The Aggregate and Distributional Effects of Financial Globalization: Evidence from Macro and Sectoral Data

Davide Furceri, Prakash Loungani and Jonathan D. Ostry
International Monetary Fund

IMF Annual Research Conference, Washington DC, November 2-3, 2017

Motivation: Two Puzzles

- **Financial globalization works well in theory, not so well in practice**
  Theory predicts output (efficiency) gains from both trade and financial globalization, but gains from latter have proven difficult to demonstrate.

  o   Gopinath (October 2017): "There is now a new consensus that capital account liberalizations are a mixed blessing"

  o   Krugman (May 2017): "financial globalization hasn't been the force for good that trade has been"

  o   Martin Wolf (2004): "the gains [of financial globalization] have been questionable and the costs of crises enormous."

  o   Arteta, Eichengreen and Wyplosz (2001): evidence of a positive association between capital account liberalization and growth is "decidedly fragile."

- **Enormous literature on impact of trade on inequality, while financial globalization gets a free pass.**
  Financial globalization can affect inequality in theory; shouldn't we look at whether it does so in practice?

Contributions

We search for output effects: giving theory a chance

• Use both de jure and de facto measures of financial globalization
  - o   Large changes in de jure measures = policy changes
  - o   Supplement with information on capital flows (de facto measure)

• Use sectoral as well as aggregate data, since causal effects hard to establish in macro data
  - o   Use of country-time fixed effects allows for cleaner identification of effects of financial globalization
  - o   Better identification of channels through which effects of financial globalization operate

• Trace out evolution of output in aftermath of major financial globalization episodes rather than look for permanent growth effects (Henry 2007).

We don't turn a blind eye to distributional effects: taking the theory seriously

•   Impact on Gini coefficient (aggregate data) and labor shares (aggregate and sectoral data)

Bottom-line: Somewhat stronger evidence of output effects than in previous work, but also strong distributional effects.

Identification of policy-driven globalization episodes

- Policy restrictions on cross-border transactions are reported in the *IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)* database.

- Information in *AREAER* is combined by Chinn and Ito to construct an index of capital account restrictions.

- Examining behavior of output (or inequality) before and after removal of major policy restrictions requires information on when restrictions were lifted; difficult to do for large sample of countries.

- We infer timing of major policy changes by looking at large changes in the Chinn-Ito index (Kaopen)
    - Assume liberalization takes place when, for a given country at a given time, the annual change in the Kaopen indicator exceeds by two standard deviations the average annual change over all observations.

➔ This criterion identifies 224 episodes (over 1970-2010)—the majority occurring in the early 90s (when inequality started to increase).

➔ Examples: several EU countries in the early 1990s; India and Brazil in the mid- and late 1990s.

Baseline:

$$g_{it} = a_i + \gamma_t + \sum_{j=0}^{l} \delta_k D_{i,t-k} + \sum_{k=0}^{l} \vartheta_k X_{i,t-k} + \varepsilon_{it}$$

Role of country-specific factors:

$$g_{it} = a_i + \gamma_t + \sum_{j=0}^{l} \vartheta_j X_{i,t-j} + \sum_{j=0}^{l} \delta_j^- D_{i,t-j} G(z_{it}) + \sum_{j=0}^{l} \delta_j^+ D_{i,t-j} (1 - G(z_{it})) + \varepsilon_{it}$$

g = change in log output (Gini);

D = liberalization episode;

X = <u>baseline</u>: current and lagged reforms in trade, current account, product and labor market;
   <u>robustness checks</u>: baseline + growth expectations + other controls.

G= smooth transition function (G = 1 ⇔ (extremely) low financial liberalization/inclusion, crises).

Estimates based on OLS and IV (liberalization in trading partners and initial degree of openness) for 149 countries for the period 1970-2010.

$$g_{jit} = a_{ij} + \gamma_{it} + \rho_{jt} + \sum_{k=0}^{l} \delta_k S_j D_{i,t-k} + \varepsilon_{jit}$$

i (country); j(sector); t (time).
g = change in log output (labor share of income);
D = liberalization episode;
S = external financial dependence (EFD); natural-layoff rate (NL); EOS between capital and labor.

Theoretical predictions:
(i) output (labor share) effects are larger for industries with higher EFD—*demand for external funds;*
(ii) labor share effects are larger for industries with higher NL—*bargaining power;*
(iii) labor share effects are larger for industries with EOS>1—*cost of capital.*

Estimates based on OLS using sectoral data for 23 AEs, 25 industries, 1975-2010.

Results—macro level data

Insignificant output gains but significant increases in inequality

Panel 1. Output (%)
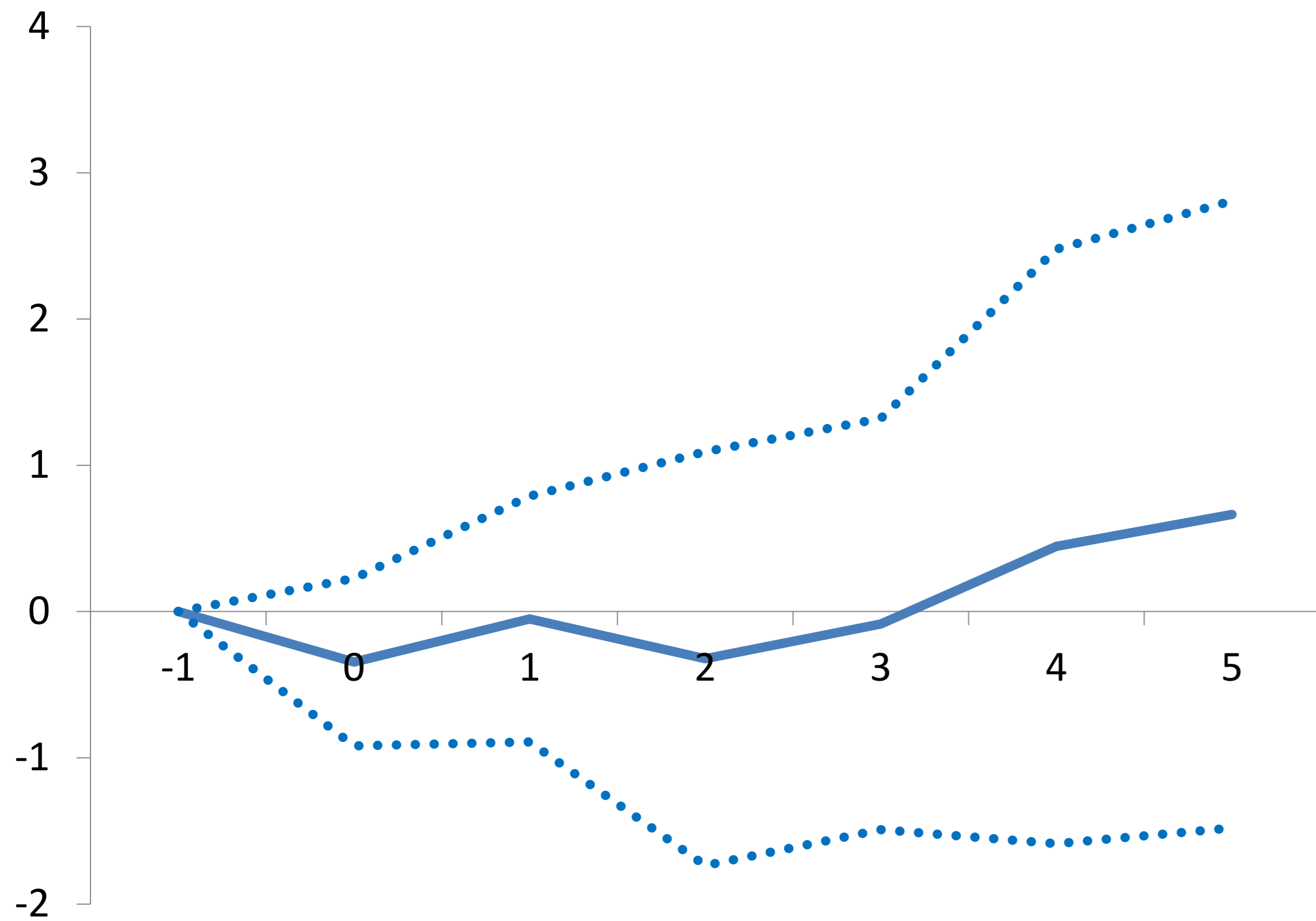
Panel 2. Gini (%)
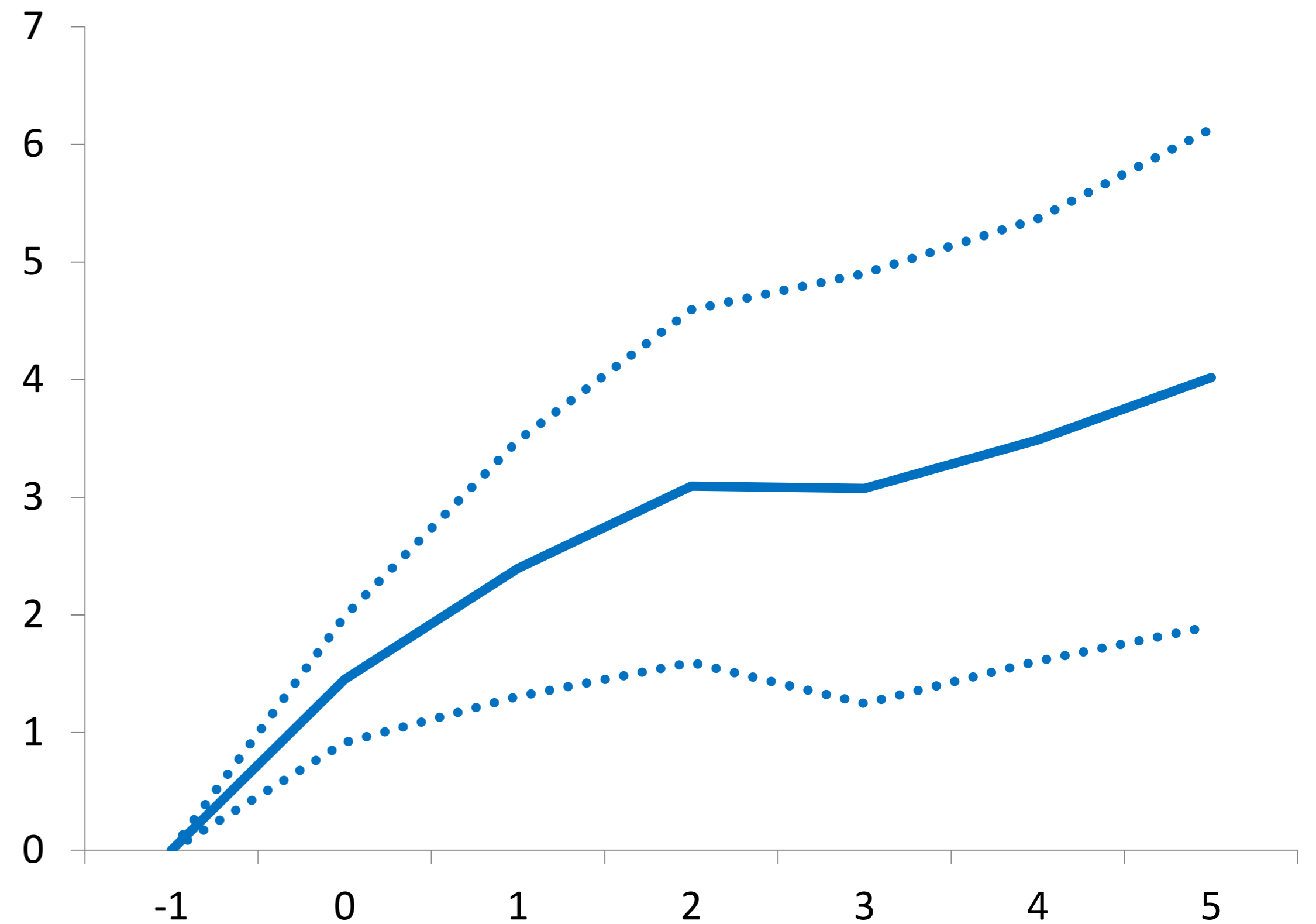
Note: The solid lines indicate the response of output (inequality) to a capital account liberalization episode; dotted lines correspond to 90 percent confidence bands. The x-axis denotes time. t=0 is the year of the reform.

