

**THE EFFECTS OF LABOR AND PRODUCT MARKET REFORMS:
THE ROLE OF MACROECONOMIC CONDITIONS AND POLICIES**

ROMAIN DUVAL AND DAVIDE FURCERI (IMF)

IMF ANNUAL RESEARCH CONFERENCE, WASHINGTON DC, NOVEMBER 3-4 2016

Motivation and key question

- Continued weak growth and shrinking macro policy space in advanced economies leading to growing policy emphasis on structural reforms, particularly of labor and product markets
- Reforms: product market deregulation; employment protection legislation, unemployment benefit systems, labor tax wedges, active labor market policies + wage bargaining systems in some cases
- Theoretical case for such reforms laid out in e.g. Layard, Nickell and Jackman (1991), Pissarides (2000), for labor market reforms; Blanchard and Giavazzi (2003), for product market reforms
- But little is known regarding their short- to medium-term macroeconomic effects:
 - Are the effects larger or smaller under slack?
 - Do the effects vary depending on the stance of macro policies?
- This paper aims to fill this gap

The dynamic macroeconomic effects of reforms: theory

- Blanchard and Giavazzi (2003) and related literature:
 - ST # LT (endogenous firm entry)
 - But limited insights on dynamics due to missing real (e.g. EPL) and nominal frictions
- Conventional DSGEs:
 - Nominal frictions and role of aggregate demand
 - But BG's insights are lost (non micro-founded regulations, e.g. no firm entry)
 - And macro conditions do not matter by design (linearization around SS)
 - One exception = ZLB as recently explored non-linearity (Eggertsson, Raffo and Ferrero 2014)
- Most recent work incorporating BG's and others' insights into DSGEs (Cacciatore and Fiori 2016; Cacciatore, Duval, Fiori, Ghironi, several 2016 papers):
 - Reforms typically pay off only gradually, and dynamics heterogeneous across different types
 - Macro conditions *do* matter (e.g. EPL)
 - ZLB *per se* matters less than sometimes feared (reform *not* unambiguously deflationary)

The dynamic macroeconomic effects of reforms: empirics

- Growing micro literature not well suited to address this particular question:
 - Randomized controlled trials or natural experiments often idiosyncratic and micro in nature: macro implications not always clear (e.g. ALMPs or UBs)
 - Yet recent theoretical debate emphasizes that macro impact \neq micro impact, and that macro impact itself can depend on macro conditions (slack; ZLB)
- Macro panel (country/country-sector) literature:
 - Extensive: labor market institutions (Bassanini et al., 2009; Blanchard and Wolfers, 2000; Nickell et al., 2005; Nicoletti and Scarpetta, 2003), product market deregulation (Aghion et al., 2009; Barone and Cingano, 2011; Bourles et al., 2013), both (Alesina et al., 2005; Bassanini and Duval, 2009; Fiori et al., 2012; Nicoletti and Scarpetta, 2003)
 - But focus on long term, no identification of reform shocks
 - No analysis of role of macro conditions and macro policies
- This paper:
 - New “narrative” database to identify major reform shocks in 26 countries over 1970-2013
 - Careful analysis of dynamics (local projection method) and role of macro conditions/policies

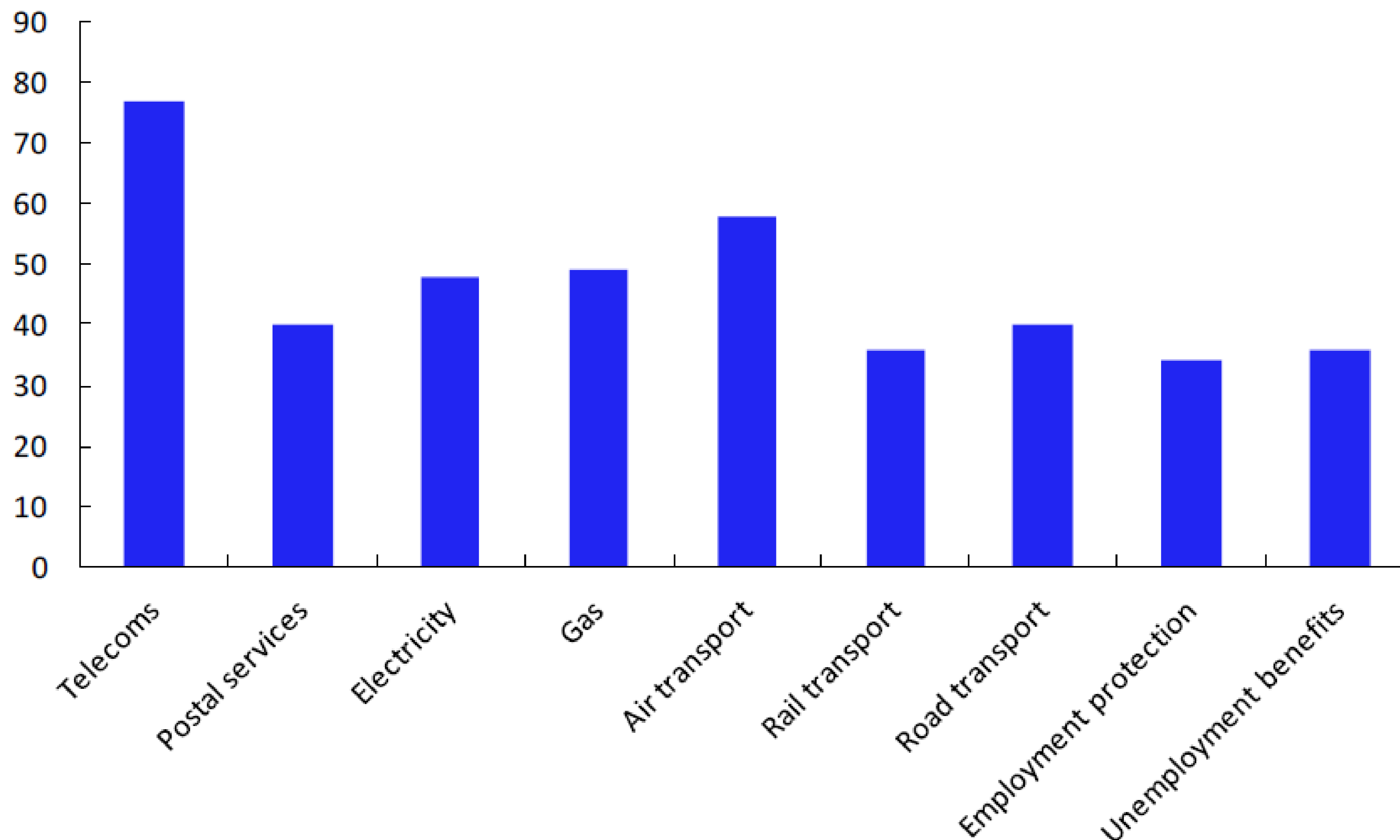
Identification of major reforms

- “Narrative” approach to identify major legislative and regulatory actions (for PMR, EPL, UB) based on *OECD Economic Surveys* and additional country-specific sources. See Romer and Romer’s various papers on fiscal, monetary and—closest to our paper—financial crisis shocks.
- Alternative criteria to identify reforms: (i) normative language; (ii) actions mentioned several times across different surveys and/or in retrospective assessments; (iii) actions corresponding to large changes in OECD indicators.
- Advantages compared to existing databases: (i) identification of *major* events; (ii) exact timing; (iii) exact actions underpinning indicator changes; (iv) larger country and time coverage ; (v) areas of reforms for which no indicator exists (e.g. UB duration, conditionality, design of activation policies).
- Shortcomings: (i) reforms may be endogenous -> issue addressed in the empirical analysis; (ii) heterogeneity of reform shocks -> average historical impact estimated.
- Labor tax wedges and ALMP spending: OECD data (purged from cyclical fluctuations for ALMP)

