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LACK OF TRUST AND FISCAL DOMINANCE: EVIDENCE FROM A FIRM SURVEY EXPERIMENT

Francesco Bianchi
Renato Faccini
Leonardo Melosi
Nils Wehrhöfer

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ABSTRACT

We study how debt news shapes firms' inflation expectations in a monetary union. In an active-control experiment, German firms receive optimistic or pessimistic projections of France, Italy, and Spain's debt-to-GDP ratios. Pessimistic news raises debt beliefs and increases one- and three-year inflation expectations, with no detectable effect at five years. The response is driven by low-trust firms and by firms expecting relatively low ECB policy rates. A salient German debt-financed fiscal shock generates no comparable response. Within a Fisherian framework, the evidence suggests that debt news becomes inflationary when firms perceive incomplete fiscal backing and expect monetary accommodation.

Francesco Bianchi
Johns Hopkins University
Department of Economics
and CEPR
and also NBER
francesco.bianchi@jhu.edu

Renato Faccini
Danmarks Nationalbank
and Queen Mary University of London
and Centre for Macroeconomics
rmmf@nationalbanken.dk

Leonardo Melosi
European University Institute
lmelosi@gmail.com

Nils Wehrhöfer
Bundesbank Research Centre
nils.wehrhoefer@bundesbank.de

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"Political pressures could arise and grow to keep interest rates lower than the rationale of price stability would call for. That would be nothing other than fiscal dominance."

Jens Weidmann, "Too close for comfort? The relationship between monetary and fiscal policy" Speech at the OMFIF Virtual Panel, 5 November 2020.[1]

"When we look at the policy actions taken in the euro area in recent years, the narrative of fiscal dominance does not hold."

Christine Lagarde, "Fiscal policy and growth in Europe" Keynote speech at the European Meeting of the Trilateral Commission, Vienna, 22 November 2025.[2]

1 Introduction

Since Sargent and Wallace (1981), it has been understood that monetary policy alone cannot control inflation dynamics without the backing of the fiscal authority. This key insight suggests that achieving price stability depends critically on public confidence in the central bank's ability to maintain it independently of fiscal influences. When this trust erodes, the public may come to believe that fiscal pressures will eventually force the central bank to relax its anti-inflation stance and instead help stabilize public finances. As a result, fiscal news can raise inflation expectations at horizons relevant for monetary policy, even if long-run expectations remain anchored.

This paper studies whether firms perceive sovereign debt news as inflationary in a monetary union, and whether this perception depends on trust in the common central bank. We find that trust is a key source of heterogeneity in firms' inflation-expectation responses to fiscal news. According to firm-level data from the Bundesbank Online Panel of Firms (BOP-F), approximately 44% of German firms report low trust in the European Central Bank (ECB) to fulfill its price-stability mandate, and low trust is strongly associated with a higher perceived likelihood of fiscal dominance. We exploit a randomized information treatment that exposes German firms with different levels of trust in the ECB to foreign fiscal news concerning fiscally fragile euro-area economies. Firms with lower trust revise their inflation expectations sharply upward following pessimistic debt news, with effects that persist over short- and medium-term horizons. By contrast, firms with high trust exhibit only muted and transitory responses, consistent with an environment in which credible monetary policy continues to anchor expectations despite fiscal stress. Overall, these results suggest

[1] Bundesbank (2020), "Too Close for Comfort?"

[2] `https://www.ecb.europa.eu/press/key/date/2025/html/ecb.sp251122~41974d60f1.en.html`

that debt news from fiscally fragile countries becomes inflationary primarily when confidence in the central bank's independence and resolve is weak.

To discipline the empirical design and guide the interpretation of our findings, we develop a parsimonious Fisherian model of a monetary union composed of two countries, each with its own fiscal authority, and a common central bank. The model is intentionally bare-bones: its purpose is not to capture all channels through which fiscal policy may affect inflation, but to isolate one mechanism—how expectations about the monetary-fiscal policy mix shape inflation dynamics in a monetary union. Under perfect international risk sharing, the two countries share the same inflation dynamics, so inflation is pinned down by the interaction between the common monetary authority and the fiscal backing provided by national fiscal authorities. The framework builds on the insight that monetary policy can stabilize inflation only to the extent that fiscal policy provides sufficient backing (e.g., Leeper, 1991; Sims, 1994; Woodford, 2001; Bianchi and Melosi, 2017; Bianchi, Faccini, and Melosi, 2023), but in an open-economy setting (Bianchi, Fang, Melosi, and Rogantini Picco, 2026).

In the benchmark high-trust environment, fiscal policy provides full backing: fiscal authorities are expected to adjust primary surpluses so that debt shocks are absorbed through future fiscal adjustment rather than through inflation. As a result, debt disturbances in either member state do not translate into union-wide inflationary pressures. We then consider a low-trust environment in which government debt is partially unfunded in one member state. In this case, while one fiscal authority remains fully committed to debt stabilization, the other is expected to leave part of the debt shock unmatched by future fiscal adjustment. Stabilizing the union-wide equilibrium, therefore, requires part of the adjustment to occur through inflation, generating a persistent inflation response. This mechanism delivers the key empirical implication: fiscal news should raise inflation expectations when firms perceive the associated debt as imperfectly backed and expect the common central bank to accommodate the resulting fiscal pressure.

Guided by this distinction, our empirical strategy uses exogenous shifts in beliefs about foreign public debt and tracks how far along the expectations term structure the effect propagates. We implement a randomized information treatment in the BOP-F's Q1 survey in 2024. In the RCT, German firms are presented with either optimistic or pessimistic projections of future debt-to-GDP ratios for France, Italy, and Spain — treated as a single block comprising the three largest euro-area economies outside Germany. The experiment has an active-control design: all firms receive information about projected debt developments, but the content of that information differs across groups. We focus on foreign fiscal news rather than German debt in our baseline analysis because it aligns with the model's monetary-union logic: fiscal accommodation concerns are about whether debt pressures in a fiscally fragile

part of the union induce the common central bank to tolerate higher inflation. At the same time, fiscally disciplined members serve as the anchor. In this mapping, France, Italy, and Spain are the relevant sources of potential fiscal stress, whereas Germany corresponds to the disciplined member.

A second advantage of this design is interpretability. Foreign debt news has limited direct implications for German taxes and spending, so domestic fiscal-demand channels should be muted. This makes revisions in German firms' inflation expectations a relatively direct measure of how they expect the ECB to react to fiscal conditions elsewhere in the euro area. We use the resulting exogenous shifts in beliefs about foreign debt to test the model's key discriminant: whether pessimistic debt news leads only to small and short-lived revisions in inflation expectations, consistent with a monetary-led policy mix, or instead generates economically meaningful persistence at medium horizons, consistent with a tilt toward fiscal accommodation.

We find that pessimistic debt news about high-debt countries causes firms to revise their inflation expectations upward, not only over the next year, but also at a three-year horizon, while we find no detectable effect at the five-year horizon. Interpreted through the lens of the model, this pattern is difficult to reconcile with a strictly monetary-led policy mix. If firms perceived foreign debt shocks as operating in a regime in which the ECB's reaction function reliably re-anchors inflation within the medium-term horizon, debt news would be expected, at most, to temporarily raise short-term inflation expectations through real activity spillovers. The significant response at three years instead suggests that German firms expect higher debt in other euro-area countries to be partly accommodated through higher inflation. At the same time, the absence of a detectable effect at five years suggests that long-run inflation expectations remain anchored, consistent with firms viewing any fiscal-inflation episode as persistent but not permanent.

We then examine how this average response depends on ex ante trust in the ECB. First, we show that trust is closely linked to firms' fiscal-dominance beliefs. In an earlier BOP-F wave, firms were asked how much they trust the ECB to fulfill its price-stability mandate on a 0–10 scale. In our experiment, we also elicit the perceived likelihood of a fiscal-dominance scenario described as follows: "The ECB might be unwilling to raise interest rates by the amount needed to bring inflation down to its 2% target because it worries about the fiscal sustainability of some governments in the Euro Area." We define a fiscal-dominance indicator equal to one if firms judge this scenario as "likely" or "very likely." The relationship between trust and this indicator is steep and monotonic: moving from the highest to the lowest trust bin increases the share of firms that view fiscal dominance as likely or very likely from roughly 40% to about 70%. In this sense, low trust and high perceived fiscal dominance are closely

related manifestations of a broader belief about the strength of the ECB's commitment to price stability.

Guided by this correlation, we split the sample at the median of the trust distribution and re-estimate the treatment effects separately for low- and high-trust firms. The heterogeneity is stark. Among low-trust firms, debt news leads to sizable and statistically significant upward revisions of both one-year and three-year inflation expectations, with effects that are roughly twice as large as in the full sample and economically meaningful: a one-standard-deviation increase in pessimistic qualitative foreign-debt expectations raises one-year domestic inflation expectations by about 0.5 percentage points and three-year expectations by 1.4 percentage points, while responses at the five-year horizon remain small and insignificant. By contrast, high-trust firms exhibit only a modest, short-lived adjustment. Their one-year inflation expectations increase slightly, and their three-year expectations do not move in a statistically detectable way. Thus, the persistence of inflation expectations in response to fiscal news is an attribute of low-trust firms. Moreover, the response is concentrated among firms that, prior to the experiment, expected relatively low future ECB policy rates, consistent with the mechanism operating through beliefs that the ECB may not tighten sufficiently in response to fiscal stress. For high-trust firms and for firms expecting higher policy rates, the transmission is closer to the monetary-led benchmark.

Finally, we provide complementary evidence from a major German fiscal shock that directly tests the model's cross-country prediction. In March 2025, the prospective new German government announced a large debt-financed fiscal package centered on a €500 billion infrastructure fund (*Sondervermögen für Infrastruktur und Klimaneutralität*) that circumvents the constitutional debt brake. The announcement was both unexpected and highly salient. German 10-year bond yields jumped sharply, and the announcement was widely covered in the media as it represented a major shift in German fiscal policy. We use the announcement to conduct an event study by comparing firms' inflation expectations within a three-day window around the announcement. Consistent with the model's distinction between fiscal shocks in the anchor country and in the fiscally fragile part of the monetary union, German firms' inflation expectations did not move around the announcement. This null effect holds across one-, three-, and five-year horizons, and among low-trust firms. The evidence, therefore, supports a key implication of our framework: firms do not treat sovereign debt news as mechanically inflationary. Rather, debt news raises inflation expectations when it concerns countries whose fiscal backing is perceived as less secure and where firms may expect the common central bank to accommodate fiscal stress.

Our interpretation of the results is guided by the distinction between fully funded and partially unfunded debt in a Fisherian framework. In richer models, foreign fiscal expansions

may, in principle, generate cross-border demand spillovers that temporarily affect inflation. However, such effects should be small and short-lived, provided the central bank retains control over inflation dynamics and remains committed to re-anchoring inflation over its medium-term horizon. By contrast, sizable responses of inflation expectations at medium horizons point to a policy mix tilted toward monetary accommodation, in which part of the adjustment is expected to occur through inflation rather than through future fiscal surpluses. Consistent with this interpretation, we find no evidence that news of higher foreign debt raises growth expectations, contrary to what would be expected under a demand-driven increase in inflation. Moreover, the inflation response is concentrated among firms that expect relatively low future ECB policy rates, suggesting that firms expecting higher inflation are precisely those who expect the central bank to tighten less aggressively. Finally, the finding that low trust in the central bank is systematically associated with beliefs about a high likelihood of fiscal dominance provides corroborating evidence that firms perceive increases in debt in high-debt countries as inflationary because they expect some degree of monetary accommodation.

Related Literature Our paper contributes to a growing literature that uses randomized information experiments to study how fiscal news shapes macroeconomic expectations and policy preferences. So far, the literature has focused exclusively on households. Coibion et al. (2021) field a large-scale RCT on U.S. households, providing information about both current and projected U.S. government debt. They find that households do not revise their inflation expectations in response to information about current debt, but do react to news about future debt. Grigoli and Sandri (2024) find that informing households in the U.S., U.K., and Brazil about the current public debt levels in these countries raises their inflation expectations, with weaker effects for households that believe that the central bank will prevent large increases in inflation. Andrade et al. (2025) provide information about government debt in Germany, Italy, and France to German households, which has a small positive effect on their inflation expectations, driven by households that are pessimistic about fiscal sustainability. In contrast, Roth et al. (2022) use information treatments about the U.S. debt-to-GDP ratio to study their effect on households' preferences for spending and taxation. They show that information about government debt reduces support for government spending and worsens expectations about fiscal sustainability.