Panel 1. Output (%)—controlling for growth expectations
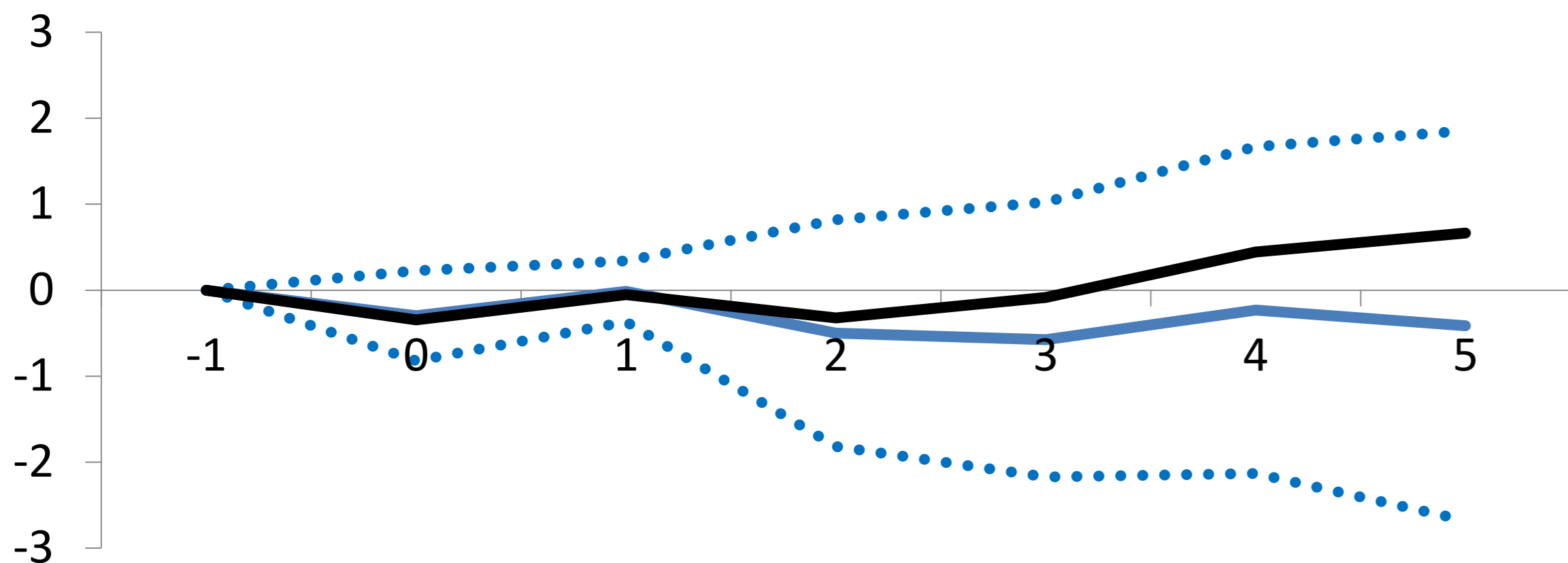
Panel 2. Gini (%)—controlling for growth expectations
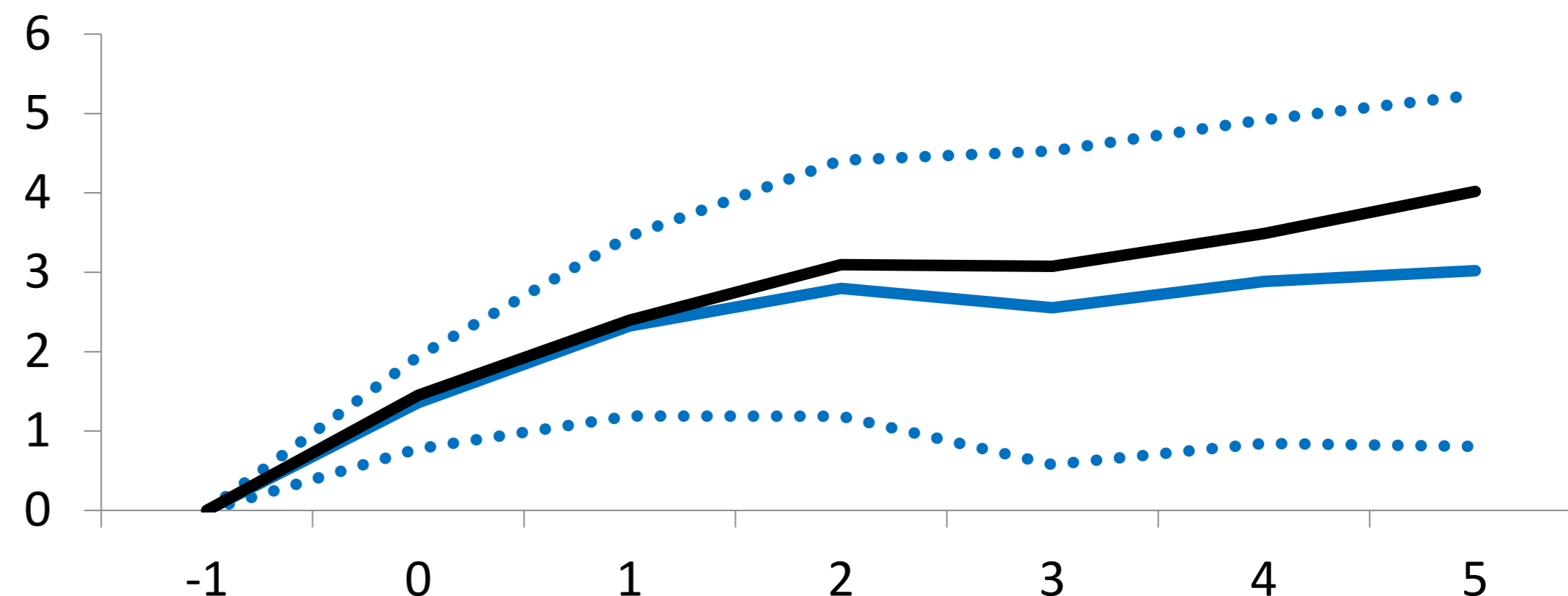
Panel 3. Output (%)—IV
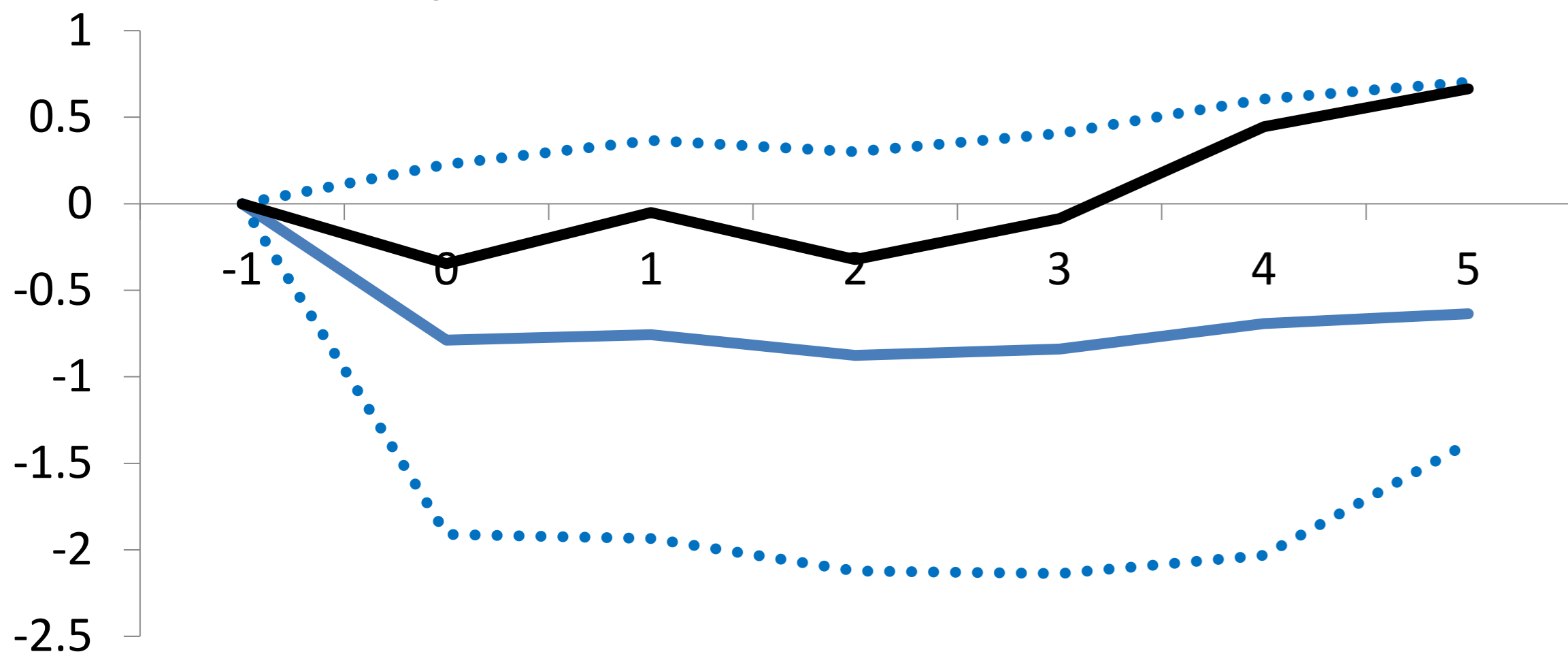
Panel 4. Gini (%)—IV
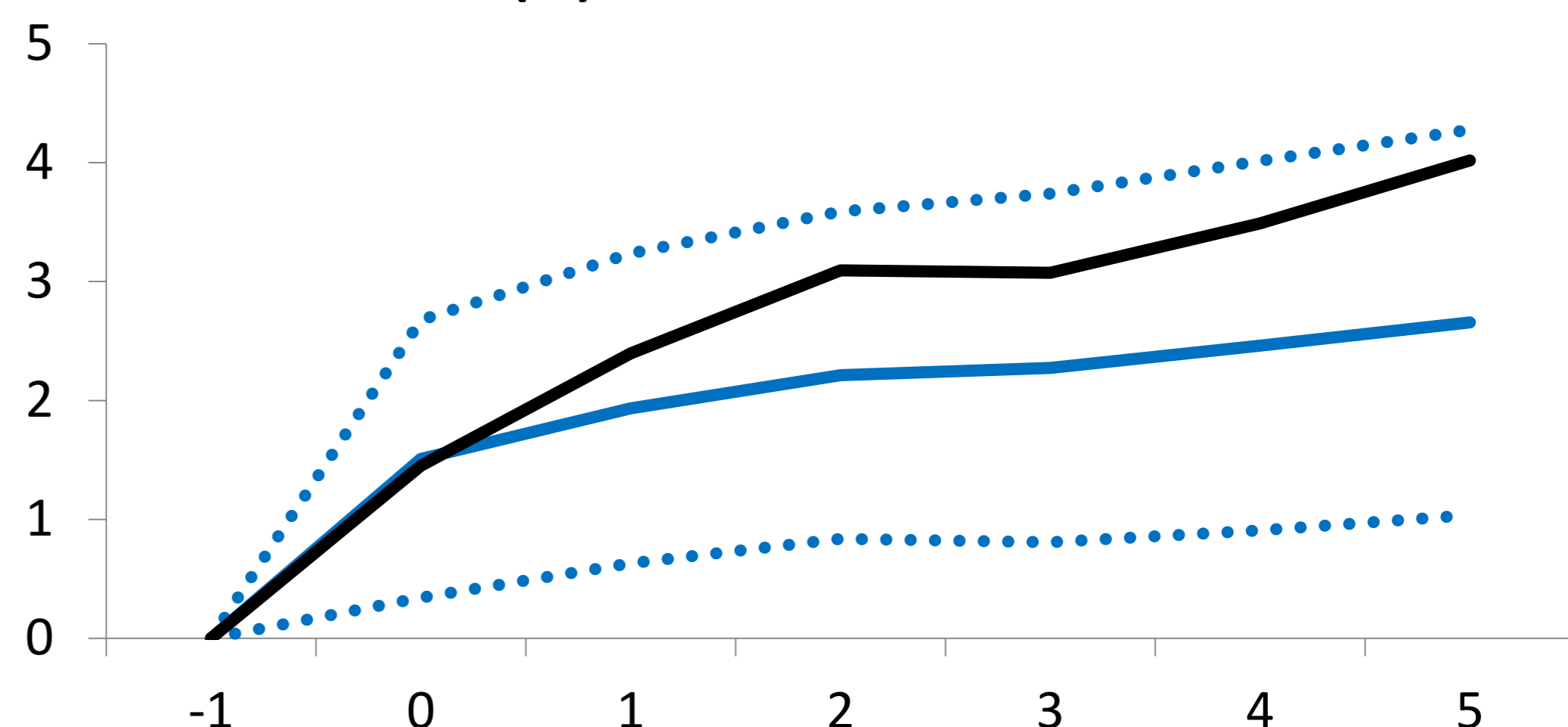
Note: The solid lines indicate the response of output (inequality) to a capital account liberalization episode; dotted lines correspond to 90 percent confidence bands. The solid black lines denote the baseline effect.

