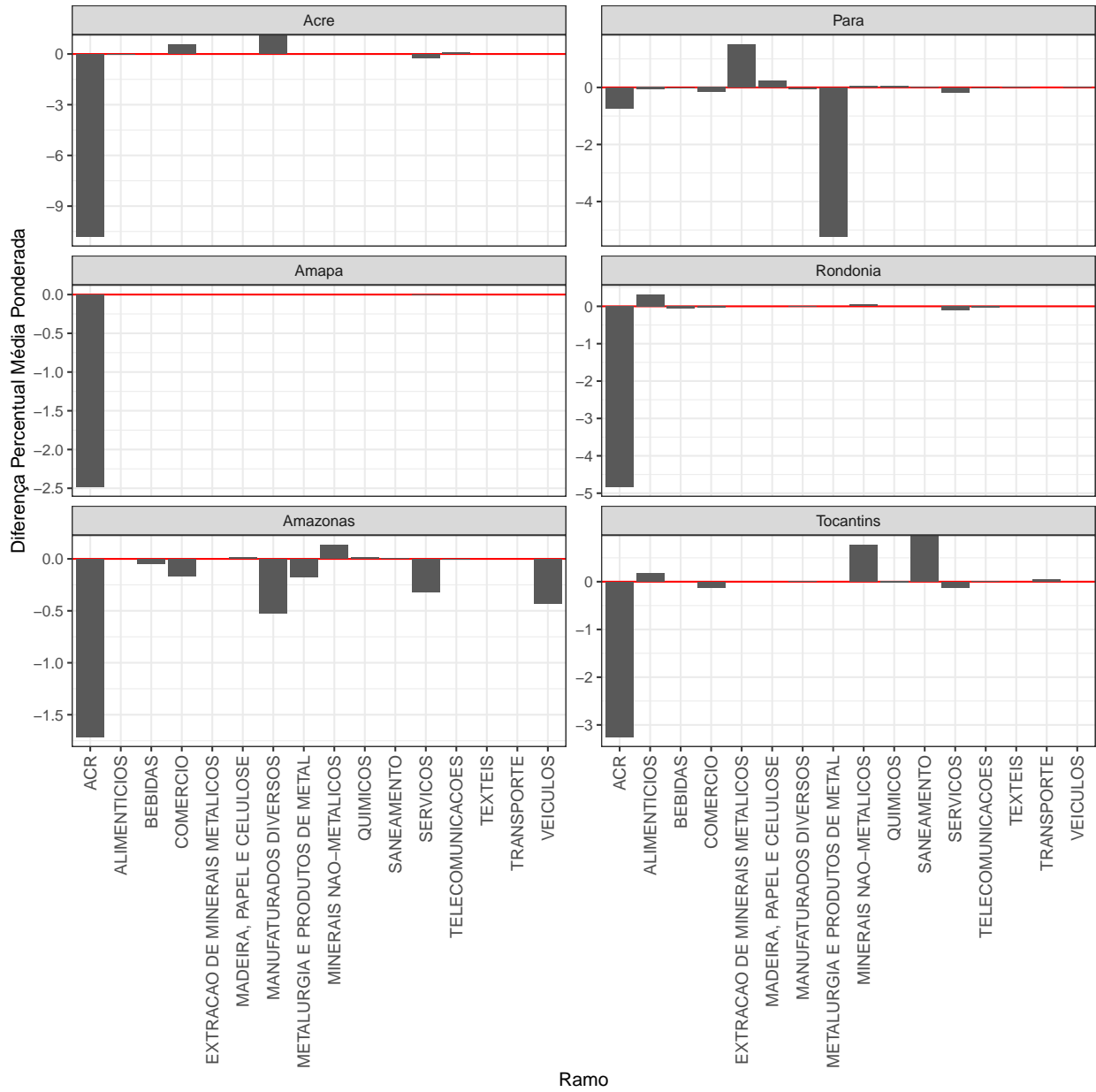
Região Centro-Oeste



## Região Nordeste



Região Norte





## Relação entre Série de Energia e Composição do PIB?