Our paper contributes to this literature in several ways. We study firms rather than households. Firms' expectations are directly tied to price-setting and investment decisions (Coibion et al., 2018, 2020; Candia et al., 2023; Bartscher et al., 2026; Baumann et al., 2026), and their belief formation differs systematically from that of households (Link et al., 2023; Wehrhöfer, 2026). To study the mechanism of fiscal dominance, we exploit the monetary

union setting and provide German firms with information about debt in other euro-area countries. Methodologically, we use an active-control design that does not rely on firms' prior debt expectations for identification and controls for side effects of information provision, such as priming, increased attention, or reduced uncertainty. Substantively, we show that trust in the ECB—a predetermined, observable characteristic closely linked to fiscal-dominance beliefs—is the key conditioning variable determining whether foreign debt news spills over into persistent domestic inflation expectations. We also show that the response is concentrated among firms expecting relatively low ECB policy rates, consistent with a mechanism operating through expected monetary accommodation, and that a salient German debt-financed fiscal shock generates no comparable response.

Our paper also connects to the literature documenting that trust in the central bank shapes inflation expectations. Christelis et al. (2020) and Mellina and Schmidt (2018) show that households with higher trust in the ECB report lower and better-anchored inflation expectations, and Dräger and Nghiem (2025) provide experimental evidence that raising trust affects expectation formation. We contribute to this literature by showing that trust is not only correlated with inflation expectations but also conditions firms' responses to fiscal news. Low-trust firms sharply revise their inflation expectations upward after pessimistic debt news, whereas high-trust firms do not. We further show that trust is tightly linked to beliefs about fiscal dominance, providing a structural interpretation of why trust matters for the transmission of fiscal news.

Last, our work is also related to the growing literature on monetary/fiscal policy interaction. A first wave of contributions was mostly theoretical (among many others Barro (1974), Sargent and Wallace, 1981, Leeper, 1991, Sims, 1994, Woodford, 1994, 1995, 2001, Schmitt-Grohe and Uribe, 2000, Cochrane, 1998, 2001, Bassetto, 2002, Reis, 2017, Benhabib et al., 2002). A second wave makes progress on the empirical side by embedding the mechanisms of these early contributions in models with nominal rigidities (Bianchi and Ilut, 2017, Bianchi and Melosi, 2022, Bianchi and Melosi, 2017, Bianchi et al., 2023). In this respect, our findings are consistent with Barro and Bianchi (2025), who show that post-COVID inflation in the euro area can be explained by the euro area level of fiscal stimulus, rather than by fiscal spending in individual countries.

2 A Simple Model

We present a parsimonious Fisherian model of a monetary union composed of two countries, each governed by a national fiscal authority, and a common central bank that sets the nominal interest rate $r_{n,t}$. The model can be derived from first principles by treating the

two countries as symmetric with fixed and identical endowment Y. We assume perfect international risk sharing, which implies a common inflation rate across countries ($\pi_{1,t} = \pi_{2,t}$). The only disturbances in the model are country-specific fiscal shocks that raise public liabilities, equivalently, negative shocks to primary surpluses. This allows us to isolate the inflation implications of fiscal backing in a monetary union.

Our analysis builds on the work of Bianchi, Melosi, and Rogantini Picco (2026), who show that, under perfect international risk sharing, determinacy of a rational expectations equilibrium requires one of the following policy configurations: *i)* active monetary policy combined with passive fiscal policy in both countries, or *ii)* passive monetary policy with asymmetric fiscal behavior, whereby one country conducts active fiscal policy while the other follows a passive fiscal stance. In the second configuration, only one fiscal authority is not committed to stabilizing public debt through fiscal adjustments, while the fiscal authority in the other country remains fully credible. Consequently, the common central bank allows inflation to adjust to stabilize the fiscally irresponsible country's debt, ensuring the determinacy of a unique, stationary, rational-expectations equilibrium.

We depart from Bianchi, Melosi, and Rogantini Picco (2026) by assuming that the common monetary authority and the two fiscal authorities coordinate on the share of country 1's fiscal disturbance that is expected to be fiscally funded, in the sense of Bianchi, Faccini, and Melosi (2023). We summarize this belief with a trust parameter $\theta \in [0, 1]$, which we interpret as the degree of trust in the central bank's commitment to price stability. When $\theta = 1$, trust is full: the entire increase in country 1's public liabilities is expected to be backed by future fiscal adjustments, so no inflationary accommodation is required. When $\theta = 0$, trust is absent: none of the increase in public liabilities is expected to be backed by future surpluses, so the whole shock is fiscally unfunded and must be stabilized through inflation. Intermediate values of θ correspond to partial trust. The parameter θ therefore splits country 1's fiscal disturbance into a funded component, $\theta\varepsilon_{1,t}$, and an unfunded component, $(1-\theta)\varepsilon_{1,t}$. The funded component is backed by expected future surpluses; the unfunded component is the part stabilized through inflation. The log-linear equations describing the model are as follows, with variables carrying a superscript F tracking the unfunded, fiscal-led component.

We define these variables formally immediately after the system.

$$r_{n,t} = r_t + E_t \pi_{1,t+1}, \tag{1}$$

$$\pi_{1,t} = \pi_{2,t}, \tag{2}$$

$$b_{i,t} = \beta^{-1} \left[b_{i,t-1} + r_{n,t-1} - \pi_{i,t} - (1-\beta)\, \tau_{i,t} \right], \quad i \in \{1,2\} \tag{3}$$

$$r_{n,t} = n \left[\phi_A \left(\pi_{1,t} - \pi^F_{1,t} \right) + \phi_P \pi^F_{1,t} \right] + (1-n) \left[\phi_A \left(\pi_{2,t} - \pi^F_{2,t} \right) + \phi_P \pi^F_{2,t} \right], \tag{4}$$

$$\tau_{1,t} = \gamma_{P,1} \left(b_{1,t-1} - b^F_{1,t-1} \right) + \gamma_{A,1} b^F_{1,t-1} + \varepsilon_{1,t}, \tag{5}$$

$$\tau_{2,t} = \gamma_{P,2} b_{2,t-1} + \varepsilon_{2,t}, \tag{6}$$

where E_t denotes expectations conditional on information at time t, and r_t is the real interest rate. The variables $b_{i,t}$ and $\tau_{i,t}$ denote the real value of public debt and the primary surplus in country $i \in \{1,2\}$, respectively. The parameter n is the weight of country 1 in the monetary union, which we set to $n = 1/2$. The shocks $\varepsilon_{i,t}$ are country-specific fiscal disturbances. Variables carrying superscript F denote the fiscal-led components of inflation and debt; these objects are defined formally in the shadow-economy construction below.

Equation (1) is the Fisher equation obtained from the household consumption problem. Equation (2) restates the perfect-risk-sharing condition. Equation (3) is the government budget constraint, which takes the same form in both countries. Equation (4) specifies the common monetary policy rule: the central bank responds actively, with coefficient $\phi_A > 1$, to inflation in excess of the fiscal-led component, and passively, with coefficient $\phi_P < 1$, to the fiscal-led component itself. Equations (5) and (6) describe the fiscal rules in countries 1 and 2. The parameters $\gamma_{P,i}$ and $\gamma_{A,1}$ govern the fiscal response to funded and unfunded debt, respectively.

Fiscal inflation is nonzero only when trust is imperfect. If $\theta = 1$, the country 1 fiscal disturbance is fully backed, no fiscal-led component is present, and $\pi^F_{1,t} = \pi^F_{2,t} = 0$ for all t. If $\theta < 1$, the unfunded component of country 1 debt is captured by $b^F_{1,t}$, and the central bank responds passively to the associated fiscal inflation, with $\phi_P < 1$. The fiscal rule in country 1 allows the fiscal authority to respond differently to funded debt, $b_{1,t} - b^F_{1,t}$, and unfunded debt, $b^F_{1,t}$, with $\gamma_{P,1} > 1 > \gamma_{A,1}$. By contrast, country 2 always follows a passive fiscal rule, $\gamma_{P,2} > 1$, so its debt is fully backed.

Shadow economy. Variables with superscript F are determined in a shadow economy, which serves as an accounting device for the unfunded component of debt and the fiscal inflation required to stabilize it. The shadow economy replicates the actual economy except for two differences. First, monetary policy is always passive, while fiscal policy is active in country 1 and passive in country 2. Second, only shocks that trigger a fiscal-led policy response enter this economy. Under the trust-based formulation above, this means that only

the unfunded component of country 1's fiscal disturbance, $(1-\theta)\varepsilon_{1,t}$, enters the shadow economy. The funded component, $\theta\varepsilon_{1,t}$, is instead backed by expected future surpluses and belongs to the monetary-led component of the actual economy. The rationale for this construction is discussed in detail in Bianchi, Faccini, and Melosi (2023).

When the central bank is fully trusted to control inflation, $\theta = 1$, the entire fiscal disturbance in country 1 is backed by future surpluses. No shock therefore enters the shadow economy, and all variables with superscript F are equal to zero. When trust is imperfect, $\theta < 1$, only the unfunded component of country 1's fiscal disturbance, $(1-\theta)\varepsilon_{1,t}$, enters the shadow economy. This component determines the stock of fiscally unfunded debt, $b^F_{1,t}$, and the associated fiscal inflation rates, $\pi^F_{i,t}$, for $i \in \{1, 2\}$. Fiscal shocks in country 2, $\varepsilon_{2,t}$, do not enter the shadow economy because country 2 always follows a monetary-led, fiscally backed policy mix.

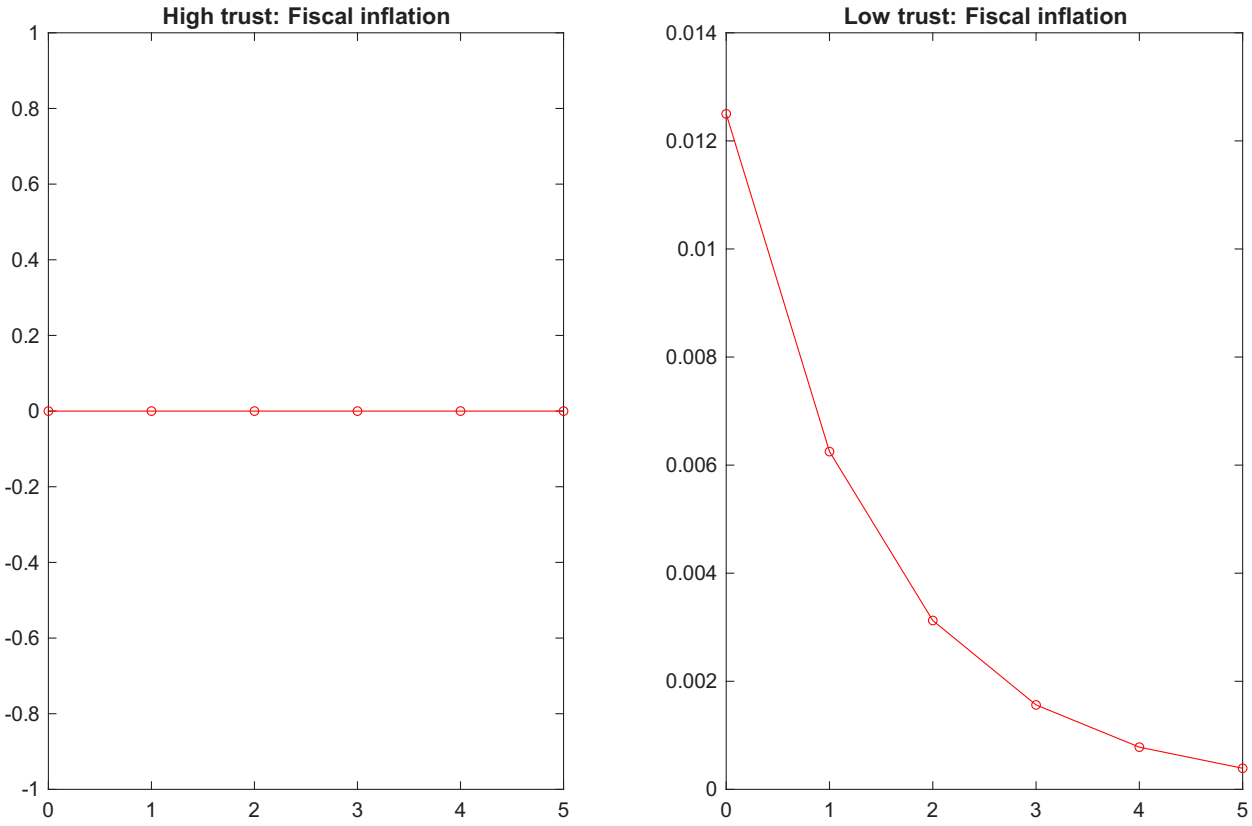
The model is driven by country-specific fiscal disturbances, $\varepsilon_{i,t} \sim \mathcal{N}(0, 1)$ for $i \in \{1, 2\}$, which are independent across countries and over time. The unit variance is a normalization. We set the discount factor to $\beta = 0.975$, the active monetary response to inflation in excess of fiscal inflation to $\phi_A = 1.5$, the passive monetary response to fiscal inflation to $\phi_P = 0.5$, and the passive fiscal responses to $\gamma_{P,1} = \gamma_{P,2} = 1.5$. Finally, we set $\gamma_{A,1} = 0$, so country 1 does not adjust primary surpluses in response to debt accumulated through the unfunded component of the shock. In the impulse responses below, we focus on the two polar cases, full trust ($\theta = 1$) and no trust ($\theta = 0$).