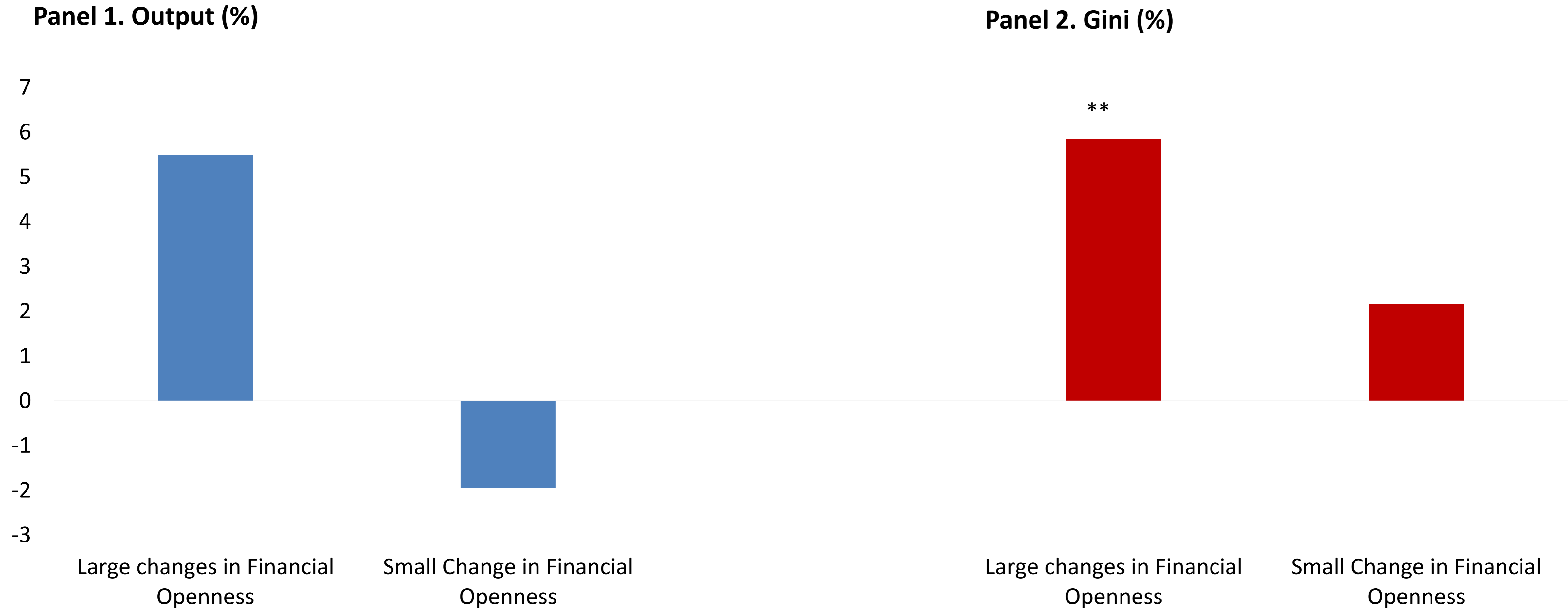# But output & distributional effects depend on institutions

Panel 1. Output (%)
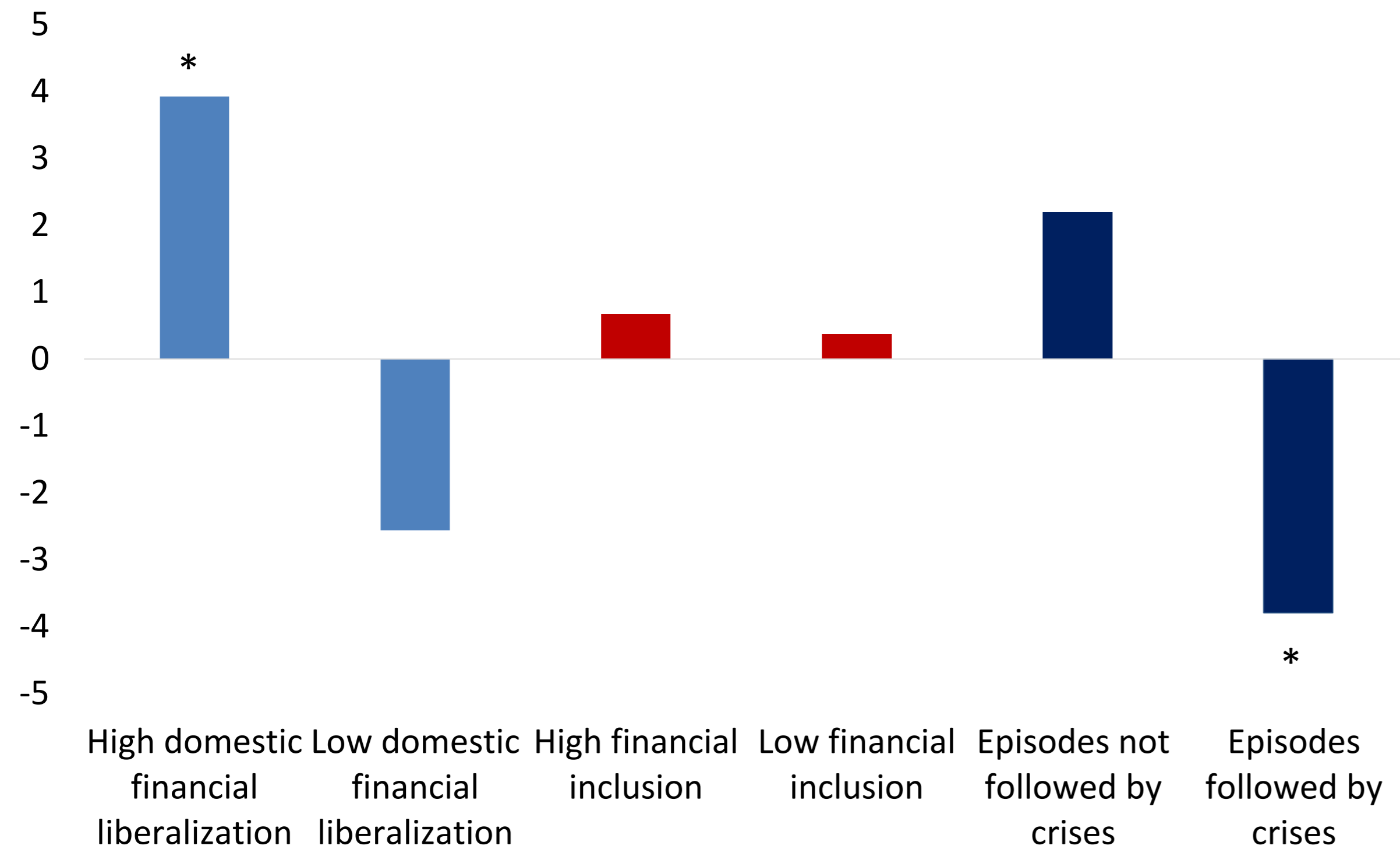
Panel 2. Gini (%)
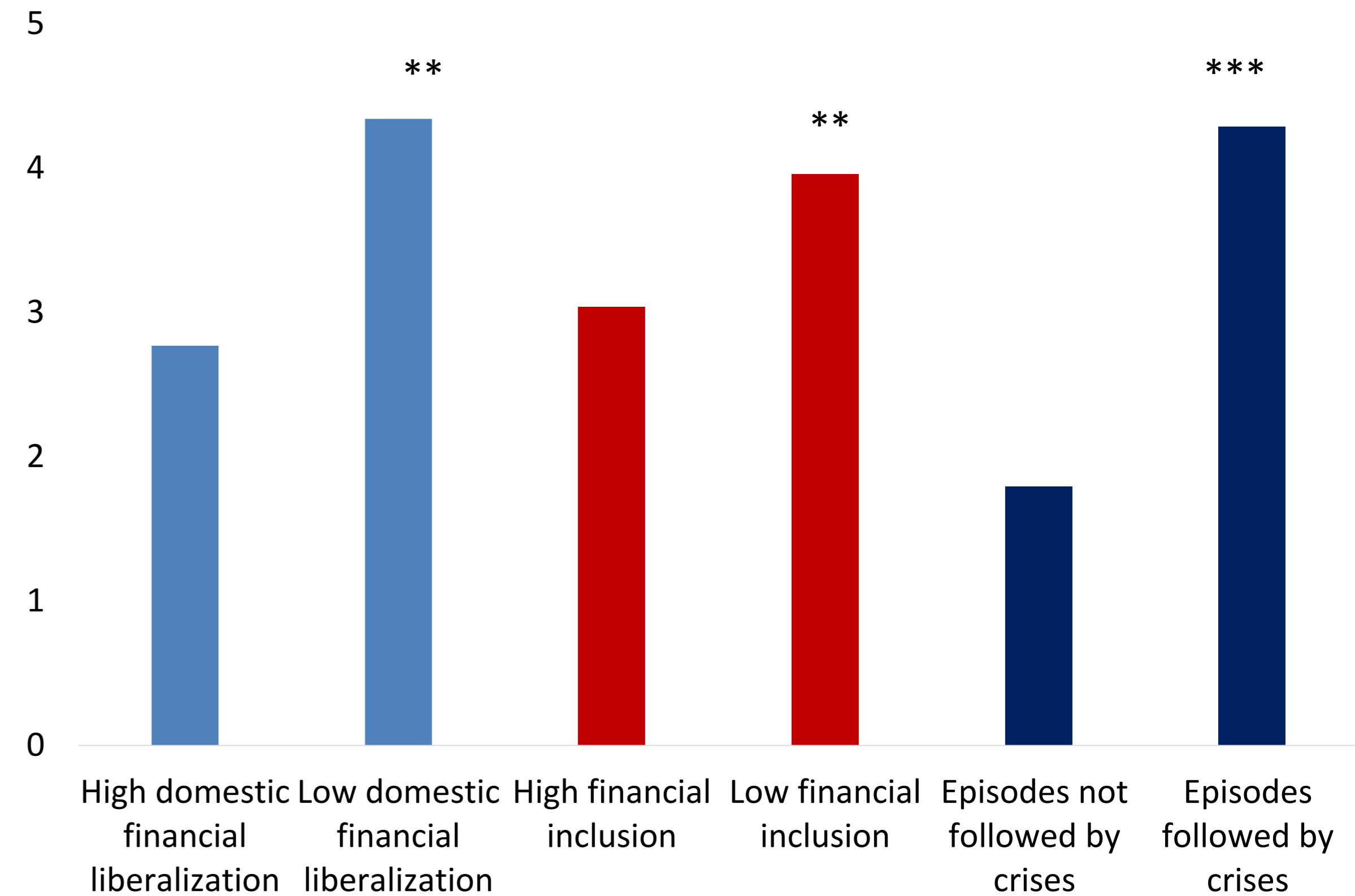
Note: Medium-term effects (that is, after five years of the reform). ***,**,* denote significance at 1 percent, 5 percent and 10 percent, respectively.

