

# WINDOW DRESSING BEHAVIOR OF THE U.S. GLOBAL SYSTEMICALLY IMPORTANT BANKS (G-SIBs)

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## Introduction

- Window dressing is a practice by which regulated entities adjust their activity around anticipated reporting or disclosure data, with the objective of appearing safer or less systemically important to regulators ([1]).
- Designated G-SIBs are subject to additional capital surcharges according to year-end systemic importance scores.
- G-SIB framework goal: enable banks to absorb greater losses without becoming insolvent.

This paper aims to examine the possible window-dressing behavior of the U.S. G-SIBs and offering insightful policy recommendations to bank regulators. Additionally, this paper also study the relationship between bank's systemic importance score and other macro variables.

Contributions:

- Systemic examination of window-dressing behavior among U.S. G-SIBs.
- Two approaches are proposed to address bank's potential window dressing behavior.

## G-SIB Framework

There are two types of methods to calculate the systemic importance score of a bank: Method 1 (International) and Method 2 (U.S.) specific. Banks designated as G-SIB are required to calculate Method 2 Scores. Based on Method 1 and 2 scores, corresponding G-SIB surcharges are assigned to banks. The final G-SIB surcharge of a bank is the highest of the Method 1 and 2 surcharges. The Method 1 score is weighted sum of 12 systemic importance indicator distributed into 5 different categories. The Method 1 weights and categories are shown in Table below.

Category	Individual Indicator	Weight
Size	Total Exposure	20%
	Intra-financial system assets	6.67%
Interconnectedness	Intra-financial system liabilities	6.67%
	Securities outstanding	6.67%
	Payment activity	6.67%
Substitutability	Asset under custody	6.67%
	Underwriting	6.67%
	OTC derivatives	6.67%
Complexity	Trading and available-for-sale securities	6.67%
	Level 3 assets	6.67%
	Cross-jurisdictional	Cross-jurisdictional claims
Cross-jurisdictional liabilities		10%

Indicator score is calculated according to formula below. Then, banks are assigned additional capital surcharges according to the total Method 1 score. Note that there is a cap of 500 for the substitutability category.

$$\text{Indicator Score}(bps) = \frac{\text{Bank Indicator Value}}{\text{Sample Total Value}} * 10000 \quad (1)$$

Method 1: Cut-off score and bucket thresholds are shown in Table below.

Bucket	Score Range	Capital Surcharge Rate
5	530-629	3.5%
4	430-529	2.5%
3	330-429	2.0%
2	230-329	1.5%
1	130-229	1.0%

The Method 2 only replaces the substitutability category with a metric of bank's use of short term wholesale funding. Indicators of Method 2 are measured by values rather than weights. Please refer to ([2]) and ([3]) for more details.

## Model

In the sample data, there are 26 U.S. banks. Among them, 8 of them have been designated as G-SIB. They are JP Morgan, Citibank, Bank of America, Goldman Sachs, Wells Fargo, Bank of New York Mellon, Morgan Stanley, and State Street. Considering the availability of certain variables data, the sample period is restricted to 2016Q2-2019Q4. This paper is going to examine the window dressing behavior both by bank and systemic importance category, for both Method 1 and Method 2. (Only Method 1 Graphs are shown below)

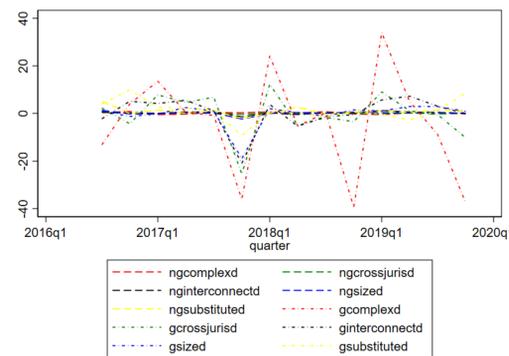


Fig. 1: Method 1 Score Differences by Category.

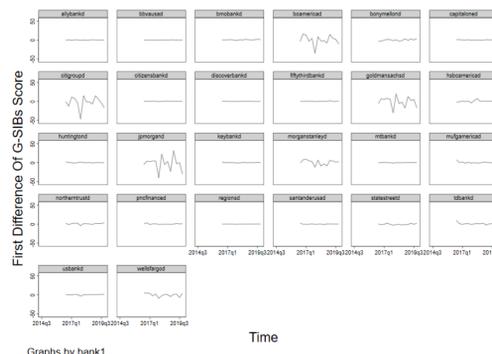


Fig. 2: Method 1 Score Differences by Bank.