Figure 1 shows the propagation of a debt shock in country 1 in the two extreme trust scenarios, $\theta = 1$ and $\theta = 0$. When $\theta = 1$, inflation does not respond: the increase in debt is fully fiscally funded, so the monetary-fiscal dichotomy holds. When $\theta = 0$, the same debt shock is entirely unfunded and must be stabilized through inflation, generating a persistent inflation response. Intermediate values of θ would imply intermediate inflation responses, because only the share $1 - \theta$ of the shock enters the shadow economy. By contrast, a debt shock originating in country 2 does not affect inflation (not shown) because country 2 remains fiscally disciplined and its policy mix in response to such shocks is monetary-led.

2.1 Mapping the model to the data

The model is intentionally bare-bones. Its purpose is not to capture all channels through which foreign fiscal developments might affect inflation in a monetary union, but to isolate one mechanism: how expectations about the monetary-fiscal policy mix shape inflation dynamics when countries share a common central bank. Within this mechanism, the central distinction is whether an increase in public debt is expected to be *fully funded*. We summa-

Figure 1: Propagation of a fiscal shock to inflation



Notes: Propagation of a fiscal shock to inflation under full trust ($\theta = 1$, left panel), where the shock is fully backed by future fiscal surpluses, and no trust ($\theta = 0$, right panel), where the shock is entirely unfunded and stabilized through inflation.

rize this distinction with the trust parameter θ. Under monetary dominance and high trust (θ close to 1), a debt shock is matched by expectations of future fiscal adjustment, so that inflation need not adjust. Under lower trust ($\theta < 1$), by contrast, part of the debt shock is *unfunded*—that is, not matched by expected fiscal adjustment—so that equilibrium requires inflation to absorb part of the adjustment. The defining implication is a persistent increase in inflation: inflation rises to stabilize the unfunded component of debt.

When taking this mechanism to the data, we recognize that alternative transmission channels may also operate. For instance, news about higher debt levels may coincide with changes in foreign fiscal expenditures that generate cross-border demand spillovers and temporarily affect inflation. Our identifying assumption is therefore not that such channels are absent, but rather that they should not give rise to persistent movements in inflation and, crucially, should be unrelated to beliefs about the central bank's willingness to accommodate fiscal imbalances. Under a monetary-led policy regime, the common central bank retains control over inflation dynamics at medium-term horizons. Accordingly, even if debt news influences inflation expectations in the short run, monetary dominance implies that

such effects should not exhibit economically meaningful persistence: expectations should re-anchor within the horizon over which the central bank is expected to stabilize inflation. Moreover, these alternative channels are likely to be more pronounced for domestic than for foreign shocks and should not systematically vary with a country's fiscal reputation.

This logic motivates our experimental design. The information treatment shifts German firms' beliefs about the future debt trajectories of France, Italy, and Spain, which we treat as a single block. We interpret this as news about debt developments in the part of the monetary union that may be perceived as fiscally fragile—the empirical counterpart of the country in the model whose debt shocks may be partially unfunded. Conversely, debt news about the fiscally disciplined member should not generate the same inflation response, because such shocks are expected to remain fully backed and monetary-led. This implication motivates our complementary evidence from the German fiscal announcement. The key empirical question is whether pessimistic foreign debt news generates only short-lived revisions in inflation expectations, as under a monetary-led policy mix, or instead raises expectations at medium-term horizons. A persistent inflation response is the model's signature of imperfect fiscal backing: it indicates that firms view part of the fiscal adjustment as likely to occur through inflation rather than entirely through future fiscal surpluses.

The model also delivers cross-sectional predictions. Lower trust in the central bank corresponds to a lower perceived value of θ, and hence to a larger perceived unfunded component of debt. The inflationary effect of pessimistic debt news should therefore be stronger among firms with lower trust in the ECB, who are more likely to perceive fiscal stress as imperfectly backed. The same logic predicts stronger responses among firms expecting a more accommodative ECB response. In the model, fiscal inflation arises when the common central bank is expected to tolerate, rather than fully offset, the inflationary pressure created by unfunded debt. Firms expecting lower future policy rates should therefore be more likely to interpret pessimistic debt news as inflationary.

3 Data and Survey Design

3.1 The aim of the survey

Our survey examines how fiscal news from highly indebted euro-area member states affects German firms' inflation expectations, and whether this transmission depends on trust in the central bank and beliefs about fiscal dominance. The objective is to assess whether this channel is consistent with monetary dominance or instead exhibits features of fiscal dominance. We focus on firms' expectations because their belief formation is closely tied

to price-setting and investment decisions, making firms a key conduit through which fiscal shocks propagate into inflation.

To this end, we embed a randomized controlled trial (RCT) in the Bundesbank Online Panel of Firms (BOP-F). German firms are presented with either an optimistic or a pessimistic scenario for the *average* future debt-to-GDP ratio of France, Italy, and Spain, treated as a single block comprising the three largest euro-area economies outside Germany and, historically, among the most fiscally vulnerable.[3] The optimistic scenario features a substantial decline in the block's debt ratio, whereas the pessimistic scenario features a substantial increase. This design generates exogenous variation in firms' beliefs about foreign fiscal fundamentals that is salient, realistic, and directly related to the fiscal risks that have historically raised concerns about the stability of the monetary union.

We then use experimentally induced variation in debt beliefs to examine how firms revise their inflation expectations across different horizons and adjust their views on fiscal and monetary risks. Under a monetary-led policy, debt news should not generate persistent inflation. Any short-run movement could come from other channels, but should fade within the policy horizon. If instead firms believe that debt is only partially funded and that the ECB will accommodate fiscal stress, that pessimistic debt news leads to upward revisions in inflation expectations for the years ahead. By combining the randomized treatment with rich information on pre-existing trust in the ECB, the survey allows us to test these competing interpretations of the monetary–fiscal interaction using firm-level expectations data.

3.2 Bundesbank Online Panel: Firms

The Bundesbank Online Panel: Firms (BOP-F) is a survey dataset run by the Deutsche Bundesbank to provide high-frequency insights into the economic conditions and expectations of German firms. It is run quarterly and is representative of the German firm population with respect to sectoral, size, and regional characteristics.[4] Our sample covers about 7000 firms, which are randomly divided into three monthly waves. It follows a rotating panel structure, which allows tracking firms over time. Importantly, almost 90% of respondents are either the owner, executive director, or a member of the board and thus have significant decision-making power within their firm.

The survey's content is divided into core and special question modules. The core questions are asked in every wave and cover broad areas of economic interest, including price and inflation expectations, firm perceptions, and firm characteristics. We will use some of these

[3] Before the survey experiment, the debt-to-GDP ratios in France, Italy, and Spain were 112%, 145%, and 114%, respectively.

[4] See Boddin et al. (2022) for more details on the sampling and structure of the BOP-F.

variables as control variables, prior expectations, and interaction terms in our analysis. These include firm demographics, firm expectations about the ECB's policy rates, and their trust in the ECB to deliver price stability. Additionally, the survey allows researchers to include special modules. We introduced a randomized information treatment and a set of questions in the first quarter of 2024 to elicit beliefs about the impact of foreign fiscal policy on domestic macroeconomic conditions through the interaction between fiscal and monetary policy. In the next section, we describe these questions in detail.

3.3 Information Treatment & Data

After completing the initial set of core questions, the respondents were exposed to a randomized information treatment. Firms are randomly assigned to three equally sized groups, each receiving information on projected public debt developments for the three largest euro-area countries other than Germany—Italy, Spain, and France—drawn from the European Commission's Fiscal Sustainability Monitor (European Commission, 2022). We exploit the fact that the Commission reports multiple debt-to-GDP scenarios for each country, based on alternative macroeconomic and fiscal assumptions. Specifically, we use the most optimistic and the most pessimistic scenarios for Italy, Spain, and France to generate exogenous variation in firms' expectations about sovereign debt. One group is shown the optimistic debt projections, while the remaining two groups receive the pessimistic projections. This design constitutes an active control group experiment in which all firms are exposed to information, but the content of that information differs across groups. Relative to a passive control group design, this approach offers several advantages in our setting (see Haaland et al., 2023, for a discussion). First, identification does not rely on firms' prior beliefs about government debt, which may be ill-defined or weakly held (Coibion et al., 2021). Second, the design controls for ancillary treatment effects—such as increased attention or reduced uncertainty—that arise from receiving information per se and are therefore common across treatment groups.

The optimistic treatment reads as follows:
"According to calculations of the European Commission, under optimistic conditions, the indebtedness of France, Italy, and Spain will substantially decrease. The European Commission projects that the average debt-to-GDP ratio of these countries will decrease from 123% to 105% over the next five years."

The pessimistic treatment instead shows the following message:
"According to calculations of the European Commission, under pessimistic conditions, the indebtedness of France, Italy, and Spain will substantially increase. The European Commission projects that the average debt-to-GDP ratio of these countries will increase from 123%

to 140% over the next five years. "

Finally, the last group was shown the following text:

"The European Commission is worried that the future cost of the pension system and the debt taken on during the COVID-19 pandemic will put the public finances of France, Italy, and Spain under pressure over the next years. According to calculations of the European Commission, under pessimistic conditions, the indebtedness of France, Italy, and Spain will substantially increase. The European Commission projects that the average debt-to-GDP ratio of these countries will increase from 123% to 140% over the next five years."

While the quantitative projections for the two pessimistic treatment groups are identical, the last treatment emphasizes the pandemic's role in worsening fiscal sustainability. All quantitative statements in the information treatments are based on the unweighted average of the individual forecasts.[5]

After the information treatment, we first elicit firms' quantitative and qualitative debt expectations to assess whether the treatment successfully induced a meaningful difference in expectations between the treatment groups. More specifically, we ask for their expectations for the average debt-to-GDP ratio in France, Italy, and Spain in five years relative to today. The qualitative answer categories range from 1 = greatly decrease to 5 = greatly increase, and we normalize them using their standard deviation. Next, we ask firms for their quantitative expectations for the same debt-to-GDP ratio in five years. The five-year time horizon aligns with both the European Commission's forecast horizon used in the information treatment and the long-term inflation expectation question in the BOP-F. After that, we elicit firms' 1-year, 3-year, and 5-year inflation expectations. Importantly, these expectations, using slightly different wording, are also part of the core questionnaire asked before the information treatment. In the core questionnaire, firms are randomized into answering either the 3-year or the 5-year inflation expectation question and we ask firms about the same horizon post-RCT that they asked in the core questionnaire. We use these initial responses as the firms' prior expectations and compute inflation expectation revisions as the difference between the posterior and prior expectations. This approach enhances statistical power and precision by effectively netting out any remaining differences in priors between treatment groups.

Next, firms are asked to provide their expectations for the minimum, most likely, and maximum yearly growth rates of the German economy over the next five years. This enables us to calculate both the long-run mean growth expectation and the standard deviation of growth expectations. To compute these metrics, we assume a triangular distribution based on each firm's minimum, maximum, and mode values. To assess the impact on firms' expectations of their own business, we ask firms for their price, employment, investment,

[5]Taking the GDP-weighted average changes the average by at most one percentage point.

and wage expectations over the next year. Since firms are also asked about their price expectations in the core questionnaire, we again computed the revision. To assess firms' expectations of Germany's long-run fiscal policy, we use a qualitative question asking firms how they expect Germany's tax and government spending levels to change over the next five years, on a scale from 1 = decrease a lot to 5 = increase a lot. We normalize the answers by their standard deviations and compute the difference to obtain deficit expectations.

Finally, we elicit firms' perceptions of potential fiscal and monetary crises by asking respondents to rate the likelihood of three scenarios on a qualitative scale. More specifically, we ask for their assessment over the next five years on a scale from 1 = very unlikely to 5 = very likely for the following scenarios: (1) At least one country in the Euro Area will experience a sovereign debt crisis, (2) The ECB might be unwilling to raise interest rates by the amount needed to bring inflation down to its 2% target because it worries about the fiscal sustainability of some governments in the Euro Area. (3) Countries in the Euro Area will take on permanent joint debt, for example, by issuing so-called Euro Bonds. We transform these qualitative answers into dummy variables, assigning a value of one if a statement is rated as likely or very likely.