… and on the extent of capital flows (*de facto* measure)

Panel 1. Output (%)

Panel 2. Gini (%)

Note: Medium-term effects (that is, after five years of the reform). ***,**,* denote significance at 1 percent, 5 percent and 10 percent, respectively. Blue (red) bars denote the medium-term response (that is, five years after the reform) of output (inequality). Flows defined as the cumulative 5-year change in total asset and liabilities as percent of GDP after the reform.
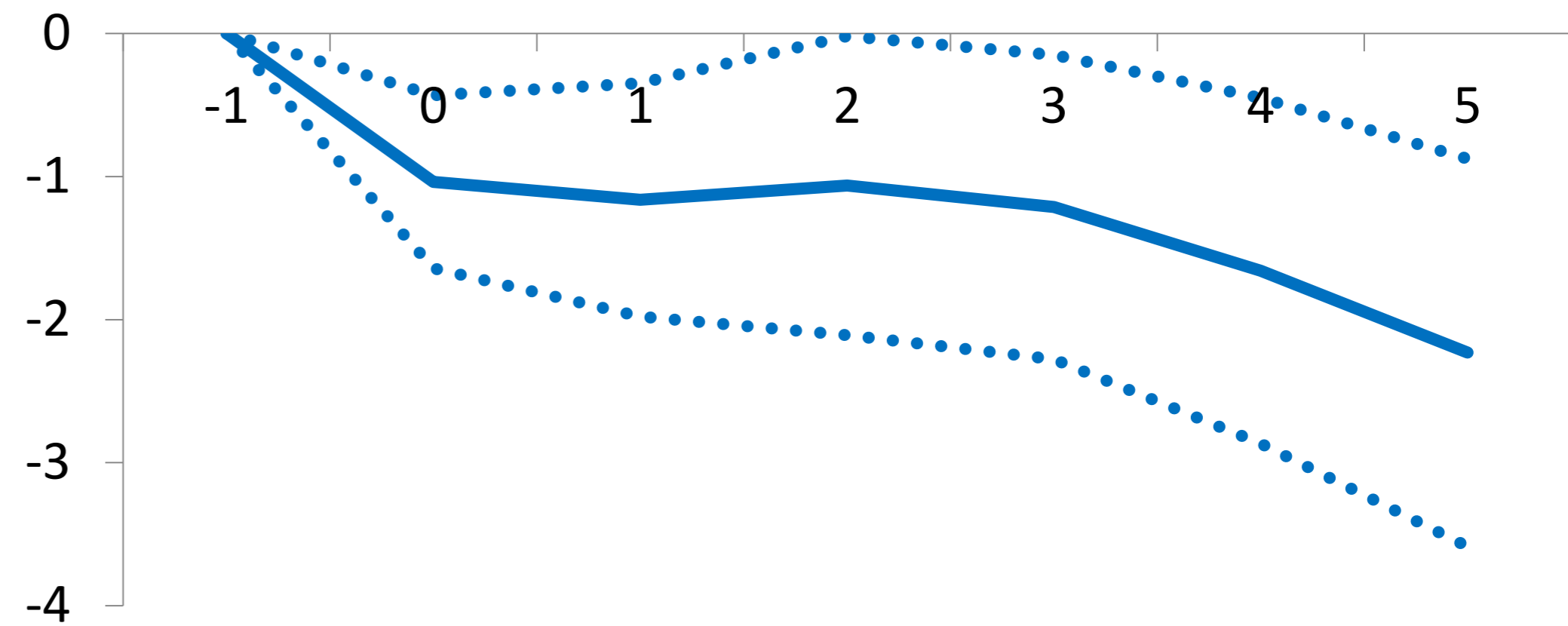
Results—sectoral level data

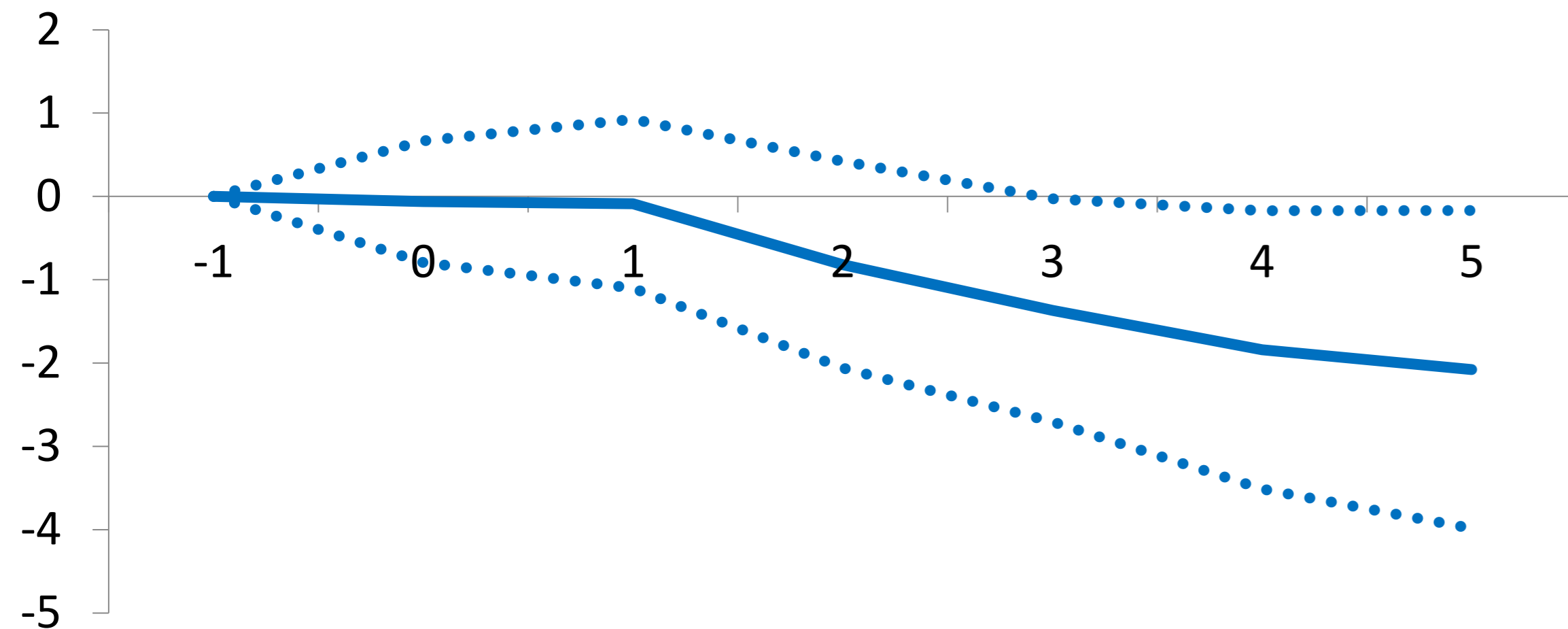# Short-term output gains, significant decline in labor share