Data: Examples of reforms

Announcement Year	Implementation/ Scored Year	Area	Country	Content	Normative language	Mention in reports	Large change in OECD indicator
1982	1984	Product market (telecommunications)	USA	antitrust suit against AT&T	The most important deregulatory move in telecommunications came with the antitrust suit against AT&T by the U.S. ...Competition for long-distance voice services entered a new phase in 1984..	1986, 1989, 2004	no
1993	mid-1994/1995	Employment protection legislation	Spain	a draft law modifying the current law regulating employment. It introduces....dismissals of permanent workers;	... far-reaching labor market reforms aimed at lifting barriers to job creation. A decree was passed at the end of December 1993 and a draft has been presented to Parliament and is expected to become law by the middle of 1994	no	yes for 1995
n.a.	1994	Unemployment benefits	Denmark	Labor market reforms of 1994: activation of the unemployed, limiting the period of unemployment benefits, enforcing job availability criteria, compulsory full-time activation, stricter eligibility criteria.	The measures taken ...are steps in the right direction,...raining and education offers are fully operational, a foundation has been established for reducing the duration of unemployment benefits on a sustainable basis..	2000	yes for 1994 (replacement rate), other aspects (duration, eligibility, active policies) not captured

Numbers of major reforms (26 advanced economies, 1970-2013)



Empirical strategy

- Macro analysis:

Baseline:
$$y_{i,t+k} - y_{i,t-1} = \alpha_i + \gamma_t + \beta_k R_{i,t} + \theta X_{i,t} + \varepsilon_{i,t}$$

Slack/Policies:
$$y_{i,t+k} - y_{i,t-1} = \alpha_i + \gamma_t + \beta_k^L F(z_{i,t}) R_{i,t} + \beta_k^H (1 - F(z_{i,t})) R_{i,t} + \theta X_{i,t} + \varepsilon_{i,t}$$

- Sector-level analysis: impact of product market reform through backward and forward linkages:

$$y_{i,j,t+k} - y_{i,j,t-1} = \alpha_{ij} + \gamma_{it} + Trend_j + \beta_k \sum_s \omega_{jS,i}^{I,0} R_{i,S,t} + \theta X_{i,j,t} + \varepsilon_{i,j,t}$$

y = output, employment, labor productivity (in logs)

R = reform shock

F(.) = smooth transition function (Auerbach and Gorodnichenko 2012): $F = 1 \Leftrightarrow$ recession or contractionary monetary/fiscal policy regime

X = past growth, recession dummies, past reforms; F function; + expected growth (IMF WEO forecasts) and other reform shocks to address reverse causality and omitted variable bias

ω = input requirement of downstream (upstream) industry from upstream (downstream) industry

Monetary and fiscal policy regimes: identification of shocks

- Fiscal policy shocks:

- $FE^{G/Y}$ = difference between actual G/Y and value expected in October of same year

- Monetary policy shocks: similar in spirit:

- Estimate
$$FE_{i,t}^i = \alpha + \beta FE_{i,t}^{inf} + \gamma FE_{i,t}^g + MP_{i,t}$$

where FE^i , FE^{inf} and FE^g = forecast errors of policy rates, inflation and GDP growth, measured as difference between actual value and that expected in October of same year

- Advantages of this approach:

- Eliminates problem of “policy foresight” (Forni and Gambetti 2010; Leeper et al. 2012)

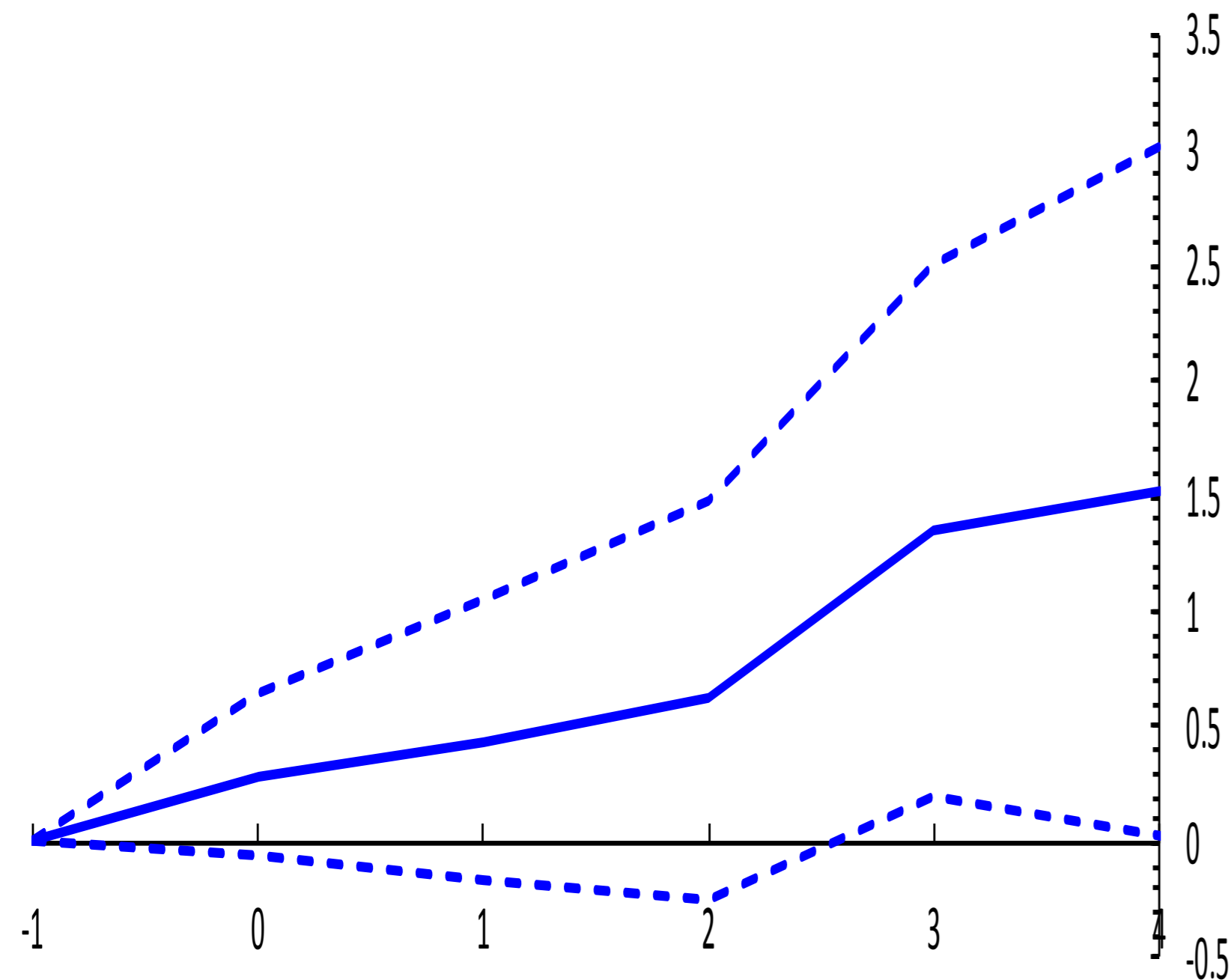
- Reduces likelihood of capturing the potentially endogenous response of macro policy to state of the economy

- NB: shocks orthogonal to reform shocks and growth regime; results robust to using April forecasts