We also collect several variables from the core questionnaire and use them as control variables. We observe the number of employees, the firm's broad sector, and the state in which the firm is headquartered. We group firms into quintiles by number of employees to control for size. Furthermore, we compute firms' average policy rate expectation, which is elicited probabilistically in bins of width 0.25 percentage points, ranging from 0 to 5%, using a generalized beta distribution (Engelberg et al., 2009). Leveraging the panel dimension, we use a question on firms' trust in the ECB to deliver price stability, asked in the second quarter of 2023. In our baseline sample, we exclude financial and public-sector firms because they face different incentives from private-sector non-financial firms. Finally, we exclude firms that took either a very short (below the 5th percentile) or a very long time (above the 95th percentile) to respond to the survey.[6] To address potential biases from outliers, we trim the bottom and top 2% of the expectation outcomes. Summary statistics can be found in Appendix Table A.1. We present the exact questions in Appendix B.

3.4 Empirical Strategy

Our empirical strategy uses an instrumental variable (IV) approach to identify the effect of fiscal beliefs on inflation expectations and related outcomes. We leverage random assignment

[6] In robustness checks, we include those firms in the sample, which does not change our results (see Appendix Table A.5. Similarly, including financial or public-sector firms does not affect our results (see Appendix Tables A.6 and A.7).

of firms to either the optimistic or pessimistic treatment, creating exogenous variation in debt-to-GDP beliefs and enabling causal inference into their impact on inflation expectations.

In the reduced form approach, we directly estimate the effect of treatment assignment on firms' inflation expectations. This approach measures how exposure to pessimistic debt projections, relative to optimistic ones, affects inflation expectations on average, without isolating the channel through which this effect operates. The reduced form captures the intent-to-treat effect, providing an overall measure of the treatment's impact on inflation expectations. We estimate the following equation:

$$y_i = \alpha + \beta \text{Treat}_i + \gamma X_i + \varepsilon_i, \tag{7}$$

where y_i represents an outcome of firm i, Treat_i is an indicator for treatment assignment, X_i represents additional control variables, including dummies for firm size quintiles, their broad sector, and state fixed effects, and ε_i is an error term. While this approach is straightforward, it does not allow us to compute the elasticities of the outcome variables with respect to changes in the expected debt-to-GDP ratio. To that end, we implement an instrumental variables approach using two-stage least squares. In the first stage, we estimate the effect of treatment assignment on firms' debt-to-GDP beliefs, thereby using an exogenous indicator of assignment to the pessimistic or optimistic scenario to instrument for debt beliefs. This first stage is specified as follows:

$$\text{Debt}_i = \alpha + \beta \text{Treat}_i + \gamma X_i + \varepsilon_i. \tag{8}$$

Debt_i represents firm i's belief about the average debt-to-GDP ratio for France, Italy, and Spain, and Treat_i is the treatment indicator. The error term ε_i captures unobserved factors that influence firms' debt beliefs. This first stage generates fitted values, $\widehat{\text{Debt}}_i$, representing the exogenous component of debt-to-GDP beliefs driven by treatment assignment. In the second stage, we regress the outcome variable, such as inflation expectations, on the instrumented debt beliefs, as specified below:

$$y_i = \alpha + \beta \widehat{\text{Debt}}_i + \gamma X_i + \varepsilon_i. \tag{9}$$

Using the fitted values from the first stage, $\widehat{\text{Debt}}_i$, we isolate the causal effect of exogenous variation in debt beliefs on inflation expectations, controlling for additional firm-specific characteristics in X_i. Given the prediction from Section 2 that the distinction between monetary and fiscal dominance hinges on a sustained increase in inflation expectations beyond the short term, we test whether the effect on the 3-year and 5-year inflation expectations is significantly different from the effect on 1-year inflation expectations. Formally, we use the difference between revisions in 3-year (5-year) expectations as our outcome and test whether debt news has a significant effect on that difference.[7]

[7]We cannot run the same test for the difference between 3-year and 5-year inflation expectations since

Table 1: First stage: Effect of treatments on debt-to-GDP expectations

	(1) debt-to-GDP expectation (in pp)	(2) debt-to-GDP expectation (in pp)	(3) qual. debt-to-GDP expectation (in sd)	(4) qual. debt-to-GDP expectation (in sd)
pessimistic scenario	16.782***		0.801***	
	(1.178)		(0.028)	
pessimistic scenario + context	16.619***		0.856***	
	(1.180)		(0.029)	
combined pessimistic scenarios		16.701***		0.829***
		(0.992)		(0.026)
control mean	105.073	105.073	4.467	4.467
N	7015	7015	7010	7010

Notes: Statistical significance denoted as: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (8) estimated on the baseline sample.

The reduced-form specification estimates the treatment effect of providing firms with pessimistic debt news. The IV approach allows us to quantify the effect of a 1-percentage-point increase in debt-to-GDP beliefs by scaling the reduced-form results with the first stage. This empirical strategy allows us to evaluate the sensitivity of firms' inflation expectations to fiscal conditions in high-debt euro area countries. By exploiting the random assignment of fiscal scenarios, we attribute observed shifts in inflation expectations directly to variations in debt beliefs induced by our experimental design. We exploit this approach to examine how cross-country fiscal conditions impact inflation expectations in an interconnected economic setting, such as the euro area, where fiscal spillovers may influence national inflation dynamics.

4 Results

Validation of the Information Treatment: Shifts in Fiscal Beliefs We first test whether the information treatment effectively shifts firms' beliefs about the average debt-to-GDP across France, Italy, and Spain. By combining qualitative and quantitative questions, we aim to capture a comprehensive view of firms' beliefs about future fiscal conditions in key euro area economies. The responses to these questions allow us to measure the depth and direction of belief shifts prompted by our information treatment.

Table 1 presents the effects of the pessimistic treatments relative to the optimistic treatment, with each row showing results for a different treatment scenario. Columns (1) and (2) of Table 1 report the results for the quantitative expectation of firms' debt-to-GDP ratio in five years. The results indicate that firms exposed to either of the pessimistic treatments

each individual firm is only asked about one of those two horizons.

increase their debt-to-GDP expectations by about 16.7 percentage points relative to the control group. Given that the difference in the information provided between the optimistic and pessimistic scenarios is 35%, this corresponds to a learning rate of 48%. This is a significant shift, given that firms are likely to have preexisting information about the fiscal situation in the relevant countries. Columns (3) and (4) report the results for firms' qualitative debt-to-GDP expectations. Here, firms receiving either pessimistic treatment also exhibit a significant upward shift of about 0.8 standard deviations, reflecting heightened concerns. For both outcomes, the two pessimistic treatments have very similar effects, suggesting that the additional pandemic-related context does not significantly alter the pessimistic response. In the following, we combine the two pessimistic treatment arms into a single pessimistic treatment to maximize statistical power. Appendix Figure A.1 shows the shift in the cumulative distribution of debt-to-GDP expectations induced by the RCT, illustrating that the pessimistic treatment shifts the entire distribution to the right.

Effects of Fiscal Beliefs on Inflation Expectations We next examine how the exogenously shifted debt expectations about other euro area countries influence firms' inflation expectations for Germany. First, we estimate the reduced-form effect of the information treatment. Exposure to the pessimistic relative to the positive treatment significantly increases 1-year inflation expectations by 0.17 percentage points and 3-year inflation expectations by 0.42 percentage points, whereas long-run expectations are unaffected (see Panel A of Table 2).

Panels B and C of Table 2 report results from an instrumental variable estimation, in which we instrument firms' debt expectations with the information treatment, using the revision in inflation expectations as the outcome. We find that a 10-percentage-point increase in the expected debt-to-GDP ratio significantly increases 1-year inflation expectations by 0.11 percentage points and 3-year inflation expectations by 0.26 percentage points. In the long run, inflation expectations are not significantly affected. Similarly, a one-standard-deviation increase in qualitative debt expectations shifts short- and medium-term inflation expectations up by 0.21 and 0.49 percentage points, respectively. Across all specifications, we have very strong first-stage results, with F-statistics ranging from 120 to 1000, clearly exceeding standard thresholds. Importantly, the effect on 3-year inflation expectations differs significantly from the effect on 1-year expectations across all specifications ($p < 0.05$).

The magnitudes at the medium horizon are also economically meaningful. A one-standard-deviation increase in qualitative debt expectations raises three-year inflation expectations by around 0.5 percentage points, relative to a control-group mean of about 3.4%. This implies that firms do not merely foresee a short-lived inflationary blip. They expect

Table 2: Effect of debt expectations on inflation expectations

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: reduced-form			
combined pessimistic scenarios	0.172**	0.416**	-0.134
	(0.081)	(0.168)	(0.237)
equality with 1-year effect: p-value		0.028**	0.195
control mean	3.818	3.438	3.517
N	6562	3213	3325
Panel B: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.011**	0.026**	-0.008
	(0.005)	(0.011)	(0.014)
equality with 1-year effect: p-value		0.034**	0.195
first stage F-statistic	253.275	123.684	146.960
control mean	3.818	3.438	3.517
N	6562	3213	3325
Panel C: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.207**	0.485**	-0.172
	(0.097)	(0.193)	(0.299)
equality with 1-year effect: p-value		0.027**	0.194
first stage F-statistic	958.500	523.622	432.736
control mean	3.818	3.438	3.520
N	6558	3211	3322

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. In Panel A, the regression results are based on equation (7) estimated on the baseline sample. In Panels B and C, the regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the baseline sample. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

inflation to remain elevated over a horizon that extends well beyond the two-year window the ECB associates with "medium-term" price stability. At the same time, the absence of a significant effect at five years suggests that firms do not interpret pessimistic fiscal news as implying a permanent loss of nominal anchor, but rather a prolonged, medium-run deviation from target.

To interpret our results as reflecting a change in firms' beliefs about foreign debt, we must rule out the possibility that firms also update their beliefs about German deficits. In Appendix Table A.2, we show that higher foreign debt expectations do not change firms' beliefs about the German fiscal deficit over the next five years. This is because firms expect similar increases in taxation and spending, leaving expected deficits essentially unchanged. Thus, the inflation response does not appear to be driven by expectations of a larger German deficit. The results are consistent with firms expecting any increase in German public spending associated with higher foreign fiscal stress to be largely matched by higher taxes,

in line with Germany's perceived role as a fiscal anchor.

We show that our results are robust to the absence of control variables in the estimation (see Appendix Table A.3), to restricting the sample to decision-makers within firms (see Appendix Table A.4), including firms that took either a very short or very long time to answer the survey (Appendix Table A.5) and to including financial or public sector firms (see Appendix Tables A.6 and A.7). We also verify that firms were successfully randomized by comparing observable characteristics between the treatment and control group (see Appendix Table A.8). We regress the treatment dummy on firm size quintiles, their broad sector, and state fixed effects, none of which correlate with the treatment status (see Appendix Table A.9).

Our results can be interpreted through the lens of the Fisherian framework developed in Section 2, which isolates the role of expectations about the monetary–fiscal policy mix in shaping inflation dynamics in a monetary union. The model's implication is stark: when fiscal backing is perceived as fully credible (a monetary-led policy mix), debt news need not generate inflationary pressures. When fiscal backing is perceived as imperfect, by contrast, part of the adjustment is expected to occur through inflation, implying a persistent inflation response. Of course, our model is deliberately stylized and abstracts from channels—such as cross-border demand spillovers—through which foreign fiscal developments might temporarily affect inflation. But so long as the central bank is expected to re-anchor inflation within its policy horizon, such effects should be short-lived. Under that benchmark, persistent increases in inflation expectations beyond the target horizon are difficult to reconcile with a fully monetary-led interpretation.

By contrast, in the fiscal-theory framework with partially unfunded debt and shock-specific rules, fiscal shocks can be unfunded and partially accommodated by the central bank, generating inflation that is both stronger and less under the monetary authority's control. In that case, part of the adjustment to fiscal imbalances occurs through inflation rather than through future primary surpluses, so the central bank cannot neutralize the inflationary impact of fiscal shocks without violating the government's intertemporal budget constraint. In the flexible-price benchmark presented in Section 2, an unfunded fiscal shock induces a jump in inflation, with persistence that depends on the central bank policy rule due to a Fisherian effect. With nominal rigidities, this required jump is spread out over time, so unfunded fiscal shocks naturally give rise to a persistent inflation response. Thus, qualitatively, the distinction also holds in richer models with nominal rigidities.

Viewed through this lens, our evidence is difficult to reconcile with a simple monetary-led interpretation in which foreign debt news affects inflation expectations only through short-lived spillovers. If firms perceived foreign sovereign debt shocks as operating under

such a regime, the effect of pessimistic debt news should fade as expectations approach the medium-term horizon over which the ECB is expected to re-anchor inflation. Instead, we observe a significant upward revision in three-year-ahead inflation expectations, coupled with no evidence of long-run de-anchoring at the five-year horizon. This pattern suggests beliefs that part of the fiscal burden is stabilized through inflation and that this stabilization is expected to persist for several years. Interpreted through the lens of a model with partially unfunded spending, such as the one presented in Bianchi et al. (2023), firms behave as if they assign a non-negligible probability to fiscal shocks being at least partially unfunded and to the ECB tolerating the resulting inflation for longer than would be consistent with strict monetary dominance. Under these beliefs, persistent inflation following fiscal shocks is not an incidental feature of the data, but rather the defining symptom of partial fiscal dominance—or a tilt toward it. This interpretation is reinforced by our finding that beliefs about fiscal dominance strongly correlate with trust in the central bank, which in turn shapes firms' beliefs about the inflationary consequences of large debt increases in high-debt countries.