Linear regression are used to examine the potential relationship between bank's system importance scores and quarters, controlled variables, and core macroeconomic variables. Specifications are as below:

$$\Delta \text{Score}_{i,t} = \alpha_i + \alpha_{year} + \beta_1 [Q_4 \times GSIB_i] + \Gamma' V_{i,t} + \epsilon_{i,t} \quad (2)$$

$$\Delta \text{Score}_{i,t} = \alpha_i + \alpha_{year} + \beta_1 [GSIB_i \times \text{Close}_{i,t-4}] + \beta_2 \text{Close}_{i,t-4} + \Gamma' V_{i,t} + \epsilon_{i,t} \quad (3)$$

$$\Delta \text{Score}_{i,t} = \alpha_i + \alpha_{year} + \beta_1 \text{ReposGR}_{i,t} + \beta_2 [Q_4 \times \text{ReposGR}_{i,t}] + \Gamma' V_{i,t} + \epsilon_{i,t} \quad (4)$$

$$\Delta \text{Score}_{i,t} = \alpha_i + \alpha_{year} + \beta_1 \text{RgdpGR}_t + \beta_2 [Q_4 \times GSIB_i] + \beta_3 [GSIB_i \times \text{RgdpGR}_t] + \beta_4 [Q_4 \times \text{RgdpGR}_t] + \beta_5 [Q_t \times GSIB_i \times \text{RgdpGR}_t] + \Gamma' V_{i,t} + \epsilon_{i,t} \quad (5)$$

$$\Delta \text{Score}_{i,t} = \alpha_i + \alpha_{year} + \beta_1 \text{VIX}_t + \beta_2 [Q_4 \times GSIB_i] + \beta_3 [GSIB_i \times \text{VIX}_t] + \beta_4 [Q_4 \times \text{VIX}_t] + \beta_5 [Q_t \times GSIB_i \times \text{VIX}_t] + \Gamma' V_{i,t} + \epsilon_{i,t} \quad (6)$$

$\Delta \text{Score}_{i,t}$  is the quarterly differences in systemic importance score of bank (category)  $i$  at time  $t$ .  $\alpha_i$  and  $\alpha_{year}$  are bank (category) and year fixed effects.  $Q_4$  is a dummy variable, which is equal to 1 if it is the fourth quarter of a year and zero otherwise.  $GSIB_i$  is bank type dummy variable and equal to 1 if the bank is designated as G-SIB.  $V$  is a set of control variables.  $\text{Close}_{i,t-4}$  is a dummy variable that is equal to 1 if the previous fourth quarter importance score is close to bucket thresholds with certain degrees (10, 20, 30).  $\text{RgdpGR}$ ,  $\text{VIX}$ , and  $\text{ReposGR}$  stand for the RGDP growth rate, VIX index, and Repo growth rate.

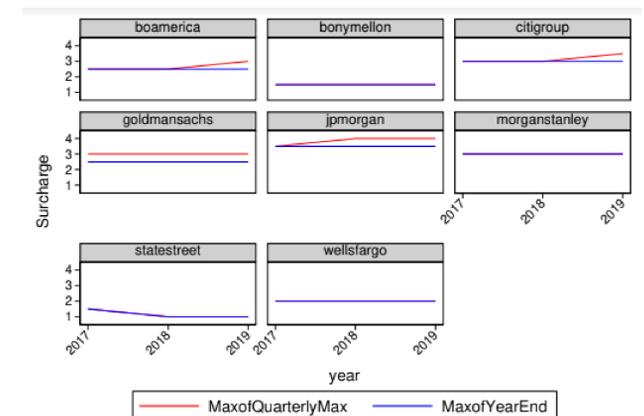
## Results

My major findings are as below (Given shortage of shortage of wholesale funding metric data, regressions are mostly run for Method 1 scores):

- This study suggests the existence of a window-dressing behavior among U.S. G-SIB banks.
- For 8 U.S. G-SIB banks, the Method 2 is always higher than the corresponding Method 1 score. Additional capital surcharges assigned according to Method 2 is greater or equal than the corresponding Method 1 capital surcharges.
- Suppression of category scores in year-end varies and complexity is the most reduced.
- Being close to bucket threshold in previous year-end has a significant negative impact on current year systemic importance scores.
- Macroeconomic activity, financial market conditions, and repo growth rate have significant effect on importance scores in certain cases.

## Proposed Approaches

Noticed that 4 of the 8 U.S. G-SIBs have been conducting widow-dressing. To address, the paper proposed Quarterly Average and Quarterly Maximum rather than year-end approach to assign capital surcharges. Quarterly Maximum approach successfully targets those 4 banks.



## Acknowledgements

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