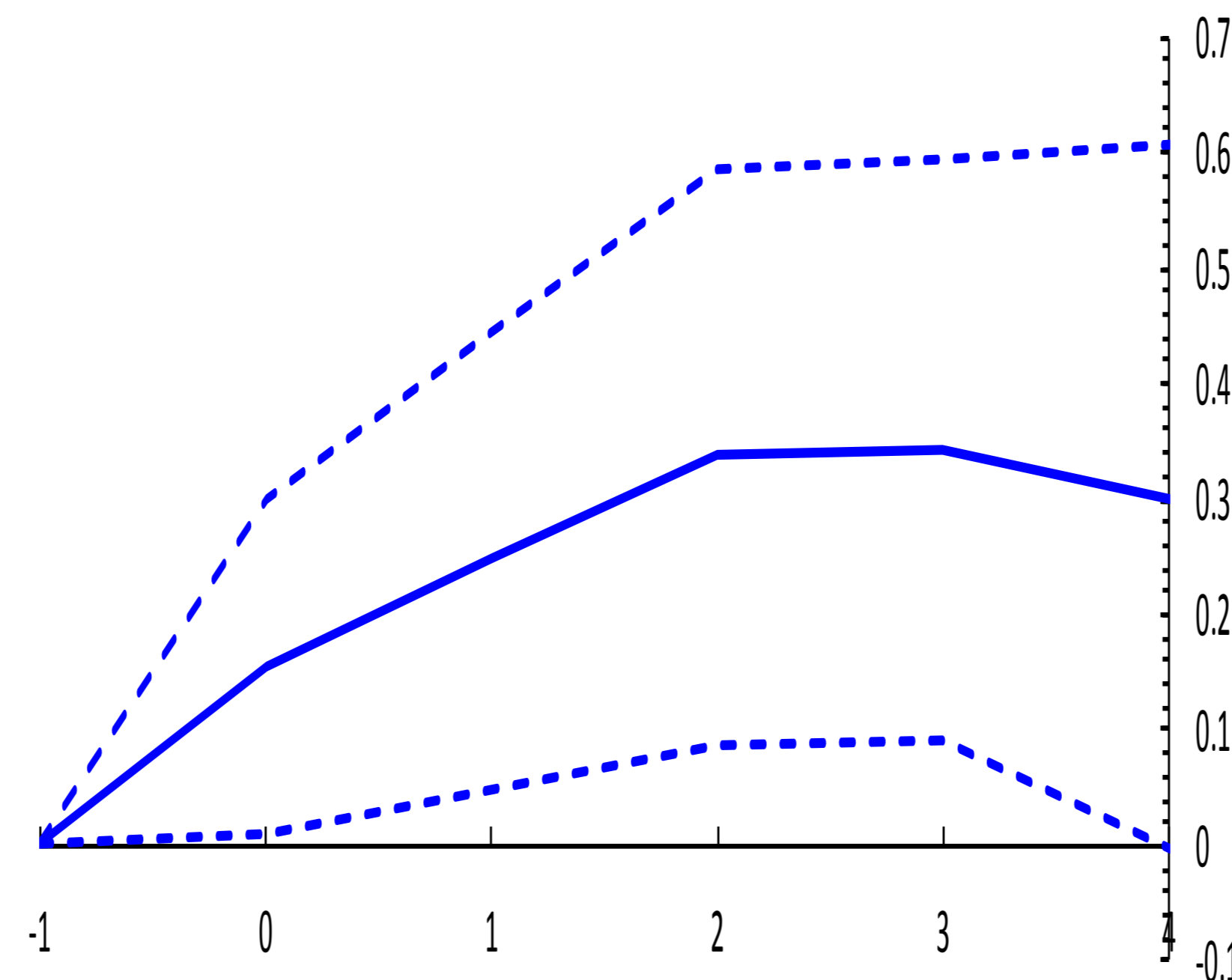
Empirical Results: Product Market Reforms

Product market reforms: macro and sectoral analyses

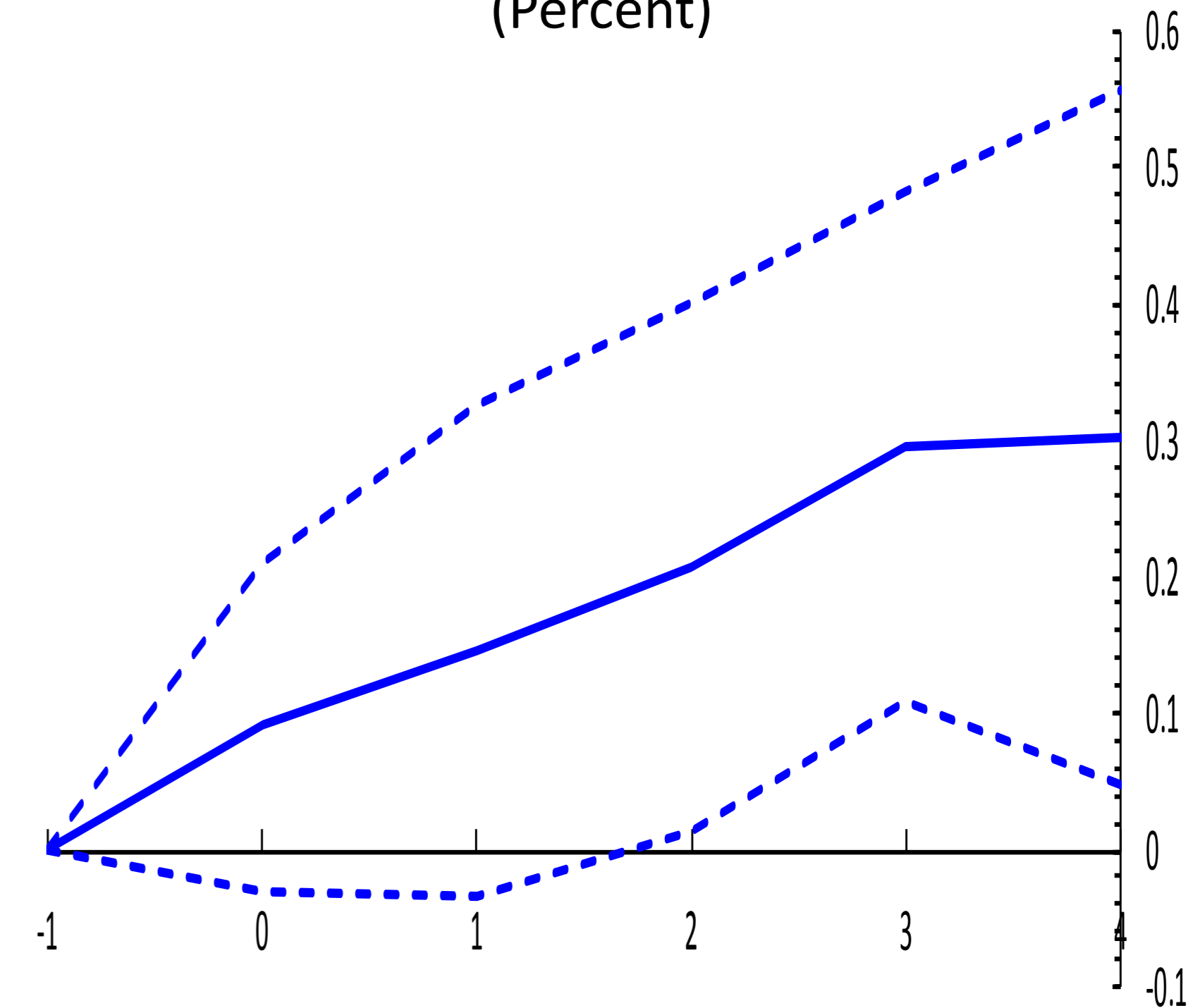
Panel 1. GDP (Percent)



Panel 2. Sectoral backward linkage (Percent)



Panel 3. Sectoral forward linkage (Percent)