Growth Expectations Next, we assess how firms' debt expectations impact their growth expectations. Appendix Table A.10 shows that an increase in firms' debt-to-GDP expectation has no effect on their growth expectation or their uncertainty about future growth rates. These results suggest that pessimistic fiscal scenarios have, on average, little to no impact on firms' expectations of Germany's long-run GDP growth or on the uncertainty surrounding it. The lack of significant change in both the mean and the standard deviation indicates that fiscal shocks abroad do not have persistent effects on long-term GDP expectations.

Beliefs about Crises, Fiscal Dominance, and Euro Bonds We now turn to firms' assessments of three discrete macro-financial scenarios over the next five years: (i) a euro area sovereign debt crisis, (ii) a fiscal-dominance scenario, and (iii) the permanent issuance of joint euro area debt (Euro bonds). Table 3 reports IV estimates where each outcome is a dummy equal to one if the scenario is rated as "likely" or "very likely."

A 10-percentage-point increase in firms' debt-to-GDP expectations significantly raises the perceived likelihood that at least one euro-area country will experience a sovereign debt crisis by about 5.8 percentage points. Expectations that Euro bonds will (very) likely be introduced also rise significantly by 1.7 percentage points. Given that the treatment shifted debt expectations by about 16.7 percentage points, the pessimistic treatment increased the perceived likelihood of a debt crisis and Euro bonds by 9.7 and 2.8 percentage points, respectively. These are sizable effects relative to the control-group means of 45% to 46%.

Table 3: Effect of debt expectations on crisis, fiscal dominance and Euro Bond expectations

	(1) EA debt crisis: (very) likely	(2) fiscal dominance: (very) likely	(3) Euro bonds: (very) likely
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.006***	0.001	0.002**
	(0.001)	(0.001)	(0.001)
first stage F-statistic	281.687	282.893	282.432
control mean	0.463	0.504	0.447
N	7005	7004	6999
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.116***	0.014	0.034**
	(0.015)	(0.015)	(0.015)
first stage F-statistic	1008.406	1008.660	1007.079
control mean	0.464	0.505	0.447
N	7000	6999	6994

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the baseline sample.

These two responses suggest that higher perceived foreign debt levels are associated with greater concern about fiscal stress and a stronger belief that it will be addressed through deeper fiscal integration. At the same time, the high control-group means for both crisis risk and Euro-bond issuance indicate that firms are already substantially concerned about debt levels and fiscal sustainability, even before receiving any information treatment.

The coefficient on the fiscal-dominance scenario is positive but not statistically significant. It would, however, be wrong to interpret this as evidence that firms' beliefs are aligned with monetary dominance. For this question, the key object is the *level* rather than the marginal effect. The control-group mean for the fiscal-dominance indicator is about 50%, implying that about half of firms already view it as (very) likely that, due to fiscal-sustainability concerns, the ECB might refrain from raising interest rates sufficiently to bring inflation back to 2%. In other words, a large share of respondents already assigns substantial probability to fiscal dominance as their central scenario before receiving any treatment.

The lack of a significant treatment effect on the fiscal-dominance dummy is therefore informative. The information treatment shifts beliefs about foreign debt, crisis risk, and Eurobond issuance, but it does not appear to shift firms' stated beliefs about the monetary-fiscal regime itself. Thus, the fiscal-dominance measure is best interpreted as capturing a pre-existing regime belief rather than a margin that the treatment updates. Combined with our inflation results, this distinction is crucial. We have shown that pessimistic debt news leads to persistent upward revisions in short- and medium-term inflation expectations, a

pattern that is hard to reconcile with pure monetary dominance. At the same time, roughly half of the sample reports that fiscal dominance is likely or very likely. Taken together, these facts suggest that the sample comprises both firms whose modal belief is monetary dominance and firms whose modal belief is fiscal dominance, with the treatment primarily shifting the intensity of concerns about crises and Euro bonds, but not overturning deeply held views about the regime itself.

This interpretation is reinforced in the next Section, where we split the sample by ex ante trust in the ECB. We find that lower trust in the central bank is associated with a higher perceived likelihood of fiscal dominance. Consistent with this interpretation, the next section shows that the inflation response to pessimistic fiscal news is concentrated among low-trust firms—those more likely, before the treatment, to view fiscal dominance as plausible—while the expectations of high-trust firms remain closer to the monetary-led benchmark.

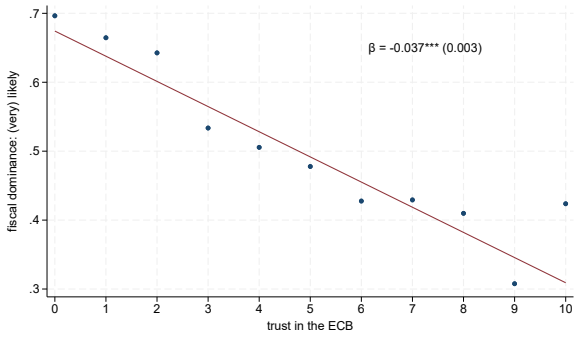
Business Plans Last, we examine whether beliefs about higher debt-to-GDP ratios in other euro area countries translate into changes in firms' business plans. Appendix Table A.11 shows that the effects on expected prices, employment, investment, and wages at the one-year horizon are small and statistically insignificant. The absence of strong effects on these firm-level outcomes indicates that pessimistic foreign fiscal news does not materially alter firms' immediate operational plans. This is not at odds with the inflation results. The information treatment is explicitly framed as a long-run projection for foreign public debt over the next five years, rather than as news about current demand or financing conditions. It is therefore plausible that firms use the treatment to re-evaluate their macro environment, but are unwilling to adjust one-year pricing, hiring, or investment plans until these long-run risks materialize in more concrete short-run indicators such as orders, costs, or credit conditions. Moreover, our data do not distinguish between exporters and non-exporters, so any trade-driven demand effects of foreign fiscal developments may be concentrated among a subset of firms and largely invisible in average responses. In this sense, the inflation and fiscal-belief responses should be interpreted as macro-level shifts in expectations, whereas micro-level adjustments to own plans remain muted in the short term.

5 The Role of Trust in the ECB

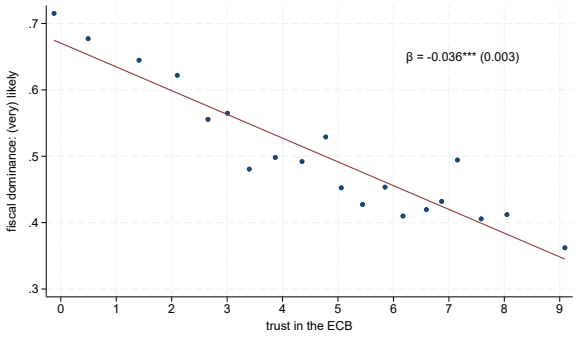
The Fisherian framework developed in Section 2 makes clear that the distinction between the high-trust and low-trust equilibria is ultimately a distinction about beliefs. In the high-trust case, agents expect all public debt to be fully fiscally funded—that is, matched by future primary surpluses—so that debt shocks have no inflationary consequences. In the

Figure 2: Correlation between trust in the ECB and fiscal dominance beliefs

(a) without controls



(b) with controls



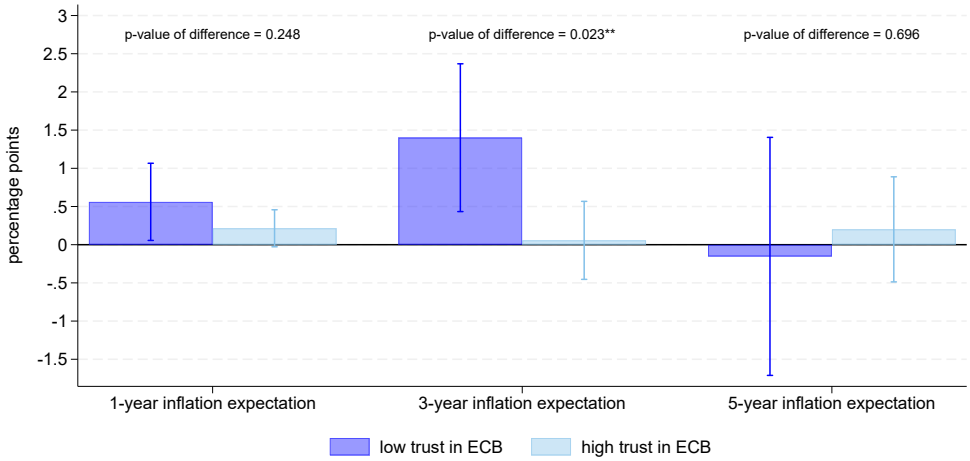
Notes: The figure shows binscatter plots of the probability that firms report that fiscal dominance is likely or very likely, against their trust in the ECB, along with the corresponding regression coefficient. In panel (a), no controls are included, and in panel (b), firm size quintiles, broad sector, and state fixed effects are included.

low-trust case, by contrast, agents expect part of one country's debt to remain unfunded, requiring the common central bank to accommodate the resulting inflationary pressure to ensure debt sustainability. In the notation of Section 2, this distinction is summarized by the trust parameter θ, which governs the extent to which debt shocks are perceived to be funded rather than stabilized through inflation. High trust corresponds to a high perceived θ and therefore to a low perceived likelihood of fiscal dominance, while low trust corresponds to a low perceived θ and therefore to a higher perceived likelihood that the central bank will tolerate inflation to ease fiscal stress.

We therefore investigate whether firms' reactions to fiscal news depend systematically on their trust in the ECB. To do so, we exploit a BOP-F question on trust in the central bank from the second quarter of 2023, which we can link to about half of the firms in our sample. Firms are asked: *"On a scale from 0 to 10, how much do you trust that the European Central Bank is able to deliver price stability?"*, where 0 denotes no trust at all, and 10 denotes full trust. The distribution of trust is highly dispersed. As Appendix Figure A.2 shows, responses cover the entire range, with substantial mass at low values. The mean is around 4.7, and the median is 5, so that a large fraction of firms report at most moderate trust, and a non-negligible share report little or no trust in the ECB.

We next document how this trust measure relates to firms' beliefs about fiscal dominance. Figure 2a shows a pronounced negative relationship between trust in the ECB and the perceived likelihood of fiscal dominance. Moving from the highest to the lowest trust bin raises the share of firms that regard fiscal dominance as likely or very likely from roughly 40% to about 70%. This relationship is unchanged when including controls for firm size, sector, and state fixed effects (see Figure 2b). The correlation supports the model interpretation

Figure 3: Effect of debt expectations on inflation expectations: by trust in the ECB



Notes: This figure plots the IV effect and corresponding 95% confidence bands based on equation (9), in which qualitative debt expectations are instrumented with our treatment, fully interacted with a dummy for (pre-treatment) below-median trust in the ECB. The dark blue bars refer to the treatment effect for low-trust firms, whereas the light blue bars refer to the treatment effect for high-trust firms. See Appendix Table A.12 for the point estimates.

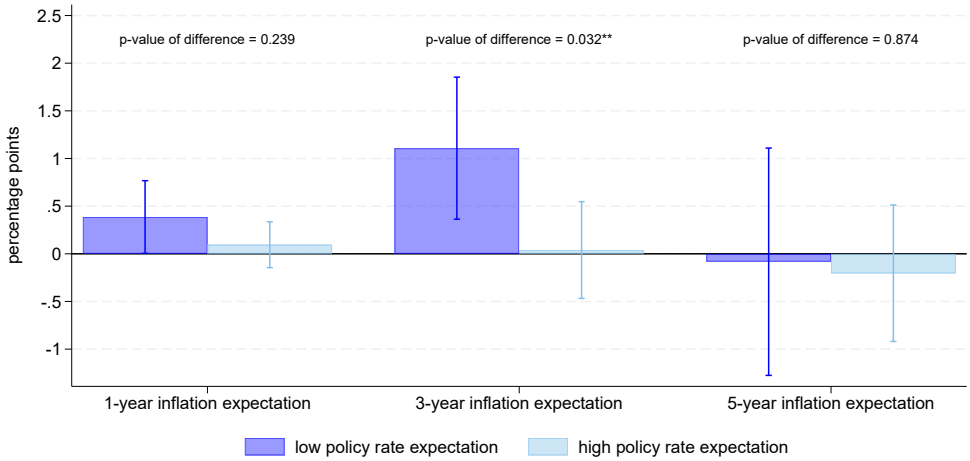
of trust: firms with lower trust are systematically more likely to view fiscal dominance as plausible, consistent with reading lower trust as a lower perceived value of θ.