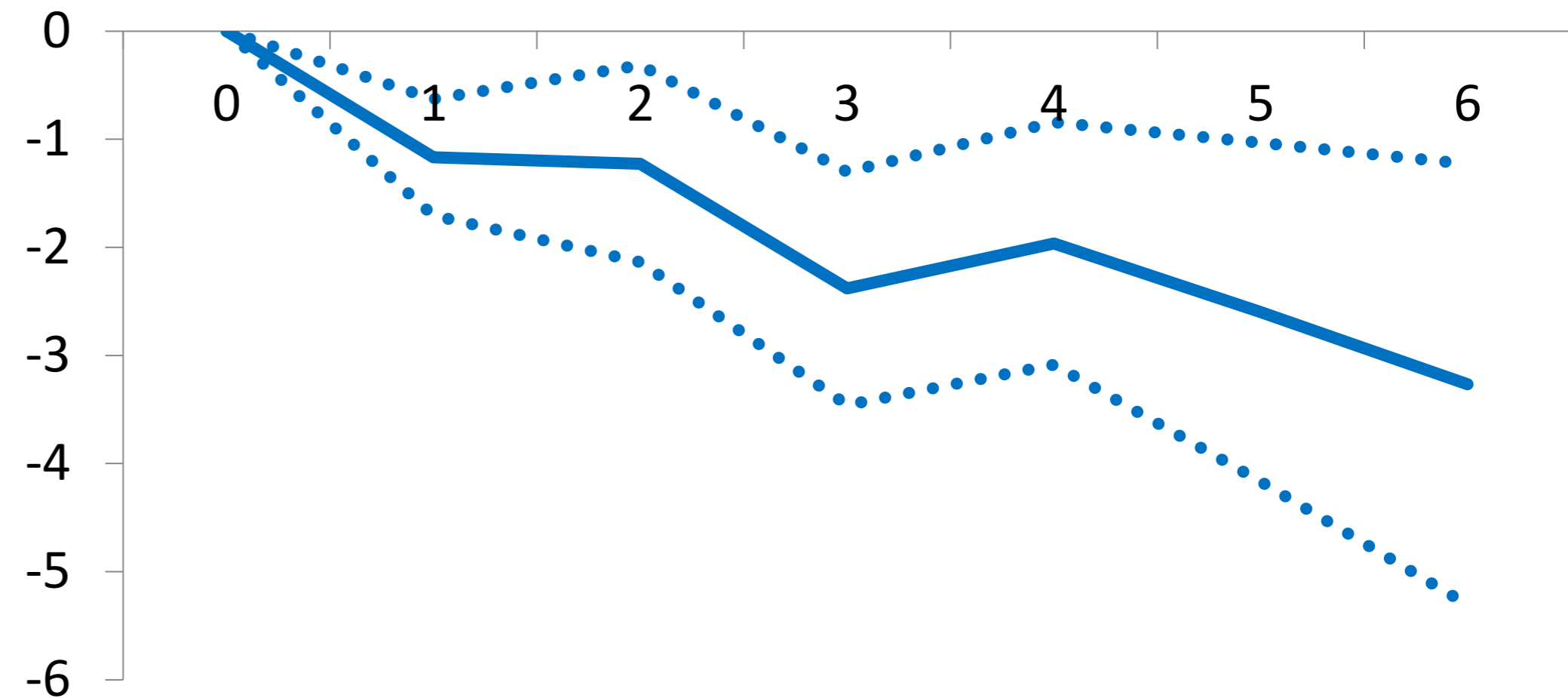**Panel 1. Output (%)—external financial dependence**
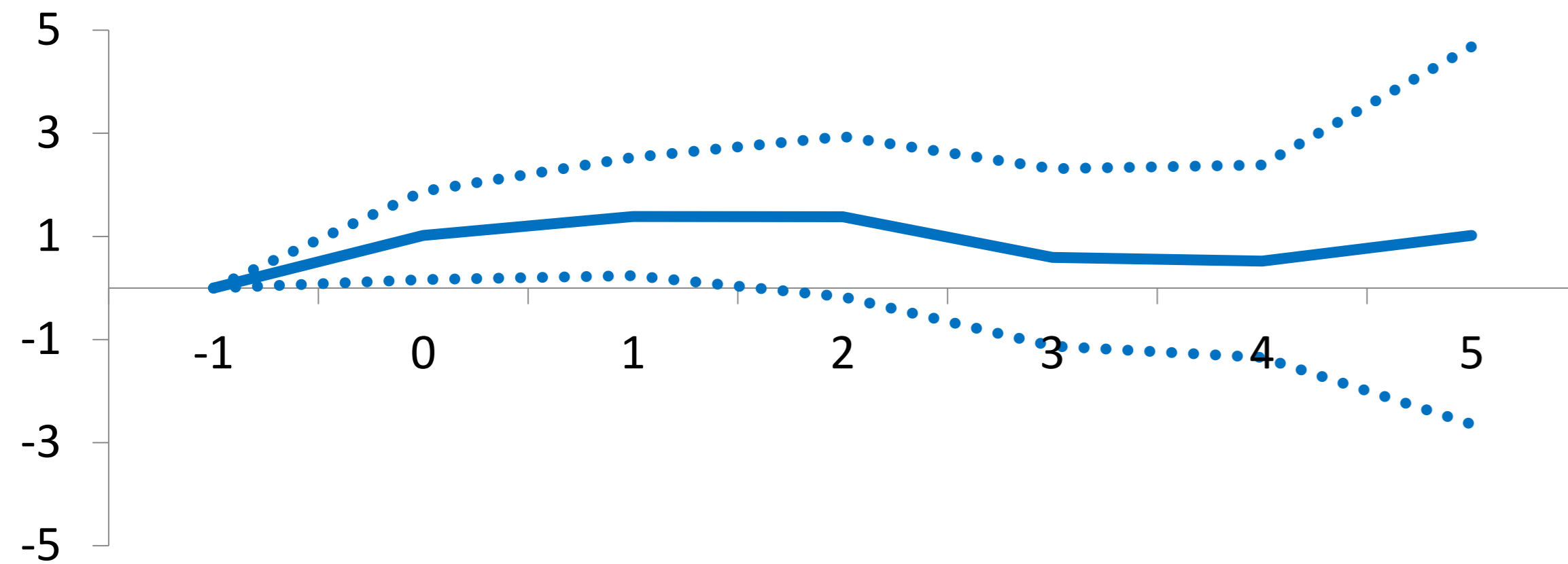
Panel 2. Labor share (ppt)—external financial dependence

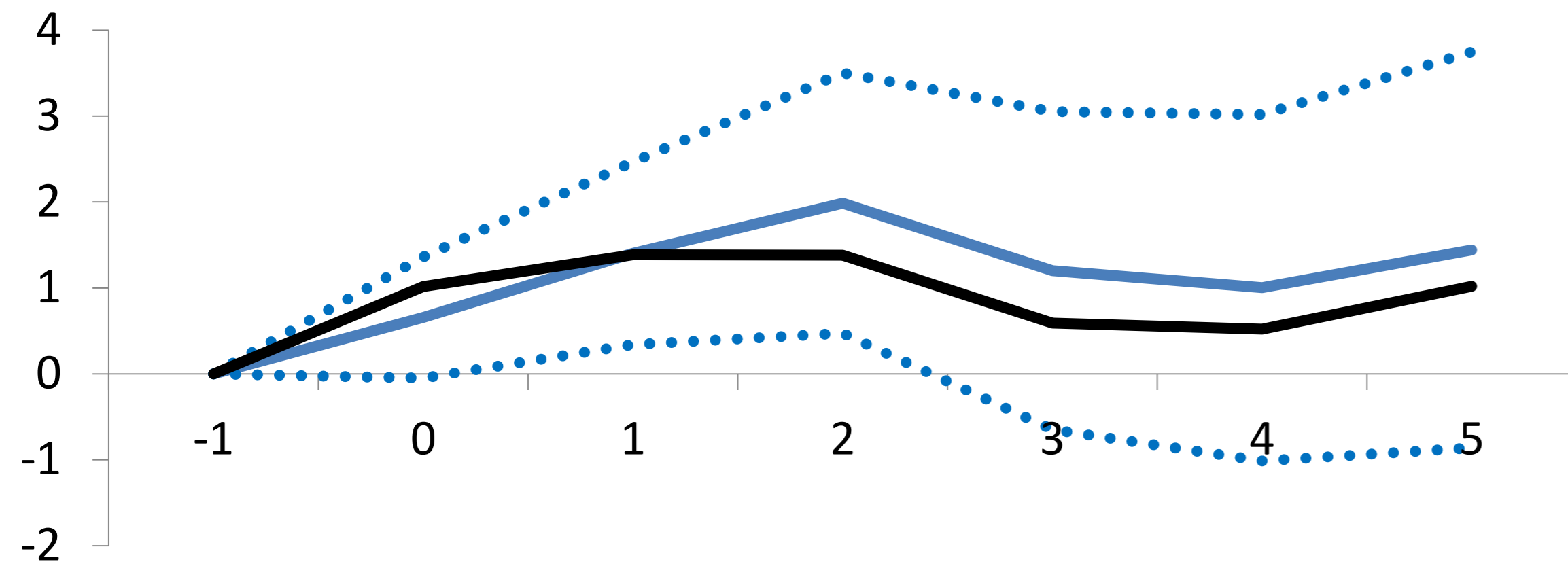**Panel 3. Labor share (ppt)—natural layoff rate**
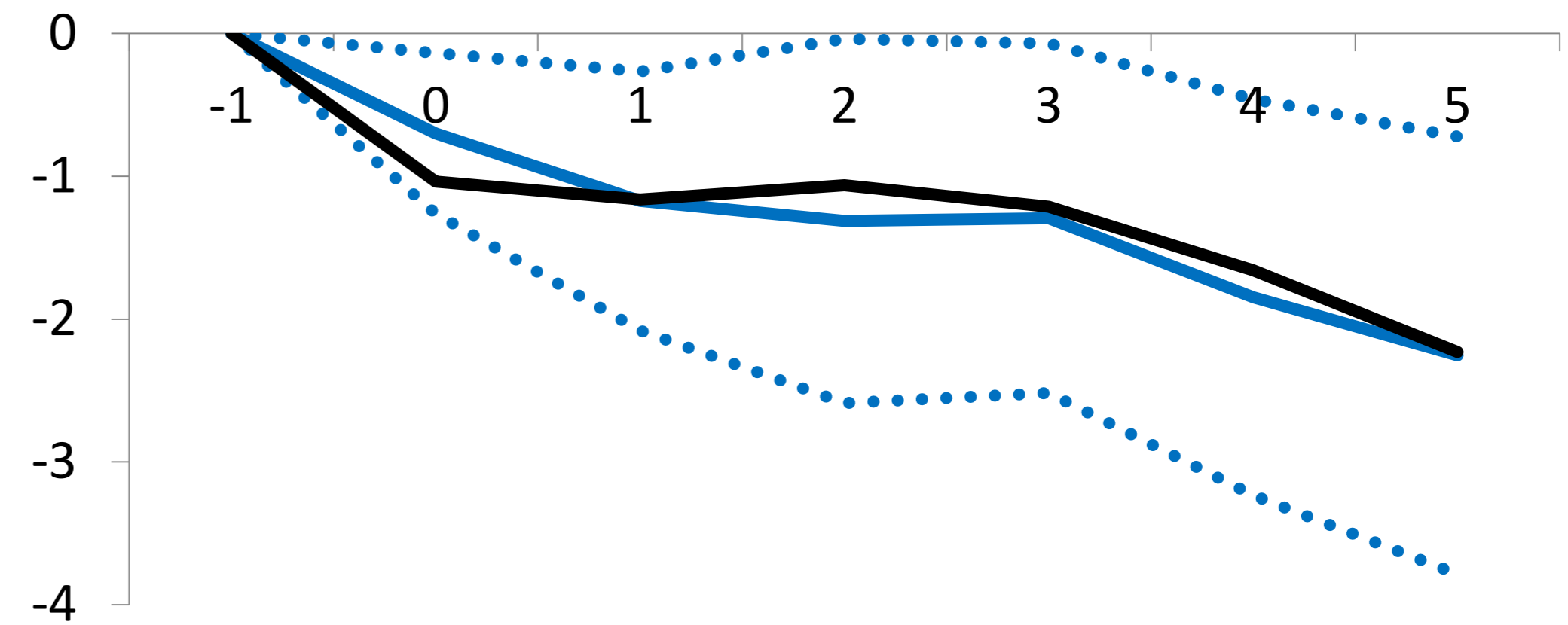
Panel 4. Labor share (ppt)—EOS >1

Note: Solid line denotes the differential effect of capital account liberalization episodes between a sector with a high external financial dependence/layoff rate/elasticity of substitution (at the 75th percentile) and a sector with a high external financial dependence/layoff rate/elasticity of substitution (at the 25th percentile).