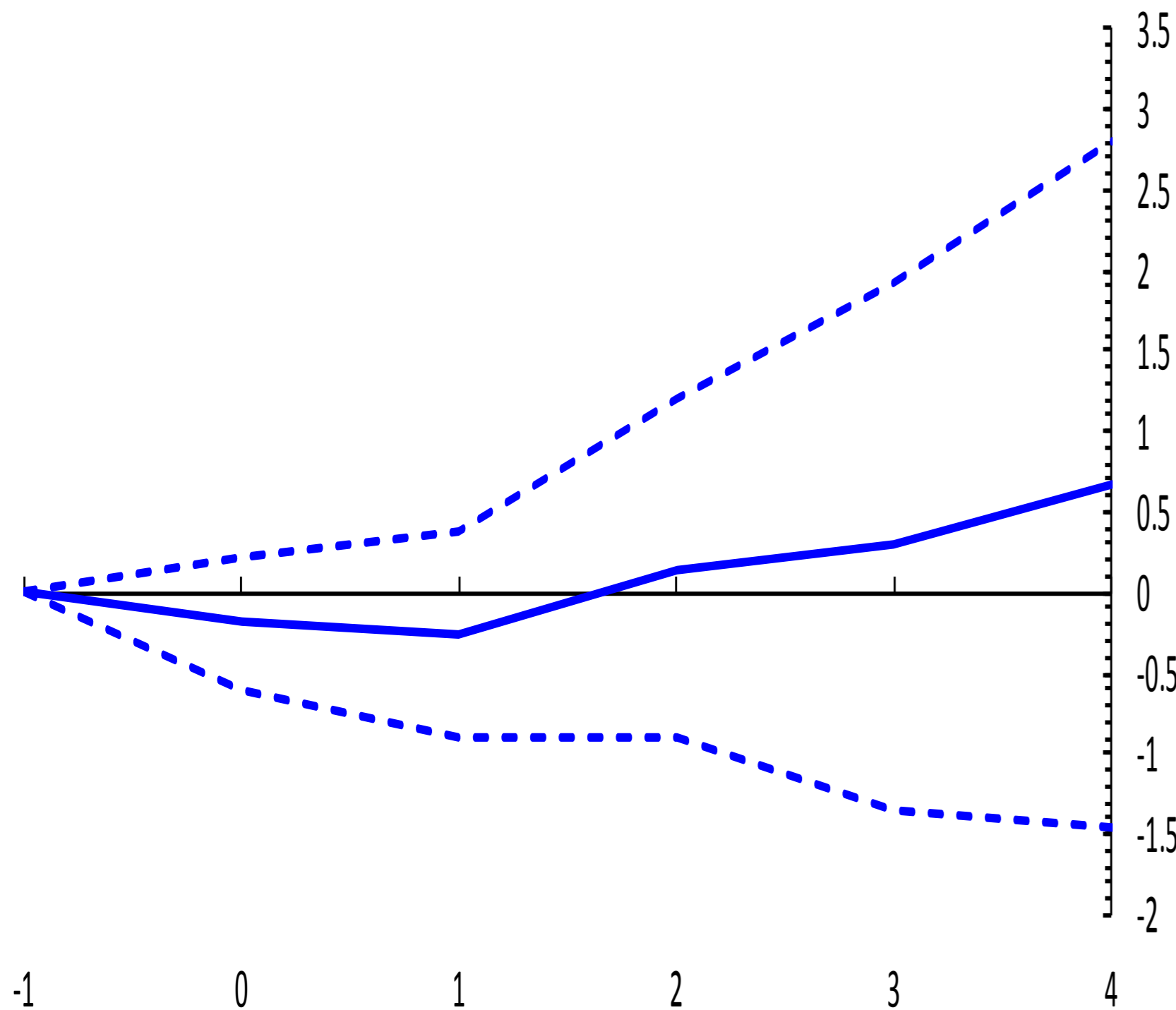
Note: t=0 is the year of the shock; dotted lines denote 90 percent confidence bands.