Even among firms with high trust in the ECB, a substantial minority regard fiscal dominance as likely or very likely. This is not necessarily inconsistent with high unconditional trust in the ECB. Trust in the central bank's ability to deliver price stability may reflect beliefs about a range of contingencies, including demand and supply shocks and other policy trade-offs. Fiscal dominance is a more specific, conditional concern: whether the ECB would continue to deliver price stability in the presence of sovereign-debt stress. The fact that fiscal-dominance beliefs are high even among high-trust firms suggests that concerns about fiscal discipline and monetary-fiscal tensions are widespread among German firms, possibly reflecting the German public debate on fiscal discipline and the risks associated with high debt in other euro-area countries.

We therefore interpret trust in the ECB as an observable proxy for beliefs about the monetary-fiscal regime, but not as a one-to-one measure of fiscal-dominance concerns. High-trust firms assign a lower probability to fiscal dominance, while low-trust firms assign a substantially higher probability to a scenario in which the ECB may accommodate fiscal stress by tolerating higher inflation. This motivates the heterogeneity analysis below, where we test whether the same debt news has different inflationary implications depending on firms' pre-existing trust in the ECB.

In the remainder of this section, we estimate heterogeneous treatment effects by fully

Figure 4: Effect of debt expectations on inflation expectations: by policy rate expectation



Notes: This figure plots the IV effect and corresponding 95% confidence bands based on equation (9), in which qualitative debt expectations are instrumented with our treatment, fully interacted with a dummy for below-median policy rate expectations. The dark blue bars refer to the treatment effect for firms with below-median policy rate expectations, whereas the light blue bars refer to the treatment effect for firms with above-median policy rate expectations. See Appendix Table A.13 for the point estimates.

interacting equation (9) with an indicator for below-median trust in the ECB.[8] Our prior, grounded in the fiscal-theory framework, is that pessimistic fiscal news should generate stronger and more persistent upward revisions in inflation expectations among low-trust firms, because they are more likely to interpret a given increase in foreign debt through a fiscal-dominance regime. High-trust firms should respond more consistently with the monetary-led benchmark.

Trust and Inflation Expectations Figure 3 shows that firms with low trust in the ECB revise their one-year and three-year inflation expectations much more strongly, while firms with high trust respond very little. A one-standard-deviation increase in pessimistic debt expectations raises one-year inflation expectations by roughly 0.5 percentage points and three-year expectations by 1.4 percentage points. The difference in the response at the three-year horizon between low- and high-trust firms is statistically significant ($p = 0.023$) and economically sizable, indicating that low-trust firms expect inflation to persistently overshoot the ECB's target beyond the medium-term horizon. High-trust firms exhibit only a small, short-lived adjustment: their one-year expectations rise slightly, while their three-year expectations remain unchanged. At the five-year horizon, both low- and high-trust firms exhibit small and statistically insignificant effects. The trust gradient is also significantly

[8] We do not interact directly with firms' fiscal-dominance beliefs since they are only elicited after the RCT and are thus endogenous to the treatment.

stronger at the three-year horizon than at the one-year horizon: the low-minus-high-trust difference in the treatment effect is larger for three-year expectations than for one-year expectations ($p < 0.01$; see Appendix Table A.12).[9] This pattern is consistent with standard models of monetary-fiscal policy interaction, which do not predict a permanent loss of the nominal anchor but instead allow for medium-run deviations from the target. Consistent with this interpretation, revisions in inflation expectations are concentrated among firms that distrust the ECB.

To test more directly whether the trust channel operates through expected monetary accommodation, we split firms by their pre-treatment one-year expectation of the ECB policy rate. If pessimistic fiscal news raises inflation expectations because some firms doubt that the ECB will tighten sufficiently, then the response should be concentrated among firms that already expect a relatively low future policy rate. Figure 4 confirms this pattern. Firms with below-median policy rate expectations drive the entire increase in inflation expectations. For them, higher expected foreign debt significantly raises both one-year and three-year inflation expectations, with especially large effects at the medium horizon. By contrast, firms with above-median policy rate expectations do not revise inflation expectations significantly, and neither group shows a significant response at the five-year horizon. These results support the interpretation that policy-rate expectations are a key transmission channel linking low trust in the ECB to stronger inflation responses to fiscal news.

We also consider a simpler crisis-salience channel. Low-trust firms may be more likely than high-trust firms to interpret higher foreign debt as increasing the likelihood of a sovereign debt crisis in the euro area. If respondents mechanically associate such a crisis with other adverse outcomes, this could generate higher inflation expectations without necessarily reflecting beliefs about monetary accommodation. Appendix Table A.14 does not support this explanation. Both low- and high-trust firms increase their perceived likelihood of a sovereign debt crisis by similar amounts, while only low-trust firms revise inflation expectations upward. Crisis concerns, therefore, appear to be part of the broader response to debt news, but they do not by themselves explain the trust gradient in inflation expectations.

Trust and Growth Expectations We next ask whether the same fiscal news that raises inflation expectations for low-trust firms also affects their expectations of aggregate growth. Appendix Table A.15 reports the effect of debt expectations on firms' expectations for German GDP growth and growth uncertainty for low- and high-trust firms. For high-trust firms,

[9] The same pattern holds when we instrument firms' quantitative expectations about foreign debt. Among low-trust firms, a 10-percentage-point increase in the expected debt-to-GDP ratio raises one-year inflation expectations by about 0.30 percentage points and three-year expectations by more than 0.60 percentage points (see Appendix Table A.12).

the coefficients on both mean growth and its uncertainty are small and statistically insignificant, suggesting that higher foreign debt is macroeconomically neutral for Germany's growth prospects. For low-trust firms, the main real-side response is greater uncertainty about future growth. A 10-percentage-point increase in their expected foreign debt-to-GDP ratio increases their expectation standard deviation of growth by about 0.05 percentage points, corresponding to an increase of 7.5% relative to the control mean. Low-trust firms also lower their average growth expectations somewhat, but the effect is only marginally significant at the 10% level.

The key implication is that the inflation response of low-trust firms does not appear to reflect a stronger aggregate-demand channel. If pessimistic foreign-debt news raised inflation expectations because firms expected stronger demand, we should also see higher expected growth in Germany. Instead, growth expectations do not rise: if anything, low-trust firms become more uncertain about future growth, while the decline in average growth expectations is only marginally significant. We therefore interpret these results as ruling out a benign demand-based explanation for the higher inflation expectations of low-trust firms. Rather, the evidence is more consistent with low-trust firms interpreting higher foreign debt as fiscal stress that may become inflationary if the ECB does not fully offset it.

6 Debt News from the Fiscal Anchor

According to the model in Section 2, not all fiscal expansions in a monetary union should have the same inflationary consequences. Fiscal shocks originating in the fiscal anchor are expected to be fully backed by future surpluses and therefore do not give rise to fiscal inflation. By contrast, expansionary fiscal shocks in the fiscally fragile part of the monetary union can raise inflation when firms perceive part of the associated debt increase as unfunded and expect the common central bank to accommodate the resulting fiscal pressure. This asymmetry is central to our empirical interpretation. Our information treatment provides debt news on France, Italy, and Spain, which we map to the fiscally fragile bloc of the monetary union, whereas Germany serves as the fiscal anchor.

This logic suggests a natural placebo test. If firms respond mechanically to any salient increase in public debt, or if our main results simply reflect a generic "debt-scare" heuristic, then a large debt-financed fiscal expansion in Germany should also raise German firms' inflation expectations. In fact, if our results were driven by a Keynesian-type response of inflation expectations to an increase in aggregate demand, a fiscal shock in Germany should have even larger effects on inflation expectations. If, instead, firms respond to the fiscal–monetary nexus emphasized by the model, debt news originating in Germany should

have little effect on expected inflation. This distinction is useful because the German case isolates debt news from the specific concern that fiscal pressures in high-debt member states may induce monetary accommodation by the common central bank.

We test this prediction using the March 2025 announcement of a large German debt-financed fiscal package as a natural experiment. The announcement followed the German federal election on February 23, 2025. During the campaign, the conservative party (CDU/CSU), which led the polls, had emphasized its commitment to preserving the debt brake. However, on March 4, 2025, the party leaders of the CDU/CSU and the Social Democrats announced a plan to establish a large special fund for infrastructure investment (*Sondervermögen für Infrastruktur und Klimaneutralität*). The special fund would create an exception to the constitutional debt brake, enabling debt-financed spending of €500 billion for infrastructure and climate change over a twelve-year horizon. The announcement represented one of the largest shifts in German fiscal policy in decades, required a constitutional change, and generated an immediate financial-market reaction. German 10-year sovereign bond yields rose sharply by more than 30 basis points after the announcement (see Appendix Figure A.3), consistent with market participants interpreting the news as a substantial and unexpected increase in future public borrowing. The announcement also received extensive media coverage (see Appendix Figure A.4).

We use this episode to test whether German firms revise their inflation expectations in response to salient debt news from the fiscal anchor. Following the literature, we employ an event study design to estimate the causal effect of news (Binder et al., 2025; Yotzov et al., 2026). We compare firms interviewed shortly before and shortly after the March 4 announcement, using a narrow event window w around the announcement date d. Formally, we estimate the following equation:

$$y_{it} = \alpha + \beta Post_t + \gamma X_i + \epsilon_i \quad \forall t \in \{d-w, ..., d, ..., d+w\} \tag{10}$$

where y_i is the inflation expectation of firm i answering on day t. $Post_t$ is a dummy taking the value one if the firm answered after the announcement. X_i contains dummies for firm size quintiles, their broad sector, and state fixed effects. The length of the event window w trades off two concerns. Short windows reduce the risk that other events contaminate the comparison, while wider windows allow more time for firms to learn about the announcement. In our baseline, we use a 3-day window centered on the announcement, yielding 461 firms before the announcement and 350 firms after. For robustness, we also estimate the effect using symmetric windows ranging from one to five days around the announcement. The identifying assumption in the event-study framework is that firms answering before and after the announcement are not systematically different. We test this assumption by conducting balance tests for our baseline event window. As Appendix Figure A.5 shows, there are no

Table 4: Effect of debt announcement on inflation expectations

	(1) 1-year inflation expectation (in pp)	(2) 3-year inflation expectation (in pp)	(3) 5-year inflation expectation (in pp)
post debt-package announcement	0.036	0.044	0.084
	(0.062)	(0.112)	(0.111)
controls	yes	yes	yes
pre-announcement mean	2.792	2.920	2.837
N	811	386	425

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (10), estimated on the sample of firms answering the survey in the three days before and after the announcement.

detectable differences in size, sector, or location between firms answering before and after the announcement.

We find no detectable effect of the German fiscal announcement on inflation expectations at the one-, three-, or five-year horizons. The point estimates are insignificant and quantitatively small compared to the RCT results. The effect on 3-year inflation expectations is almost one order of magnitude smaller than the reduced form effect in Table 2. The null result is stable across alternative event windows ranging from one to five days (see Appendix Figure A.6). The same holds when we split firms by trust in the ECB (see Appendix Table A.16). In particular, low-trust firms, which drive the inflation response to debt news about France, Italy, and Spain in our main experiment, do not revise their inflation expectations upward in response to the German fiscal package.

This placebo evidence supports the model's cross-country asymmetry. German firms do not appear to treat salient debt-financed fiscal expansions as mechanically inflationary. Instead, the inflation response in our main experiment arises when debt news concerns the part of the monetary union where fiscal backing may be perceived as less secure and where firms may expect the common central bank to accommodate fiscal stress. The German episode, therefore, disciplines an important alternative interpretation of our results: the main estimates do not simply reflect a generic reaction to sovereign debt news, but are consistent with the model's prediction that inflationary effects arise from fiscal shocks in the fiscally fragile part of the monetary union, not from fiscal expansions in the anchor country.

7 Conclusions

This paper shows that fiscal news in a monetary union affects firms' expectations in a way that depends on their beliefs about the monetary–fiscal regime. Using an active-control information experiment in which German firms receive optimistic or pessimistic debt projections for France, Italy, and Spain, we document four main findings. First, pessimistic news about sovereign debt in high-debt euro-area countries raises German firms' inflation expectations at one- and three-year horizons, while leaving five-year expectations unaffected.

Second, the inflation response is strongly belief-dependent. Low trust in the ECB is systematically associated with a higher perceived likelihood of fiscal dominance, and the effect of debt news on inflation expectations is concentrated among firms with low trust in the ECB. The response is also stronger among firms that expect relatively low future ECB policy rates. These patterns suggest that debt news becomes inflationary when firms perceive fiscal backing as incomplete and expect the common central bank to accommodate fiscal stress rather than fully offset it.