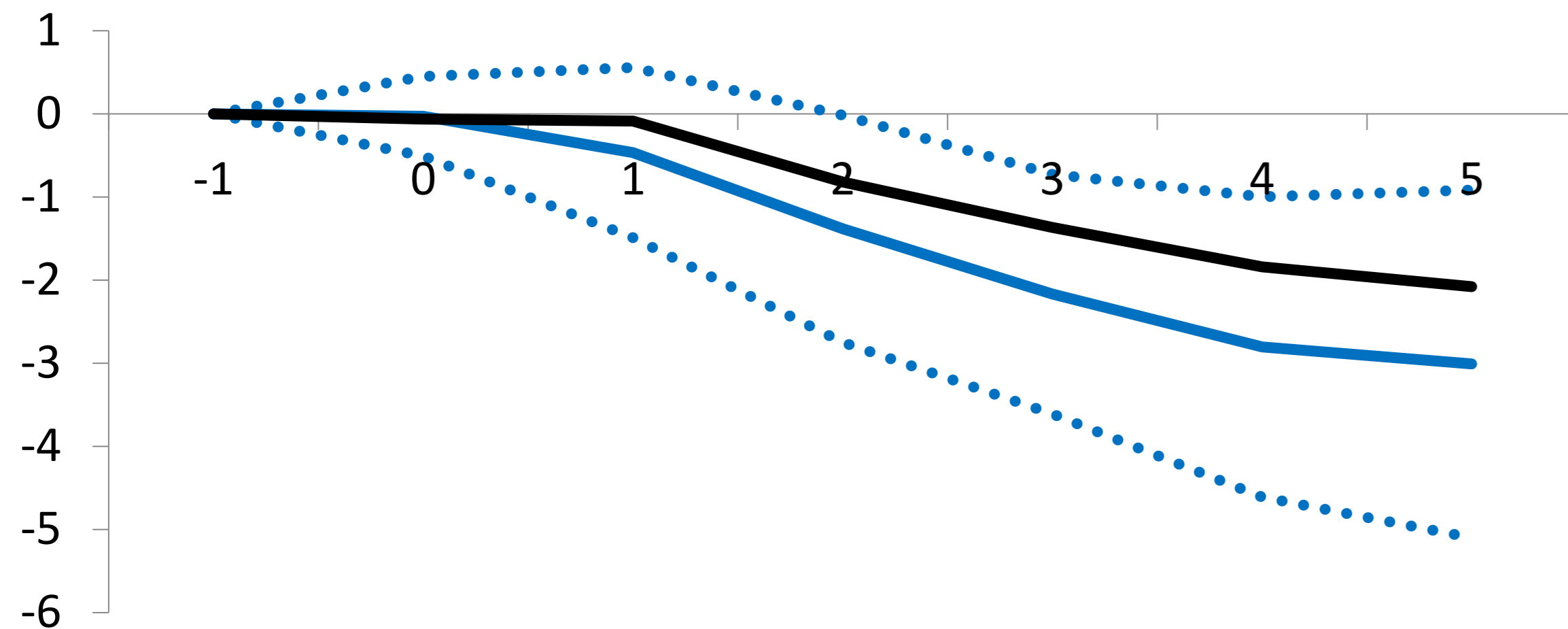# Results robust to controlling for domestic finance reforms...

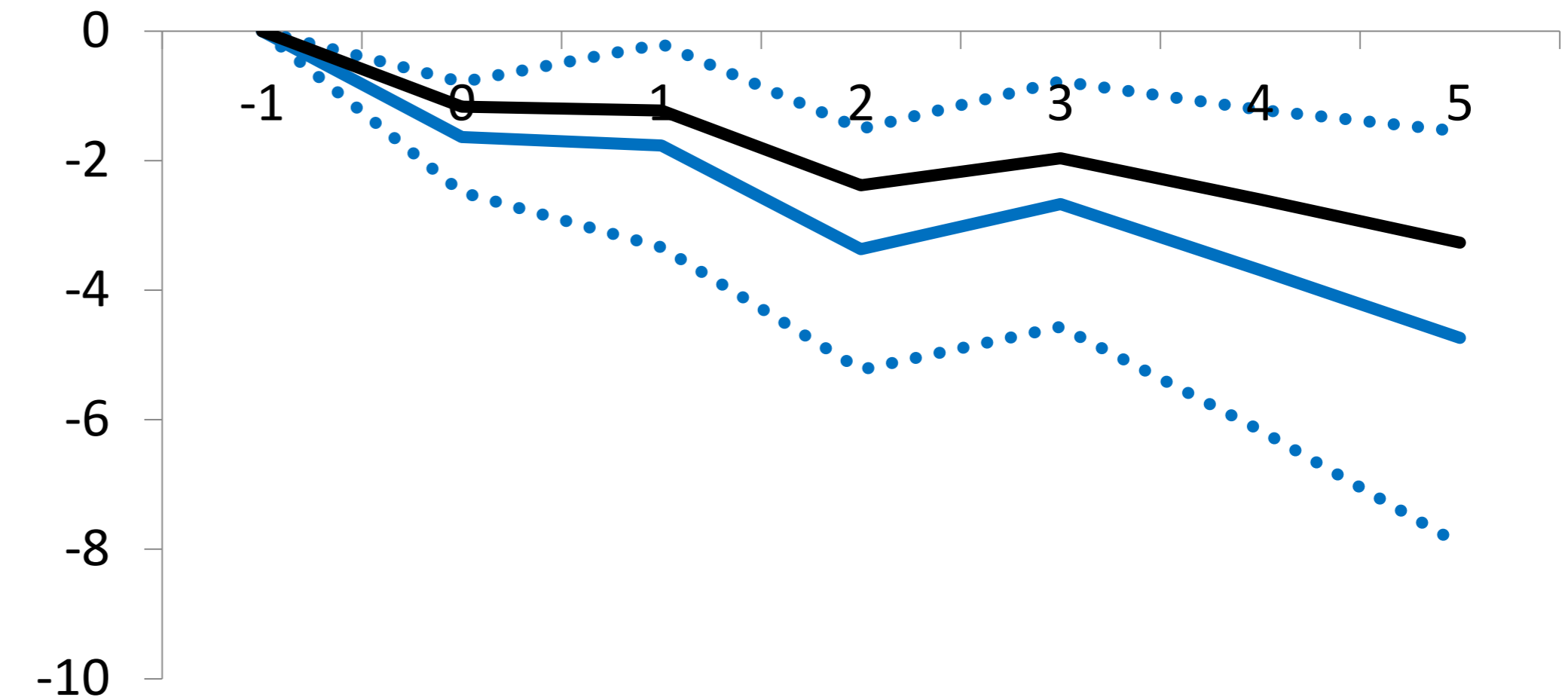**Panel 1. Output (%)—external financial dependence**

Panel 2. Labor share (ppt)—external financial dependence

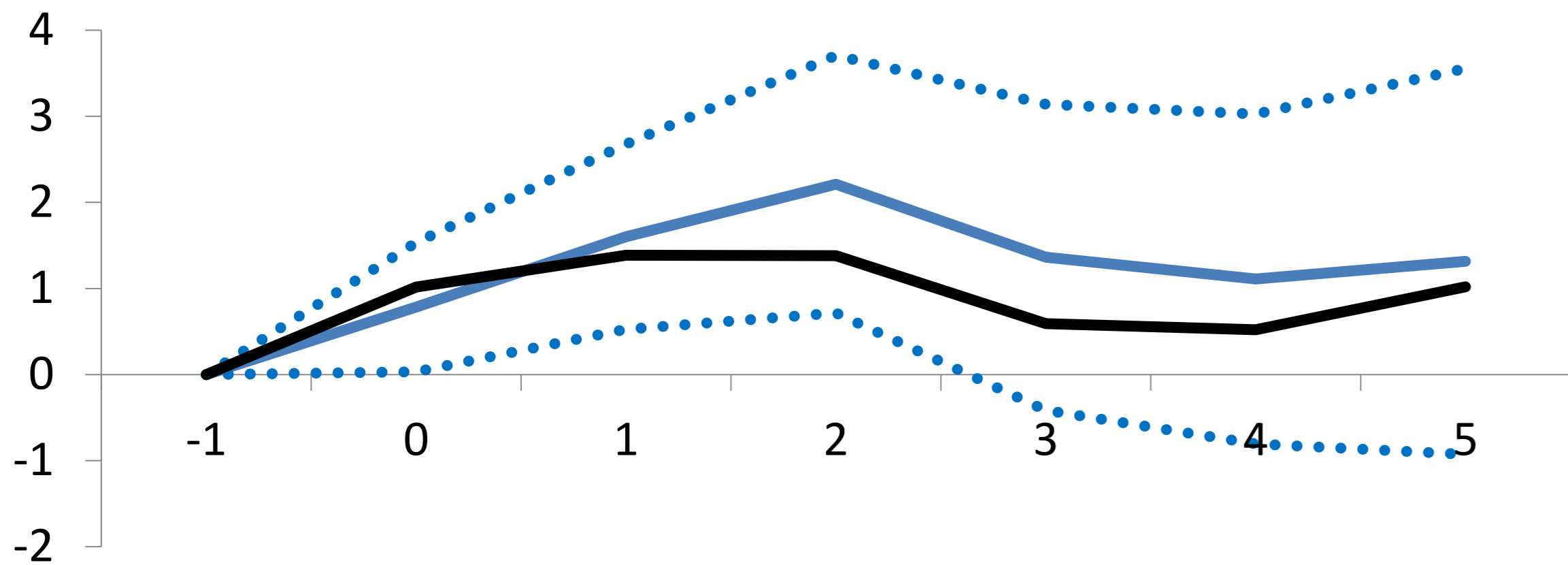**Panel 3. Labor share (ppt)—natural layoff rate**
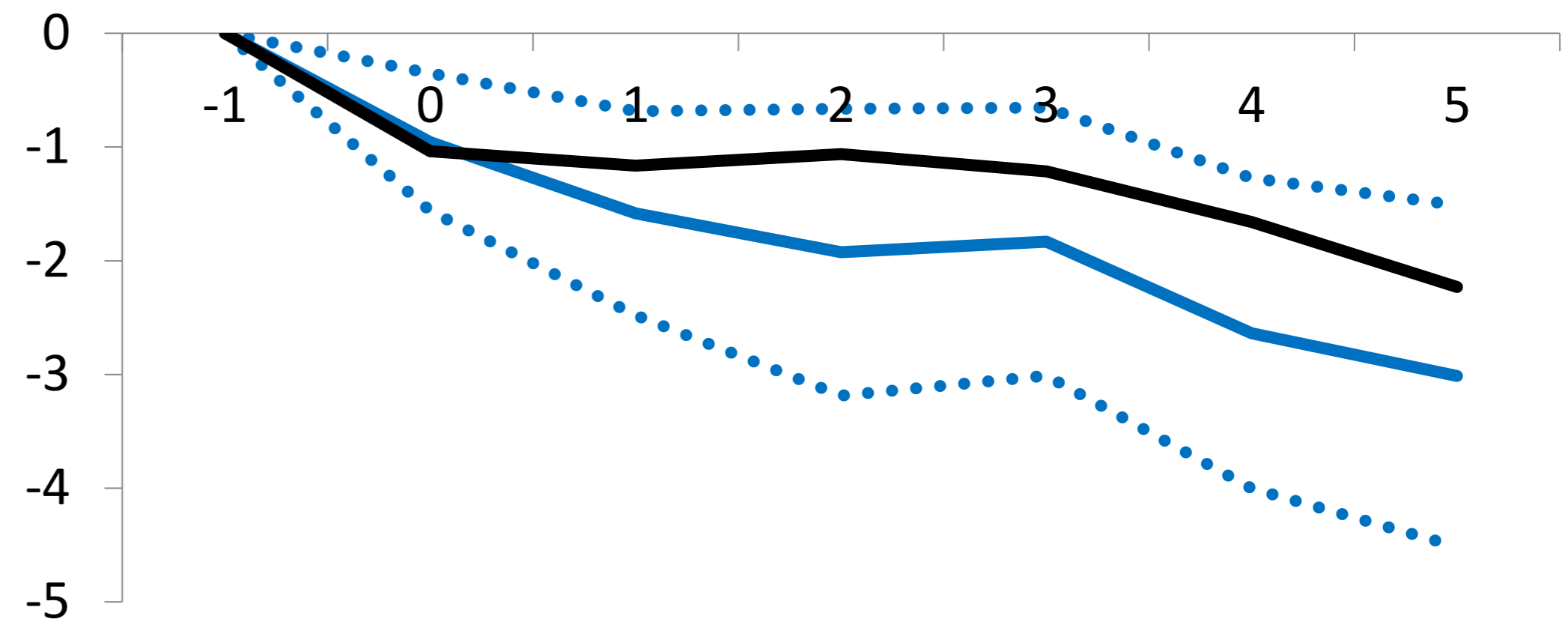