NB: estimated output effects essentially reflect labor productivity effects

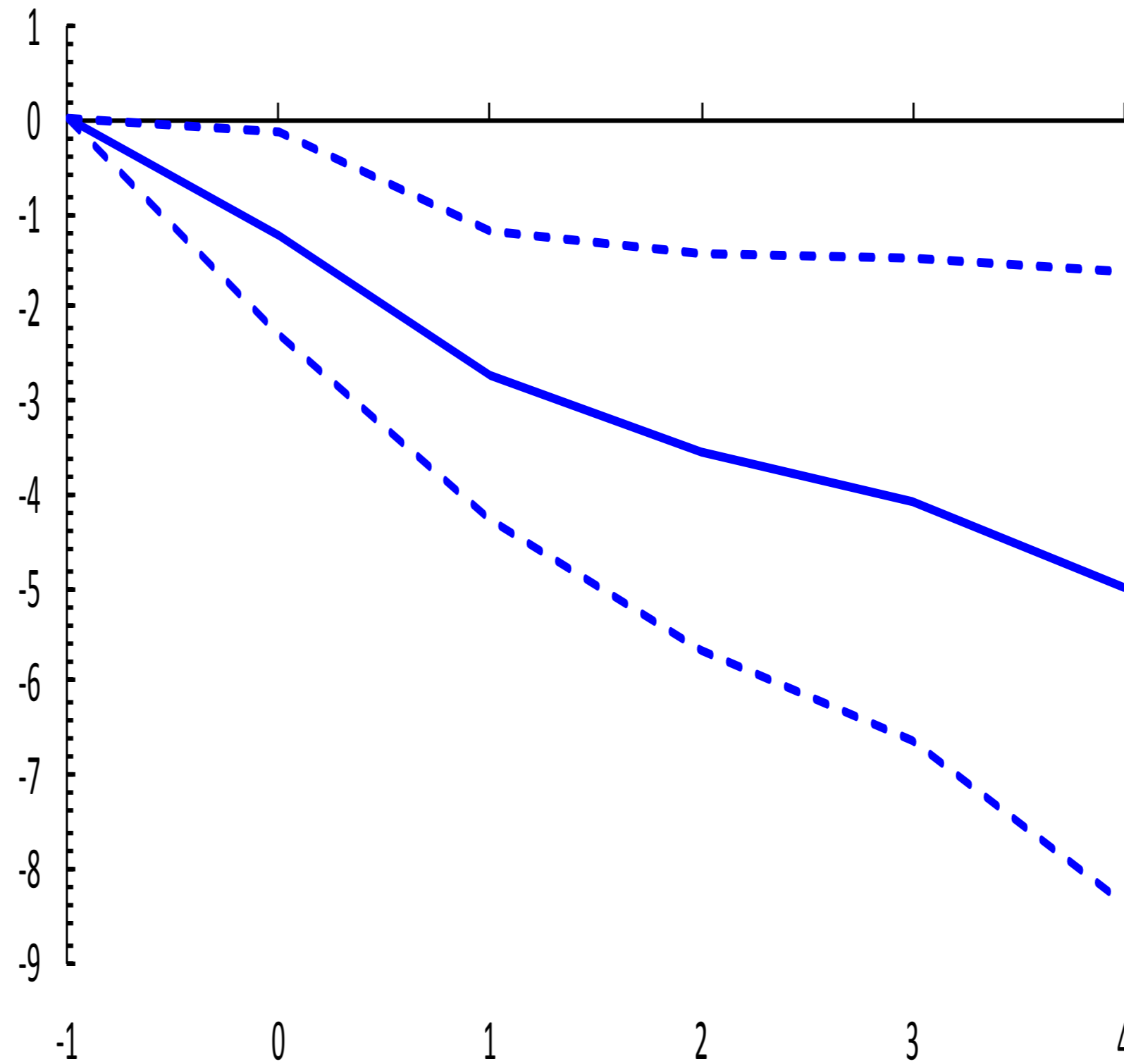
Empirical Results: Labor Market Reforms

(Regular) Employment protection legislation reforms

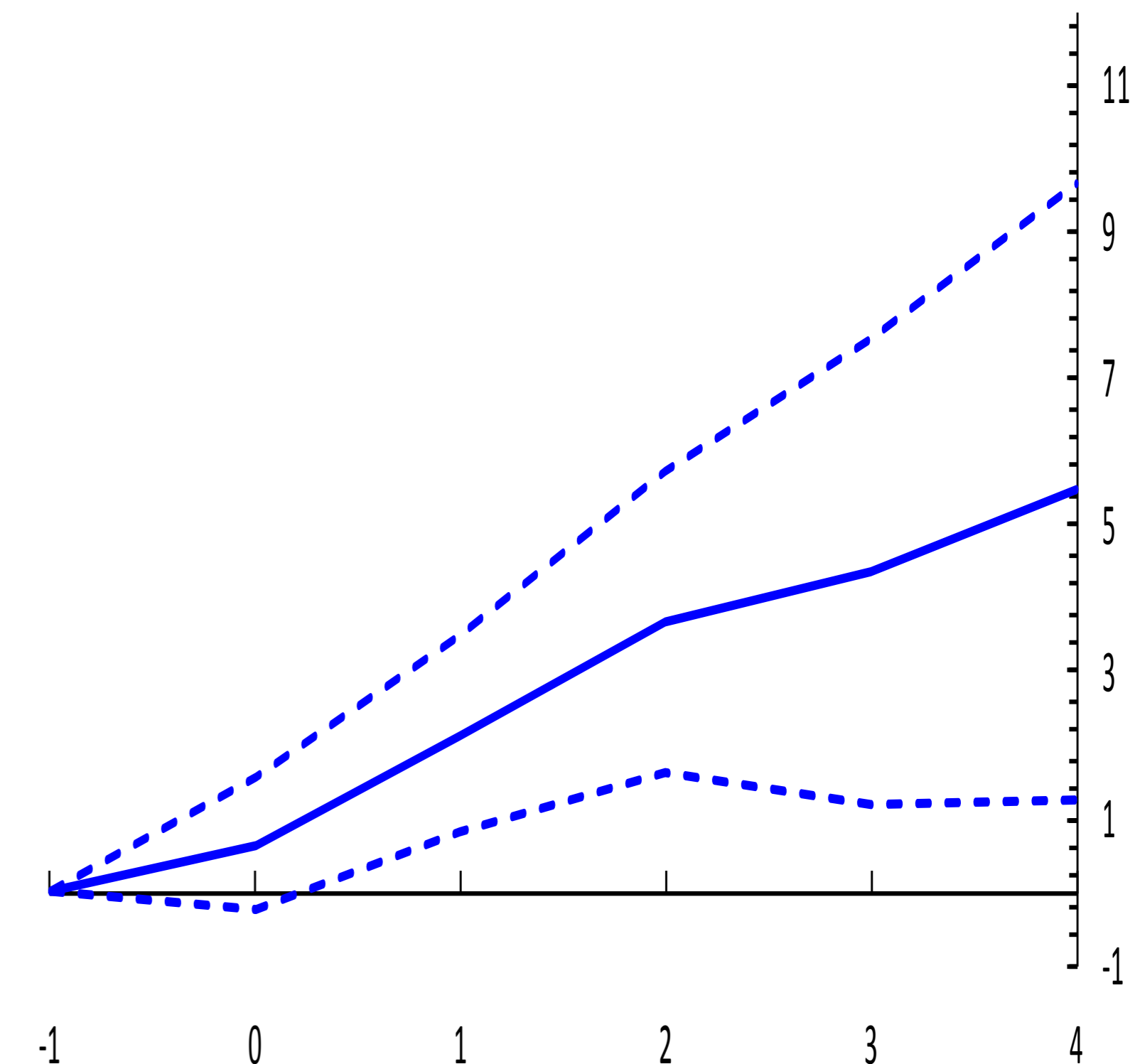
Panel 1. Unconditional employment effect
(Percent)



Panel 2. Employment effect in large recessions
(Percent)



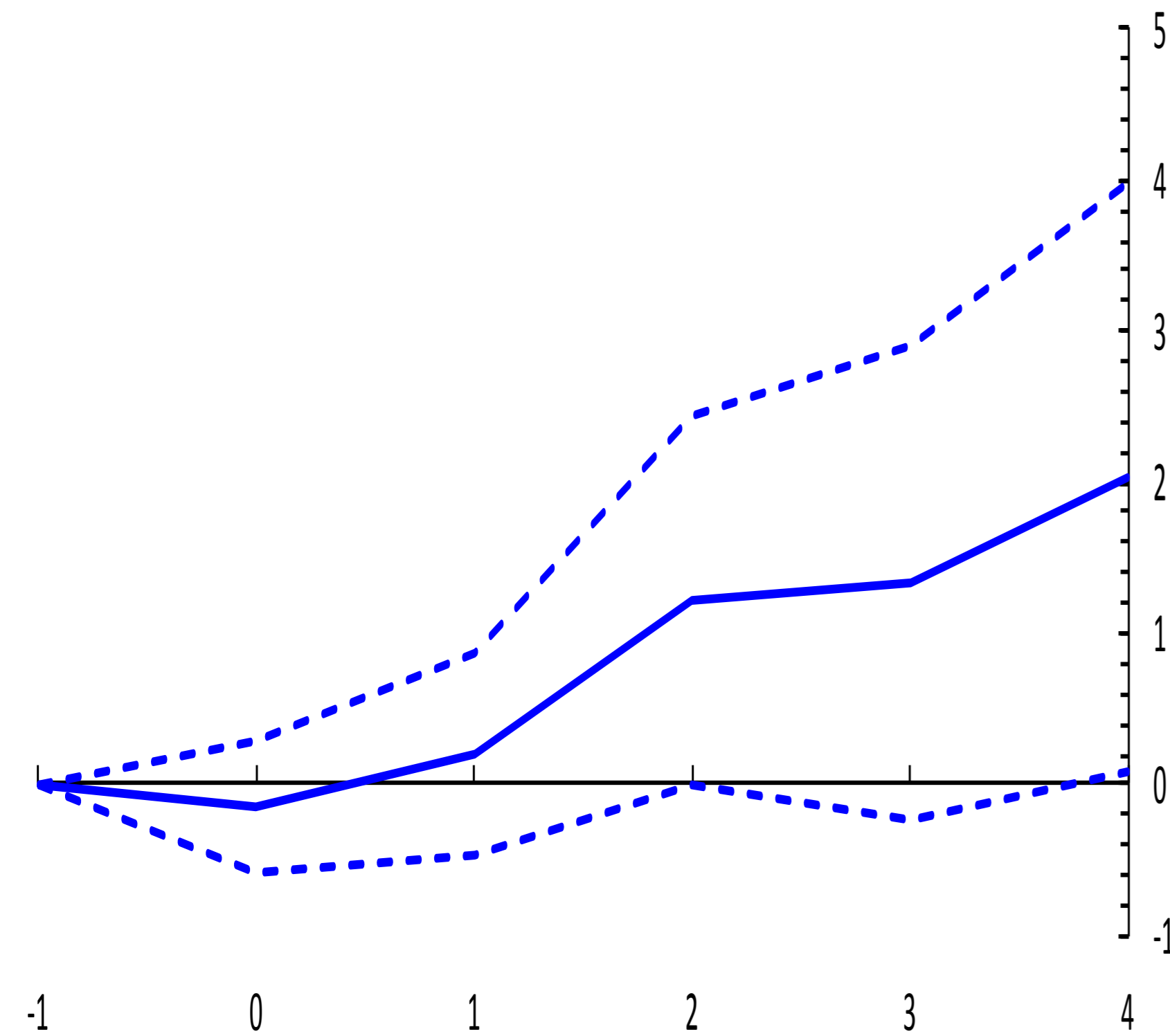
Panel 3. Employment effect in large expansions
(Percent)