Third, higher foreign-debt expectations also raise firms' perceived likelihood of a euro-area debt crisis and of permanent joint euro-area debt. These responses indicate that firms interpret pessimistic debt news as increasing fiscal stress and the likelihood of non-standard policy responses. However, crisis beliefs alone do not explain the inflation response: crisis expectations rise similarly for both low- and high-trust firms, whereas persistent inflation-expectation revisions are concentrated among low-trust firms. Nor do the results appear to reflect a benign demand channel, since we find no evidence that higher foreign-debt expectations raise expected German growth.

Finally, complementary evidence from the German fiscal announcement supports the model's cross-country asymmetry. German firms do not revise inflation expectations upward in response to a salient debt-financed fiscal expansion in Germany, even among low-trust firms. This placebo evidence suggests that firms do not treat sovereign debt news as mechanically inflationary. Rather, debt news becomes inflationary when it concerns the fiscally fragile part of the monetary union, where fiscal backing is perceived as less secure and monetary accommodation is viewed as more likely.

Interpreted through the lens of a Fisherian framework with partially unfunded debt, the findings suggest that institutional trust shapes whether fiscal news is perceived as inflationary. In a monetary union, the inflationary consequences of sovereign debt news depend not only on the size of fiscal disturbances but also on whether firms believe that the associated debt will be backed by future surpluses or partly stabilized through inflation.

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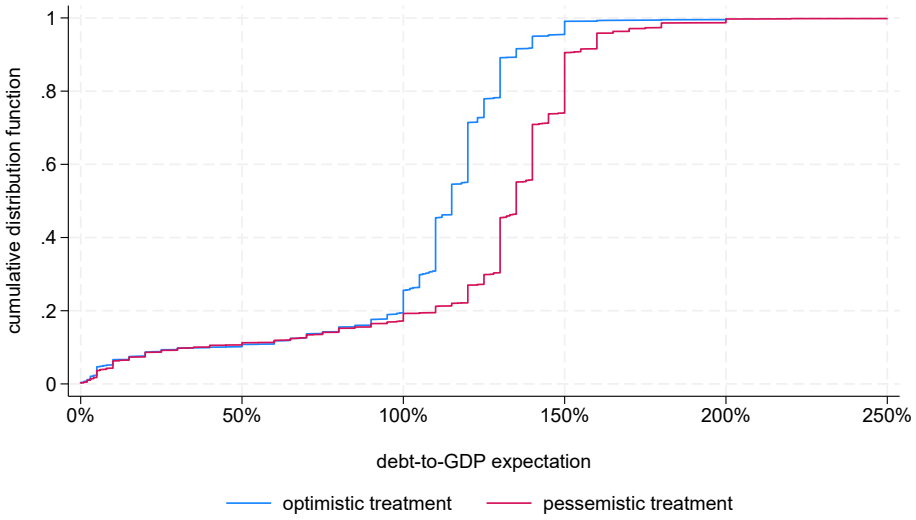
ONLINE APPENDIX TO

Lack of Trust and Fiscal Dominance: Evidence from a Firm Survey Experiment

by Francesco Bianchi, Renato Faccini, Leonardo Melosi and Nils Wehrhöfer

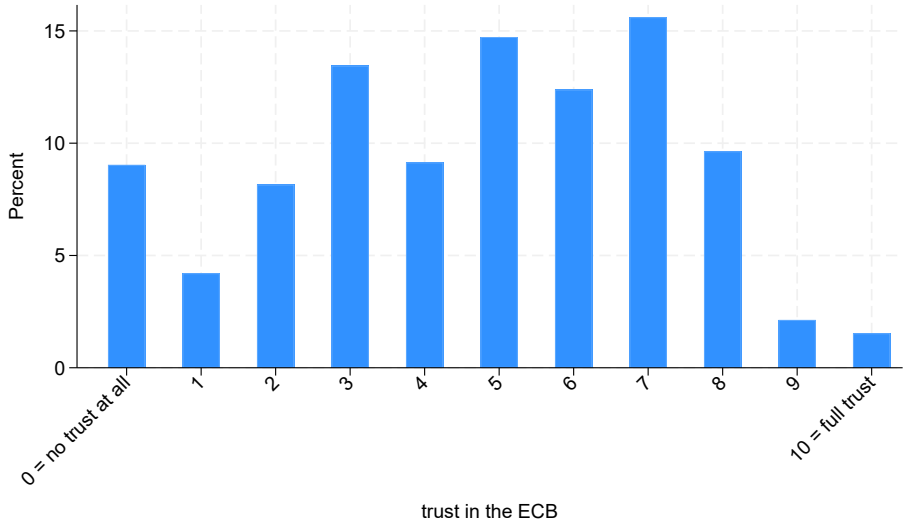
A Additional Tables and Figures

Figure A.1: Cumulative distribution function of debt-to-GDP expectations by treatment group



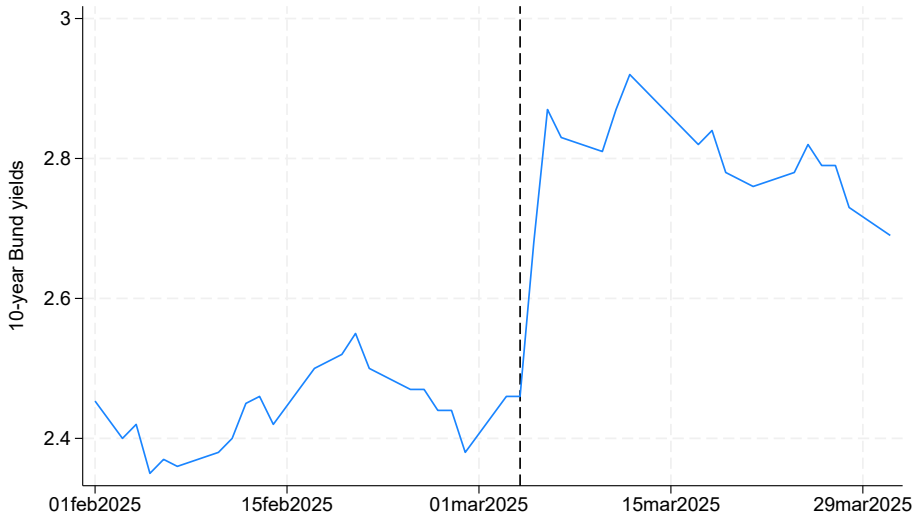
Notes: The figure plots the cumulative distribution function of the debt-to-GDP expectations of the treatment and control groups. The bottom and top four observations for each group are omitted for privacy reasons.

Figure A.2: Histogram of trust in the ECB



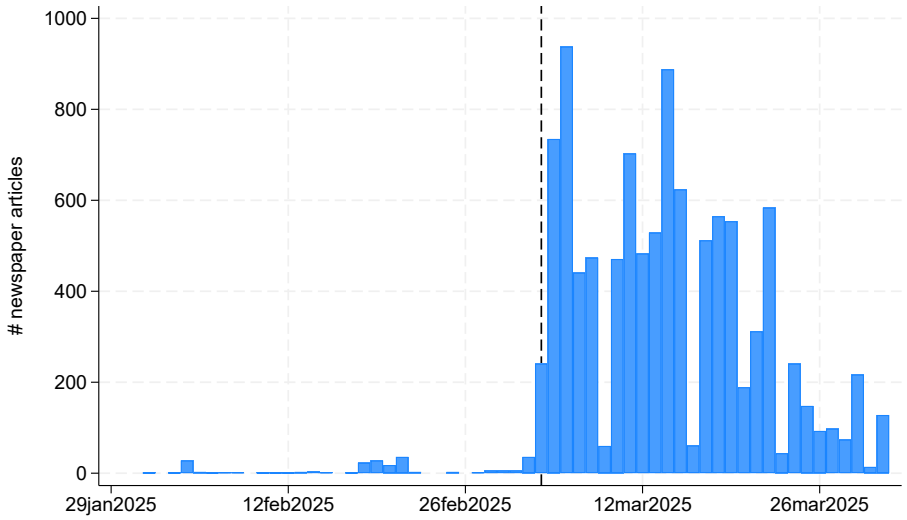
Notes: This figure plots the histogram of firms' trust in the ECB to deliver price stability, ranging from 0 to 10.

Figure A.3: German 10-year sovereign bond yields before and after the announcement



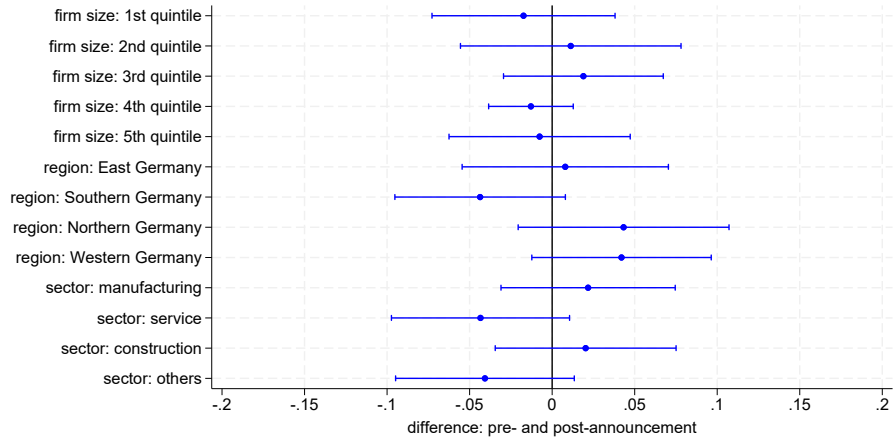
Notes: The figure shows the daily 10-year Bund yields between February and March 2025. The dashed line marks the announcement of the €500 billion special fund for infrastructure. Source: Deutsche Bundesbank.

Figure A.4: # newspaper articles covering the €500 billion special fund for infrastructure



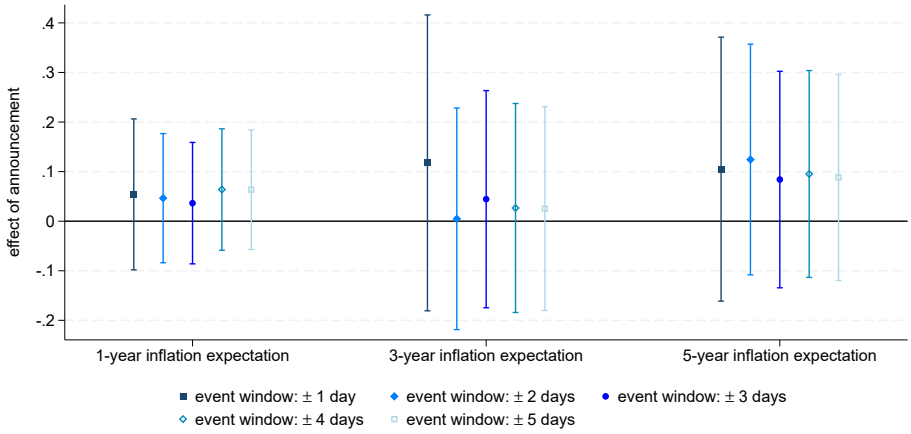
Notes: The figure shows the daily number of newspaper articles mentioning the €500 billion special fund for infrastructure, with the dashed line indicating the announcement date. Source: Genios.

Figure A.5: Balance test of firms answering before and after the announcement



Notes: The figure shows the coefficients and 95% confidence bands of regressing the respective variable on the post-announcement indicator using an event window of three days.

Figure A.6: Effect of debt announcement on inflation expectations: by event window



Notes: This figure plots regression results based on equation (10), estimated on the samples event windows between ±1 and ±5 days.

Table A.1: Summary statistics

	mean	median	sd	N
debt-to-GDP expectation	116.365	130.000	42.226	7219
qualitative debt-to-GDP expectation	3.943	4.000	0.786	7214
1-year inflation expectation	3.821	3.500	1.570	6950
3-year inflation expectation	3.506	3.000	1.638	3412
5-year inflation expectation	3.522	3.000	1.868	3521
growth expectation	0.894	0.900	1.353	6777
growth uncertainty	0.682	0.612	0.474	6909
taxation expectation	3.872	4.000	0.740	7219
spending expectation	4.200	4.000	0.708	7218
EA debt crisis expectation	3.438	4.000	1.274	7209
fiscal dominance expectation	3.435	4.000	1.144	7208
Euro bonds expectation	3.308	3.000	1.177	7203
price expectation	4.747	5.000	5.356	6899
employment expectation	1.881	0.000	8.339	6882
investment expectation	3.955	2.000	12.574	6830
wage expectation	6.269	5.000	4.796	6920
trust in ECB	4.660	5.000	2.551	3474
policy rate expectation	3.319	3.477	0.851	6804
number of employees	139.788	15.000	1183.313	7208
sector: manufacturing	0.206	0.000	0.405	7026
sector: services	0.129	0.000	0.335	7026
sector: construction	0.616	1.000	0.486	7026
sector: other	0.049	0.000	0.216	7026
location: East Germany	0.158	0.000	0.365	7069

Table A.2: Effect of debt expectations on fiscal policy expectations

	(1) taxation expectation (in sd)	(2) spending expectation (in sd)	(3) deficit expectation (in sd)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.005***	0.006***	0.001
	(0.002)	(0.002)	(0.002)
first stage F-statistic	283.279	283.086	283.086
control mean	5.179	5.871	0.692
N	7015	7014	7014
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.093***	0.113***	0.019
	(0.030)	(0.030)	(0.032)
first stage F-statistic	1009.109	1009.144	1009.144
control mean	5.179	5.871	0.692
N	7010	7009	7009

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the baseline sample.