Panel 4. Labor share (ppt)—EOS >1

Note: Solid blue line denotes the differential effect of capital account liberalization episodes between a sector with a high external financial dependence/layoff rate/elasticity of substitution and a sector with a high external financial dependence/layoff rate/elasticity of substitution). Black lines denote baseline effects.
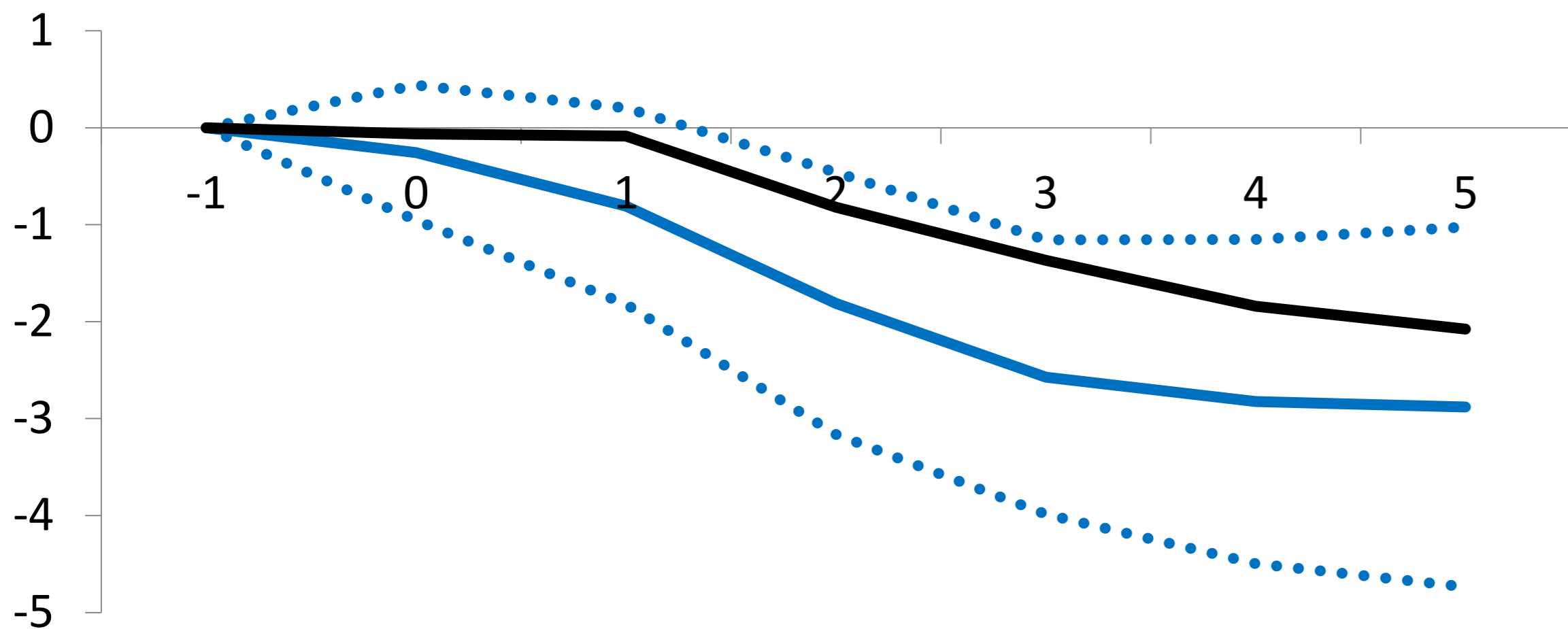
... trade reforms ...
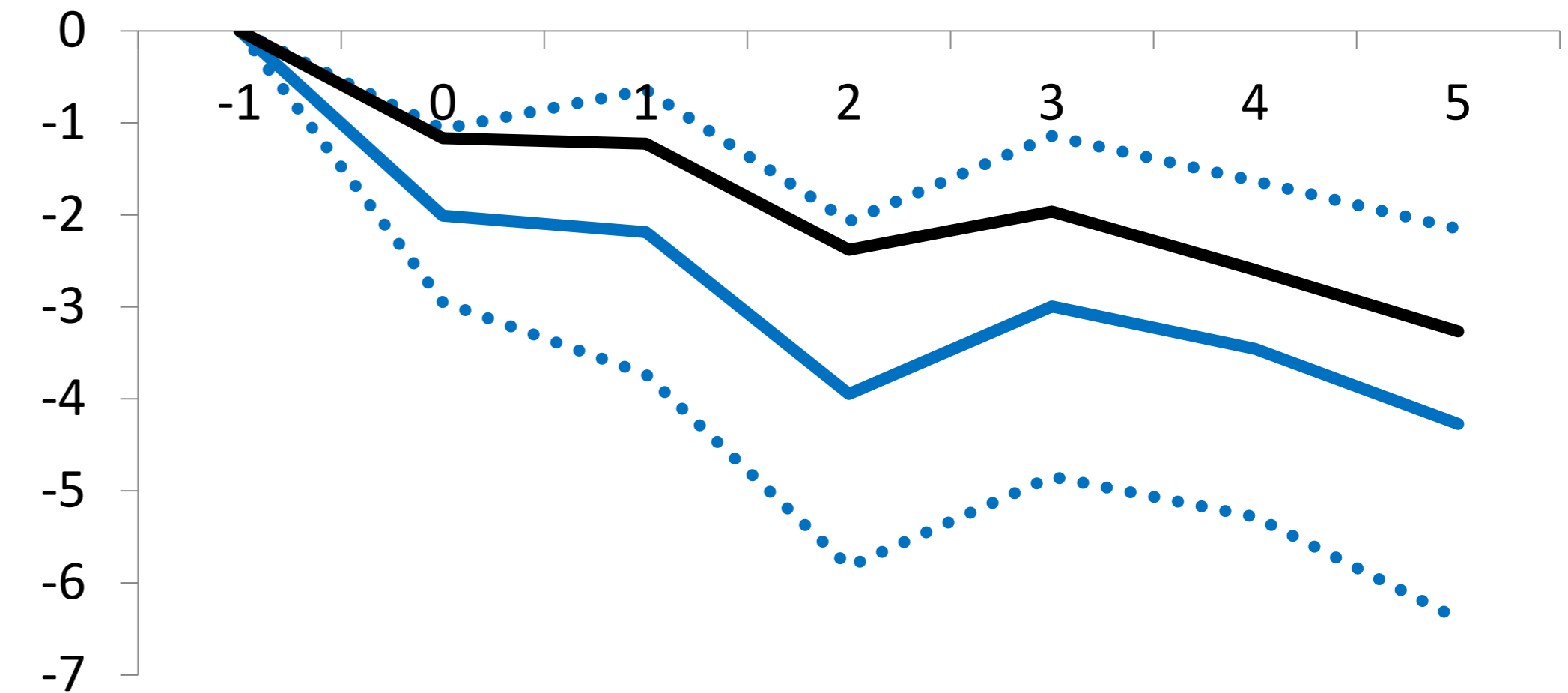
Panel 1. Output (%)—external financial dependence

Panel 2. Labor share (ppt)—external financial dependence

Panel 3. Labor share (ppt)—natural layoff rate

Panel 4. Labor share (ppt)—EOS >1

Note: Solid blue line denotes the differential effect of capital account liberalization episodes between a sector with a high external financial dependence/layoff rate/elasticity of substitution and a sector with a high external financial dependence/layoff rate/elasticity of substitution). Black lines denote baseline effects.