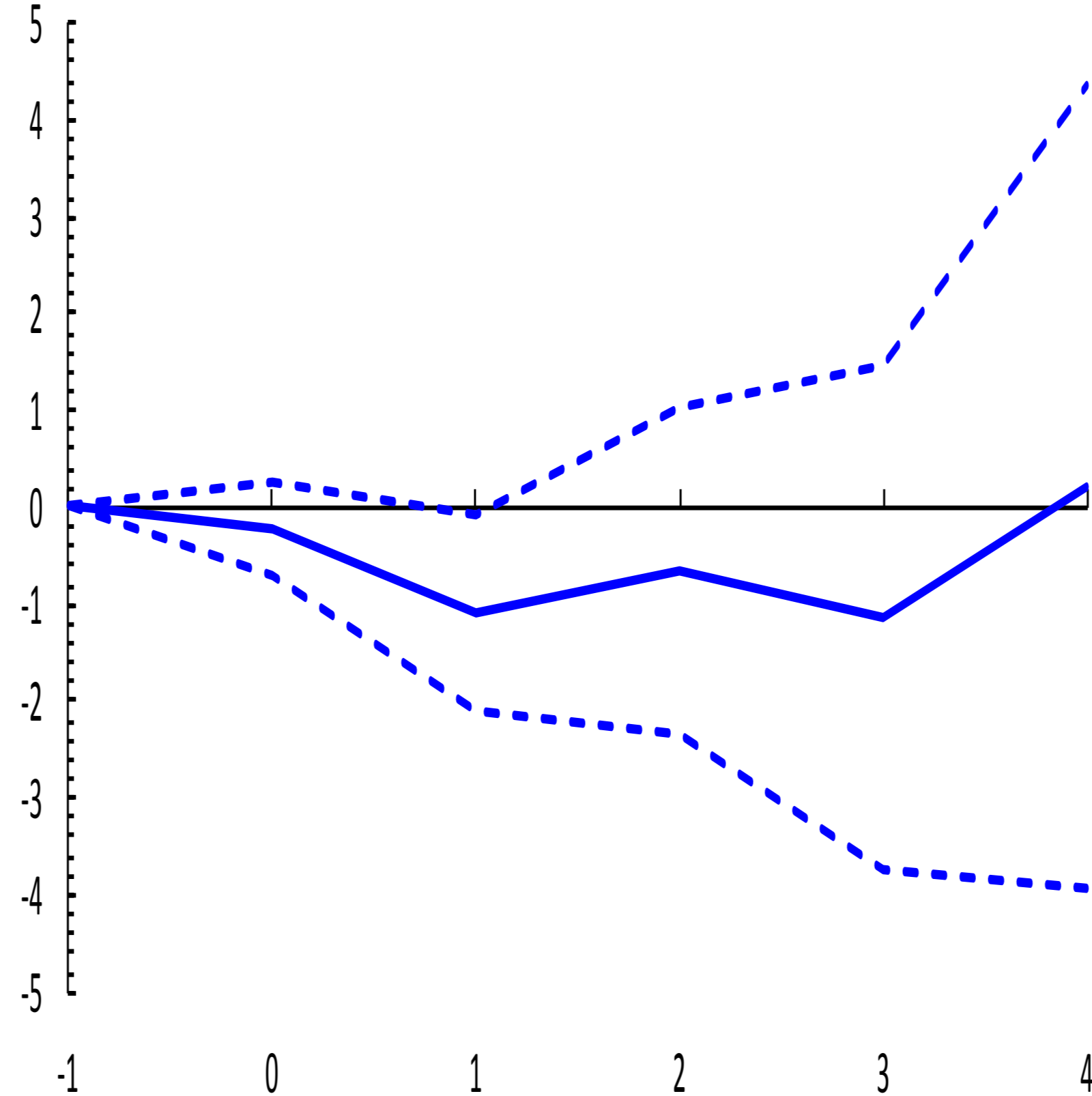
Note: t=0 is the year of the shock; dotted lines denote 90 percent confidence bands.

Unemployment benefit reforms

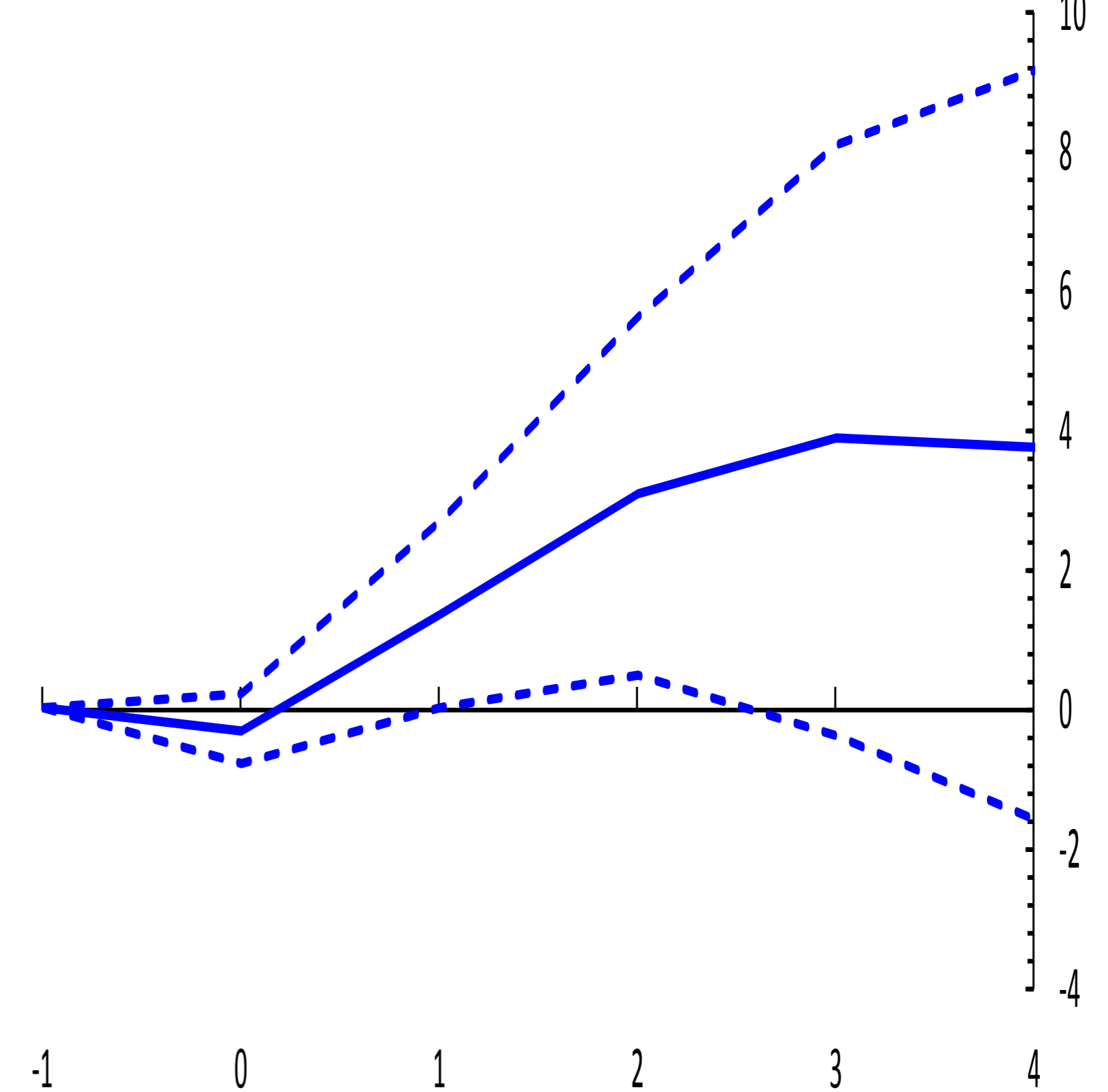
Panel 1. Unconditional employment effect
(Percent)



Panel 2. Employment effect in large recessions
(Percent)



Panel 3. Employment effect in large expansions
(Percent)



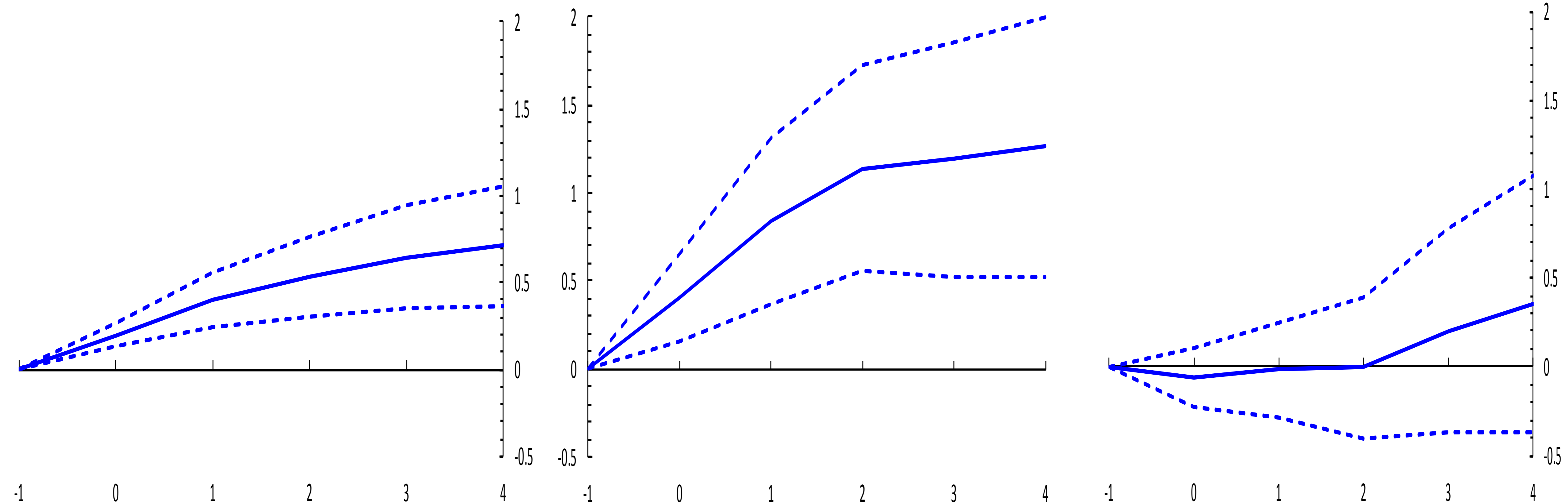
Note: t=0 is the year of the shock; dotted lines denote 90 percent confidence bands.

Labor tax wedges (1 percentage point cut)

Panel 1. Unconditional employment effect
(Percent)

Panel 2. Employment effect in large recessions
(Percent)

Panel 3. Employment effect in large expansions
(Percent)

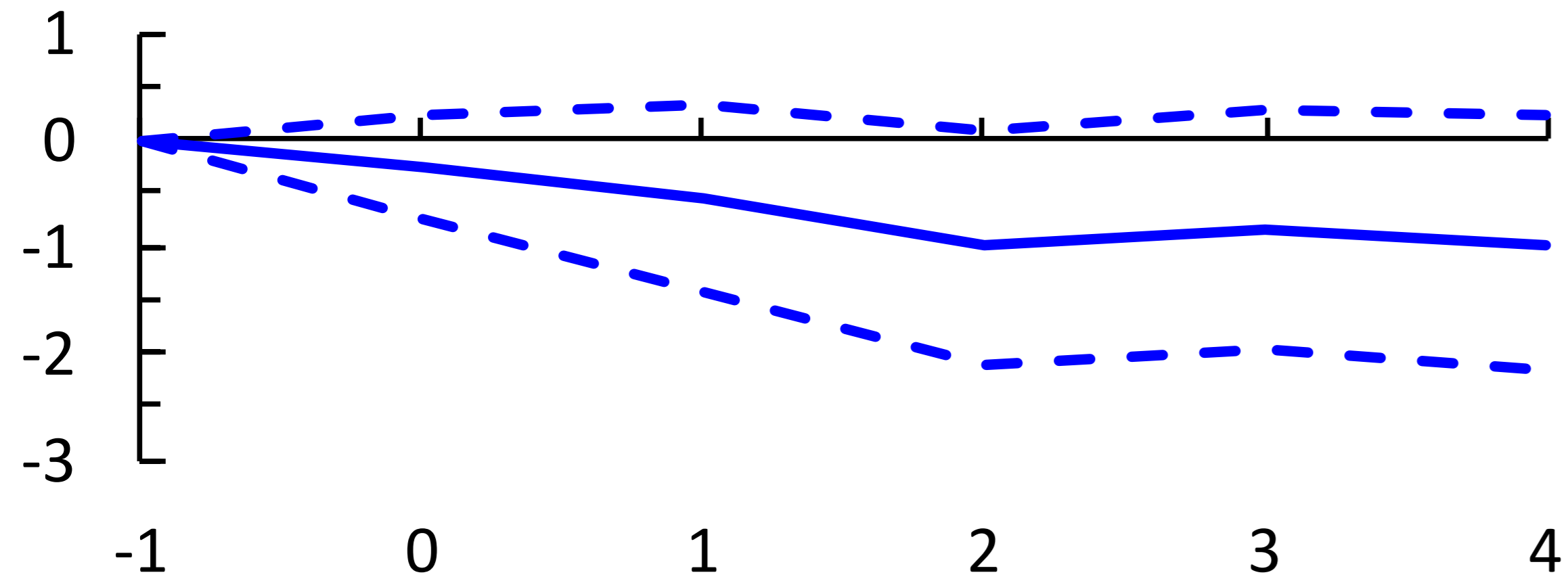


Note: t=0 is the year of the shock; dotted lines denote 90 percent confidence bands.

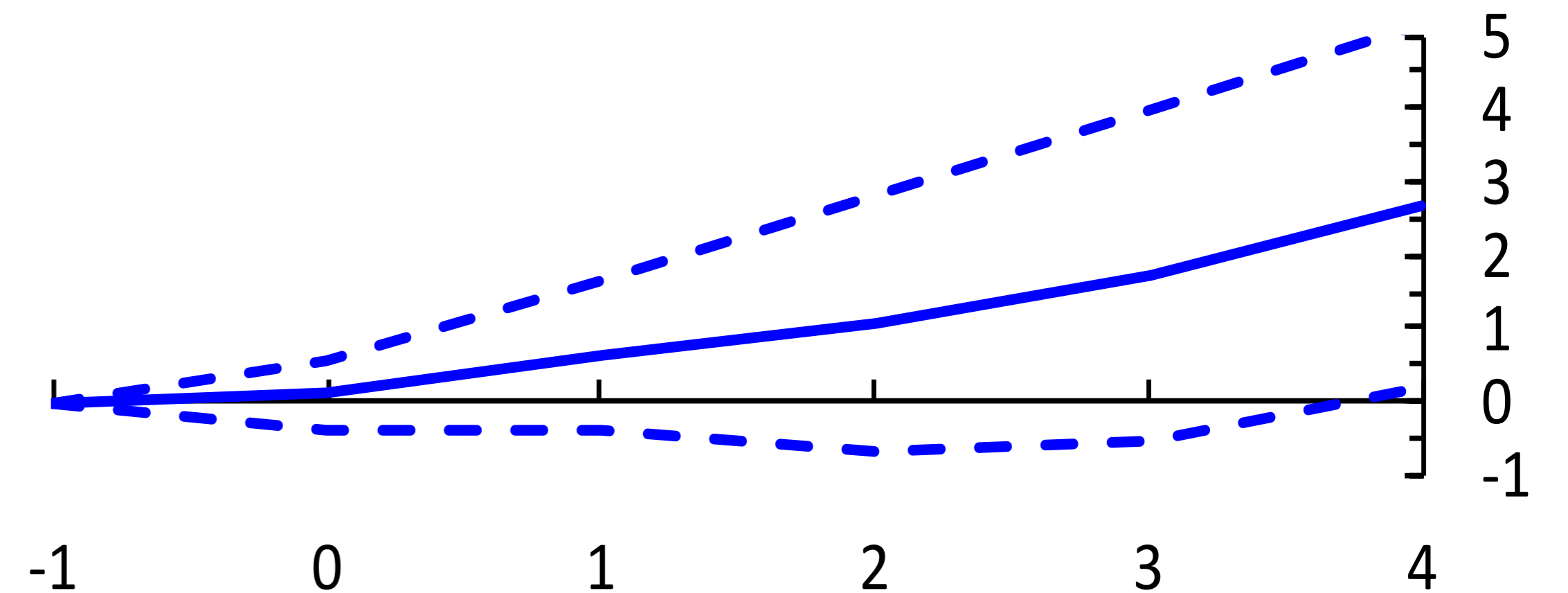
**Empirical Results:
The Role of Macroeconomic Policies**