... and technological change

Panel 1. Output (%)—external financial dependence

Panel 2. Labor share (ppt)—external financial dependence

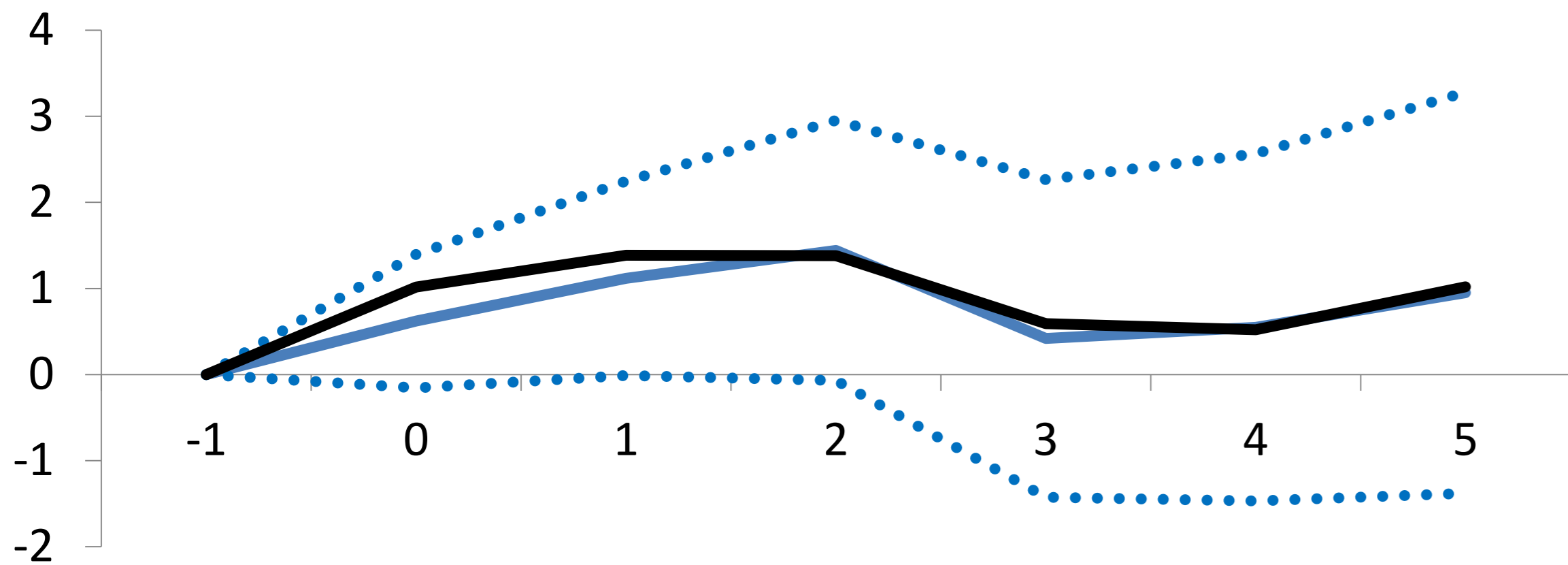**Panel 3. Labor share (ppt)—natural layoff rate**
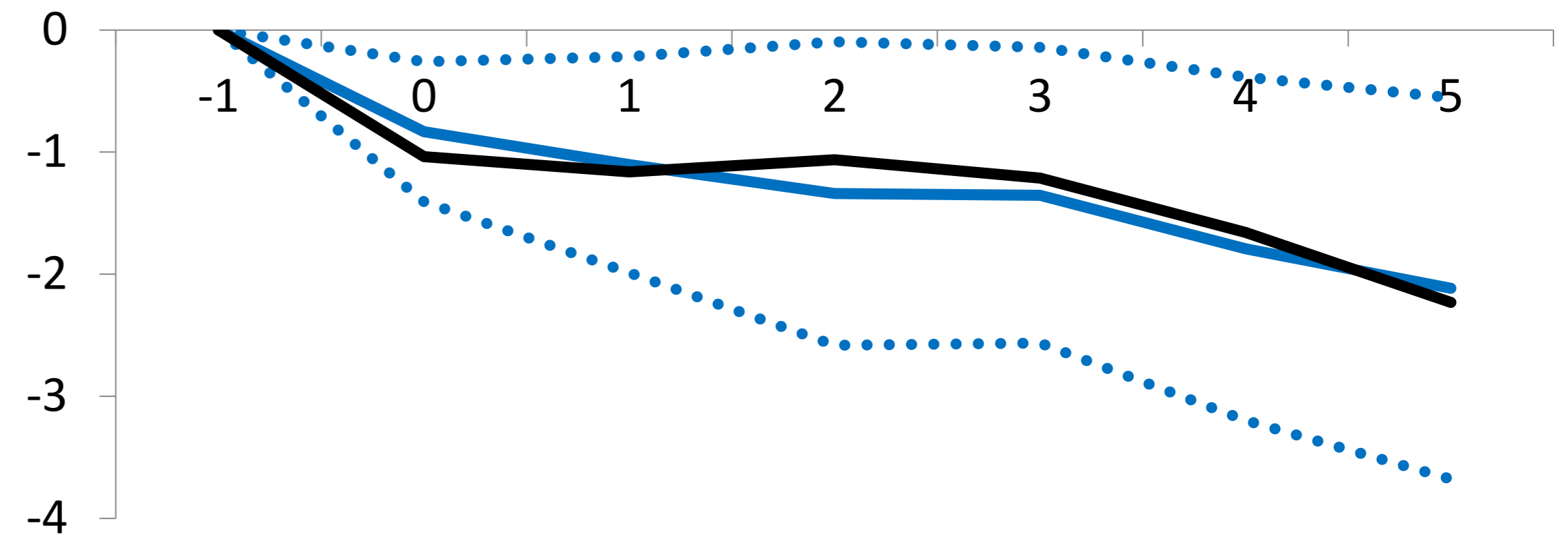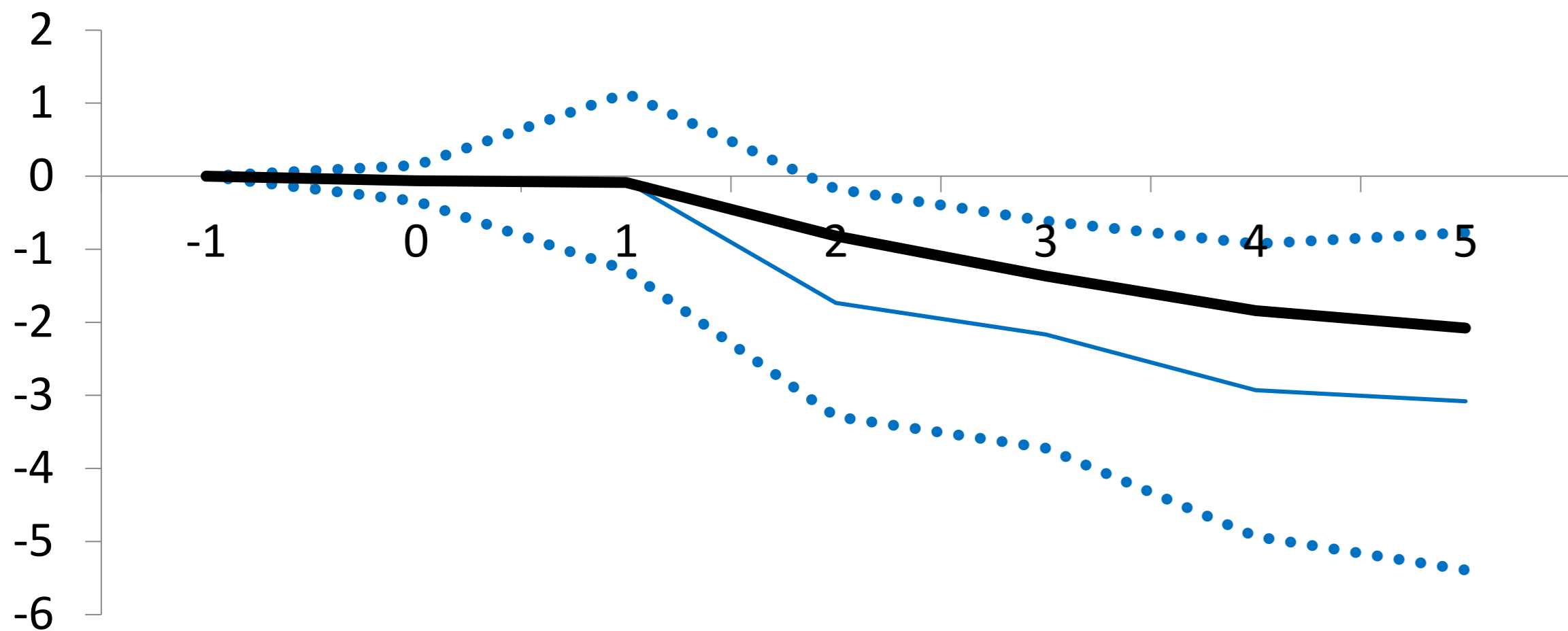

Panel 4. Labor share (ppt)—EOS >1
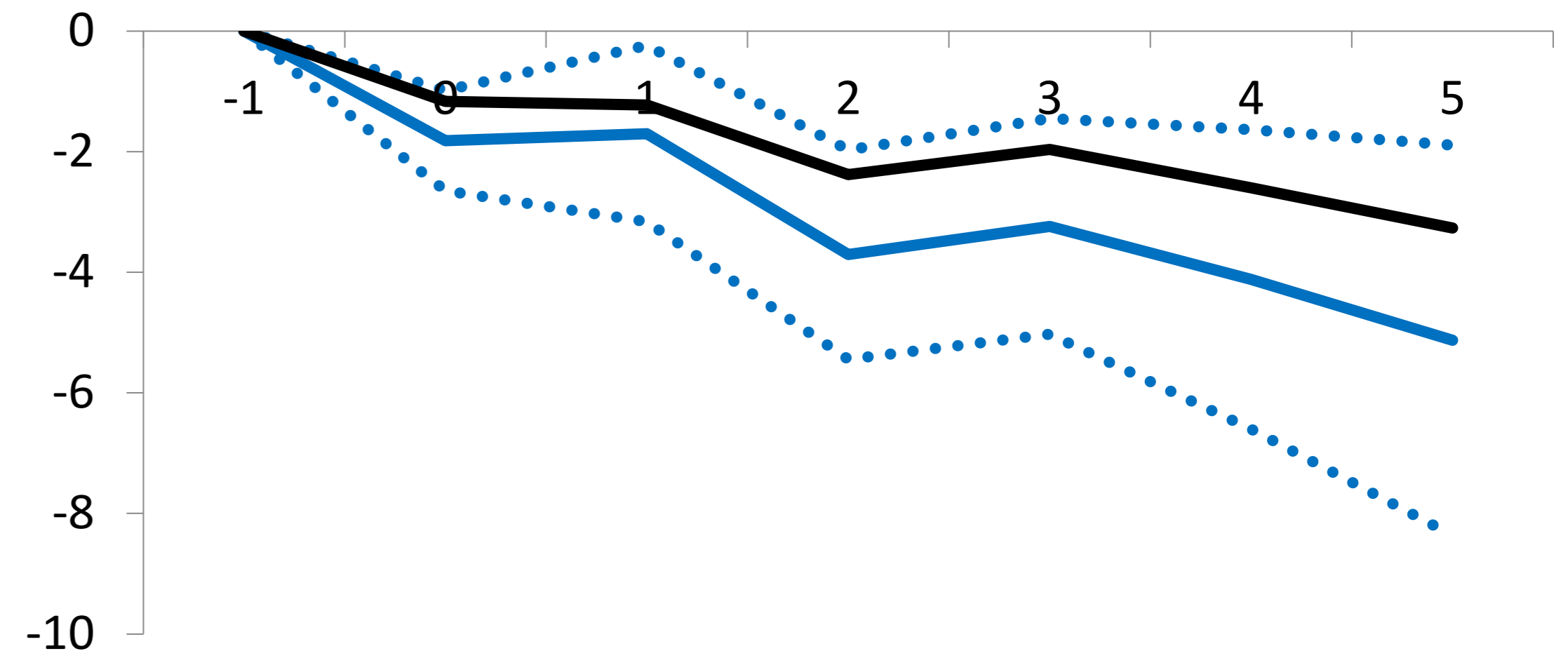
Note: Solid blue line denotes the differential effect of capital account liberalization episodes between a sector with a high external financial dependence/layoff rate/elasticity of substitution and a sector with a high external financial dependence/layoff rate/elasticity of substitution). Black lines denote baseline effects.

Key findings

- *On average*, capital account liberalization has led limited output gains & significant increases in inequality, but effects are heterogenous across countries and sectors.

- In aggregate data:
  - Liberalization increases output in countries with high financial depth.
  - Distributional effects are more pronounced in countries with low financial depth and low inclusion, and when liberalization is followed by a financial crisis.

- In sectoral data:
  - Stronger evidence of output effects.
  - Distribution impacts remain strong—liberalization reduces labor share of income and effect is larger for industries with:
    - higher external financial dependence;
    - higher natural propensity to use layoffs to adjust to idiosyncratic shocks;
    - higher elasticity of substitution between capital and labor.

Concluding remarks: policy implications

- Discussions on 'saving globalization' should distinguish between trade & financial globalization.

- Financial globalization presents a more difficult efficiency-equity tradeoff than does trade
  - o Output benefits more difficult to establish than with trade;
  - o Distributional considerations as important as in the case of trade.

- Policies to improve efficiency-equity tradeoff posed by financial globalization:
  - ➔ Sequencing matters:
    - o reforms aimed at fostering domestic financial liberalization and depth;
    - o policies to broaden access to finance (financial inclusion).

  - ➔ Macroprudential & capital account policies to mitigate risk of post-liberalization crisis.

The Aggregate and Distributional Effects of Financial Globalization: Evidence from Macro and Sectoral Data

Davide Furceri, Prakash Loungani and Jonathan D. Ostry
International Monetary Fund

IMF Annual Research Conference, Washington DC, November 2-3, 2017