(Regular) Employment protection legislation reforms

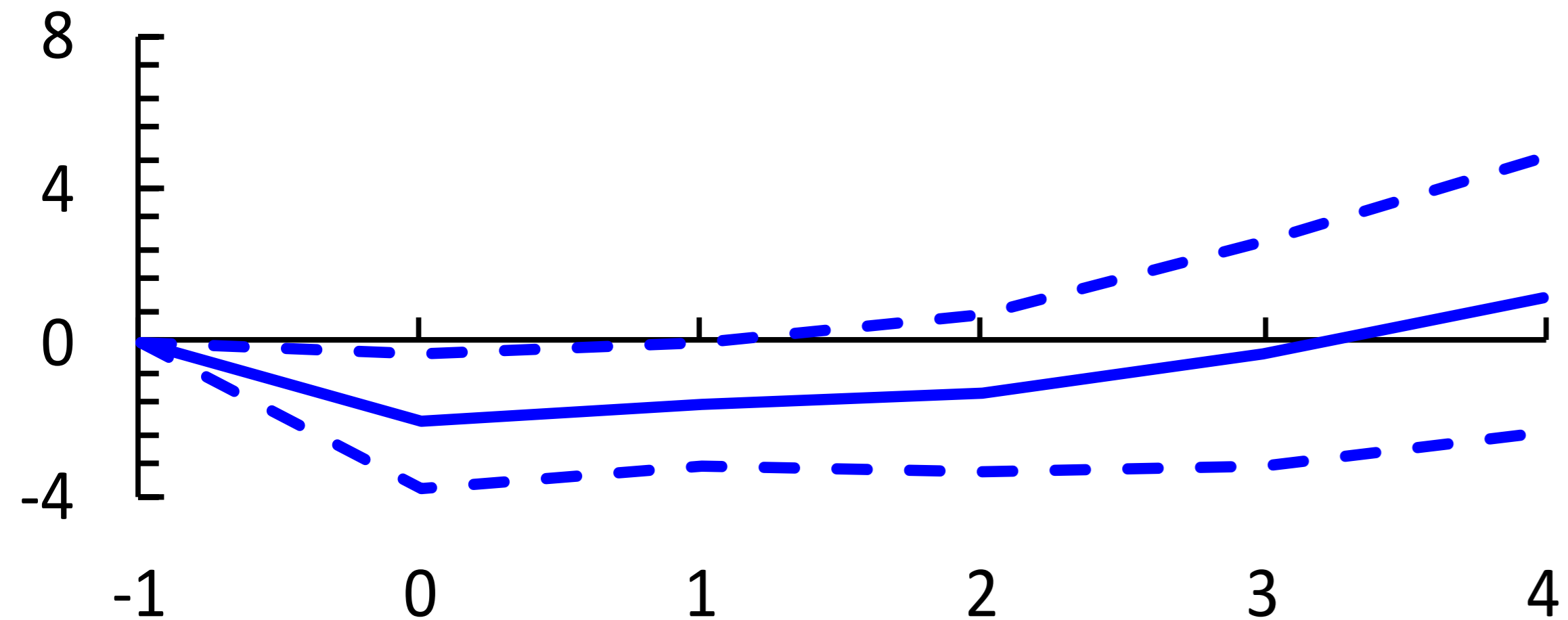
Panel 1. Output effect under fiscal contractions (Percent)



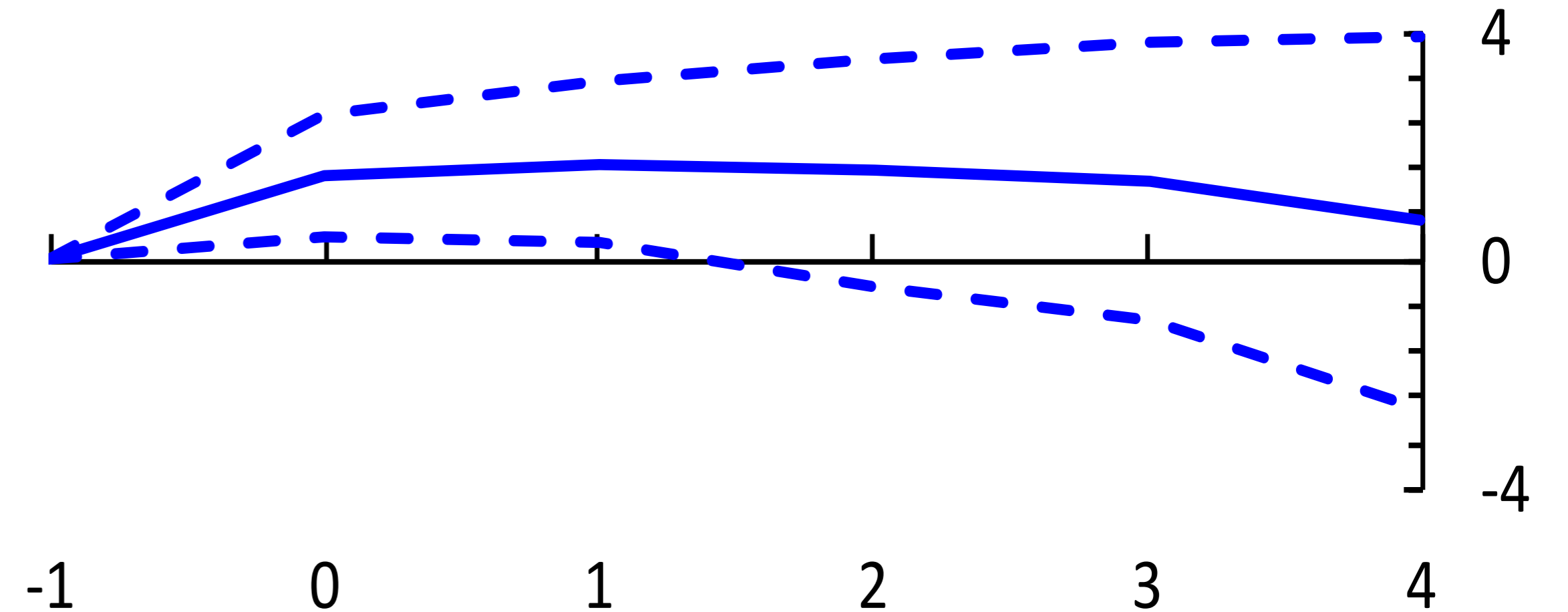
Panel 2. Output effect under fiscal expansions (Percent)



Panel 3. Output effect under monetary contractions (Percent)



Panel 4. Output effect under monetary expansions (Percent)



Note: t=0 is the year of the shock; dotted lines denote 90 percent confidence bands.

Concluding remarks: policy implications

- Reforms can have a significant impact on output over the medium term
- But contribution in the short term is likely to be modest as they take time to payoff, esp. in bad times
- Effect of labor market reforms depends on overall economic conditions: weak to negative effects in periods of low growth for some reforms:
 - ➔ Complementary macroeconomic policies—including fiscal stimulus wherever space available
 - ➔ Prioritizing reforms—labor market reforms with embedded stimulus, product market deregulation
 - ➔ Credibly announcing them now while implementing later, and/or grandfathering
- The effect of reforms eventually levels-off: transitory (albeit persistent) growth effects
 - ➔ More needed to address trend growth slowdown that started in early 2000s

Thank you!