Table A.3: Effect of debt expectations on inflation expectations: without controls

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.010*	0.028**	-0.006
	(0.005)	(0.011)	(0.014)
equality with 1-year effect: p-value		0.019**	0.248
first stage F-statistic	257.794	124.223	148.668
control mean	3.812	3.435	3.510
N	6754	3310	3421
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.188*	0.510***	-0.128
	(0.096)	(0.190)	(0.293)
equality with 1-year effect: p-value		0.013**	0.247
first stage F-statistic	1010.561	554.376	461.803
control mean	3.812	3.435	3.512
N	6750	3308	3418

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, without including control variables estimated on the baseline sample. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.4: Effect of debt expectations on inflation expectations: only decision-maker

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.011**	0.031***	-0.012
	(0.005)	(0.012)	(0.015)
equality with 1-year effect: p-value		0.025**	0.144
first stage F-statistic	233.030	107.504	138.928
control mean	3.819	3.423	3.464
N	5895	2888	2978
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.216**	0.588***	-0.264
	(0.105)	(0.205)	(0.331)
equality with 1-year effect: p-value		0.018**	0.145
first stage F-statistic	820.542	459.760	360.434
control mean	3.819	3.423	3.465
N	5892	2886	2976

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the sample of respondents who are decision-makers within their firms. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.5: Effect of debt expectations on inflation expectations: include firms with very short or long response time

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.012**	0.029***	0.004
	(0.005)	(0.011)	(0.013)
equality with 1-year effect: p-value		0.028**	0.434
first stage F-statistic	283.638	127.647	170.435
control mean	3.820	3.472	3.537
N	7397	3602	3778
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.288**	0.660***	0.115
	(0.118)	(0.237)	(0.363)
equality with 1-year effect: p-value		0.028**	0.434
first stage F-statistic	283.638	127.647	170.435
control mean	3.820	3.472	3.537
N	7397	3602	3778

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated using an extended sample that does not exclude firms based on the time they took to respond to the survey. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.6: Effect of debt expectations on inflation expectations: keep financial firms

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.010*	0.024**	-0.007
	(0.005)	(0.011)	(0.014)
equality with 1-year effect: p-value		0.034**	0.195
first stage F-statistic	254.388	123.787	146.810
control mean	3.818	3.438	3.517
N	6756	3306	3424
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.188**	0.447**	-0.140
	(0.095)	(0.193)	(0.288)
equality with 1-year effect: p-value		0.027**	0.194
first stage F-statistic	977.971	520.865	457.318
control mean	3.818	3.438	3.520
N	6752	3304	3421

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on an extended sample that includes financial firms. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.7: Effect of debt expectations on inflation expectations: keep public sector firms

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.010**	0.025**	-0.007
	(0.005)	(0.011)	(0.014)
equality with 1-year effect: p-value		0.034**	0.195
first stage F-statistic	255.488	123.456	149.138
control mean	3.818	3.438	3.517
N	6586	3228	3334
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.195**	0.468**	-0.160
	(0.097)	(0.194)	(0.298)
equality with 1-year effect: p-value		0.027**	0.194
first stage F-statistic	965.151	526.512	436.705
control mean	3.818	3.438	3.520
N	6582	3226	3331

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on an extended sample that includes public-sector firms. We test whether the revision in 3-year (5-year) inflation expectations equals the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.8: Descriptive statistics by firms' treatment assignment

	control group		treatment group	
	mean	sd	mean	sd
sector: manufacturing	0.200	0.400	0.209	0.407
sector: services	0.124	0.330	0.131	0.337
sector: construction	0.630	0.483	0.609	0.488
sector: other	0.046	0.210	0.051	0.219
firm size: 1st quintile	0.227	0.419	0.233	0.423
firm size: 2nd quintile	0.202	0.401	0.202	0.401
firm size: 3rd quintile	0.193	0.394	0.188	0.391
firm size: 4th quintile	0.188	0.390	0.186	0.389
firm size: 5th quintile	0.191	0.393	0.191	0.393
state: Baden-Württemberg	0.151	0.359	0.148	0.355
state: Bavaria	0.168	0.374	0.168	0.374
state: Berlin	0.034	0.181	0.036	0.187
state: Brandenburg	0.028	0.166	0.023	0.149
state: Bremen	0.012	0.109	0.010	0.097
state: Hamburg	0.034	0.182	0.036	0.185
state: Hesse	0.088	0.283	0.085	0.278
state: Mecklenburg–Western Pomerania	0.012	0.109	0.015	0.121
state: Lower Saxony	0.096	0.294	0.096	0.295
state: North Rhine-Westphalia	0.192	0.394	0.206	0.404
state: Rhineland-Palatinate	0.045	0.208	0.045	0.207
state: Saarland	0.011	0.105	0.009	0.093
state: Saxony	0.046	0.209	0.045	0.207
state: Saxony-Anhalt	0.019	0.137	0.018	0.134
state: Schleswig-Holstein	0.042	0.200	0.042	0.200
state: Thuringia	0.021	0.144	0.020	0.140

Notes: This table shows the mean and standard deviation for firms' size, sector, and location for the treatment and control group.

Table A.9: Randomness of firms' treatment assignment

	(1) pessimistic treatment
firm size: 2nd quintile	-0.009
	(0.017)
firm size: 3rd quintile	-0.014
	(0.018)
firm size: 4th quintile	-0.009
	(0.018)
firm size: 5th quintile	-0.016
	(0.018)
sector: service	0.000
	(0.020)
sector: construction	-0.021
	(0.015)
sector: other	0.010
	(0.028)
state: Bavaria	0.005
	(0.020)
state: Berlin	0.024
	(0.033)
state: Brandenburg	-0.049
	(0.040)
state: Bremen	-0.042
	(0.059)
state: Hamburg	0.016
	(0.033)
state: Hesse	-0.001
	(0.024)
state: Mecklenburg–Western Pomerania	0.055
	(0.048)
state: Lower Saxony	0.005
	(0.023)
state: North Rhine-Westphalia	0.020
	(0.019)
state: Rhineland-Palatinate	0.006
	(0.030)
state: Saarland	-0.046
	(0.061)
state: Saxony	-0.000
	(0.030)
state: Saxony-Anhalt	-0.010
	(0.044)
state: Schleswig-Holstein	0.005
	(0.031)
state: Thuringia	-0.011
	(0.042)
control mean	0.667
N	7015

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on regressing the treatment dummy on observable firm characteristics in the baseline sample. The omitted categories are the 1st firm size quintile, manufacturing, and the state of Baden-Württemberg.

Table A.10: Effect of debt expectations on growth expectations

	(1) growth expectation (in pp)	(2) growth expectation uncertainty (in pp)
Panel A: IV quantitative debt expectations		
debt-to-GDP expectation (in pp)	0.000	0.001
	(0.002)	(0.001)
first stage F-statistic	273.602	279.726
control mean	0.893	0.674
N	6581	6712
Panel B: IV qualitative debt expectations		
qual. debt-to-GDP expectation (in sd)	0.008	0.017
	(0.042)	(0.015)
first stage F-statistic	968.892	952.162
control mean	0.892	0.674
N	6577	6708

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the baseline sample. Growth rate uncertainty is measured by the standard deviation of firms' growth expectations.

Table A.11: Effect of debt expectations on firm-level expectations

	(1) Δ price expectation (in pp)	(2) employment expectation (in %)	(3) investment expectation (in %)	(4) wage expectation (in %)
Panel A: IV quantitative debt expectations				
debt-to-GDP expectation (in pp)	0.000	-0.010	0.014	0.003
	(0.007)	(0.013)	(0.020)	(0.007)
first stage F-statistic	264.091	259.252	255.313	262.980
control mean	4.571	2.000	3.788	6.235
N	6564	6694	6643	6731
Panel B: IV qualitative debt expectations				
qual. debt-to-GDP expectation (in sd)	0.001	-0.205	0.281	0.051
	(0.129)	(0.256)	(0.391)	(0.145)
first stage F-statistic	976.324	971.589	957.047	1004.394
control mean	4.573	2.001	3.792	6.237
N	6560	6690	6639	6727

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, estimated on the baseline sample. The control mean for the price expectations refers to the pre-treatment expectations.

Table A.12: Effect of debt expectations on inflation expectations by trust in ECB

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.012*	0.003	0.010
	(0.007)	(0.015)	(0.018)
debt-to-GDP expectation (in pp) x low trust in ECB	0.020	0.067**	-0.014
	(0.016)	(0.034)	(0.038)
equality with 1-year interaction effect: p-value		0.010**	0.476
first stage F-statistic	19.563	9.968	11.714
control mean	3.700	3.298	3.339
N	3188	1625	1572
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.215*	0.057	0.201
	(0.124)	(0.260)	(0.351)
qual. debt-to-GDP expectation (in sd) x low trust in ECB	0.346	1.344**	-0.354
	(0.300)	(0.590)	(0.907)
equality with 1-year interaction effect: p-value		0.002***	0.497
first stage F-statistic	100.739	48.897	45.766
control mean	3.700	3.298	3.340
N	3187	1625	1571

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, fully interacted with a dummy for (pre-treatment) below-median trust in the ECB. We test whether the interaction term of the revision in 3-year (5-year) inflation expectations equals the interaction term of the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential interaction effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.13: Effect of debt expectations on inflation expectations by policy rate expectation

	(1) Δ 1-year inflation expectation (in pp)	(2) Δ 3-year inflation expectation (in pp)	(3) Δ 5-year inflation expectation (in pp)
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.006	0.002	-0.010
	(0.007)	(0.017)	(0.020)
debt-to-GDP expectation (in pp) x low policy rate expectation	0.009	0.035	0.005
	(0.010)	(0.022)	(0.029)
equality with 1-year interaction effect: p-value		0.177	0.439
first stage F-statistic	54.511	32.620	28.459
control mean	3.767	3.408	3.407
N	6227	3045	3162
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.095	0.039	-0.204
	(0.123)	(0.259)	(0.365)
qual. debt-to-GDP expectation (in sd) x low policy rate expectation	0.291	1.069**	0.120
	(0.247)	(0.498)	(0.759)
equality with 1-year interaction effect: p-value		0.076*	0.497
first stage F-statistic	194.839	102.003	90.009
control mean	3.767	3.408	3.410
N	6224	3044	3159

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented by our treatment, fully interacted with a dummy for below-median policy-rate expectations. We test whether the interaction term of the revision in 3-year (5-year) inflation expectations equals the interaction term of the 1-year revision by using the difference between them as the outcome variable. The p-value indicates whether the treatment induced a significant differential interaction effect on 1-year and 3-year (5-year) inflation expectations. The control mean refers to the pre-treatment expectations.

Table A.14: Effect of debt expectations on crisis scenarios by trust in the ECB

	(1) EA debt crisis: (very) likely	(2) fiscal dominance: (very) likely	(3) Euro bonds: (very) likely
Panel A: IV quantitative debt expectations			
debt-to-GDP expectation (in pp)	0.007***	0.002	0.004***
	(0.001)	(0.001)	(0.001)
debt-to-GDP expectation (in pp) x low trust in ECB	0.002	-0.003	-0.003
	(0.003)	(0.002)	(0.002)
first stage F-statistic	23.316	23.317	23.316
control mean	0.437	0.500	0.411
N	3353	3355	3352
Panel B: IV qualitative debt expectations			
qual. debt-to-GDP expectation (in sd)	0.124***	0.030	0.081***
	(0.024)	(0.025)	(0.024)
qual. debt-to-GDP expectation (in sd) x low trust in ECB	0.029	-0.057	-0.064
	(0.052)	(0.053)	(0.052)
first stage F-statistic	104.862	104.863	104.861
control mean	0.438	0.500	0.412
N	3352	3354	3351

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, fully interacted with a dummy for (pre-treatment) below-median trust in the ECB.

Table A.15: Effect of debt expectations on growth expectations by trust in ECB

	(1) growth rate expectation (in pp)	(2) growth rate uncertainty (in pp)
Panel A: IV quantitative debt expectations		
debt-to-GDP expectation (in pp)	0.004	-0.002
	(0.003)	(0.001)
debt-to-GDP expectation (in pp) x low trust in ECB	-0.012*	0.007***
	(0.007)	(0.002)
first stage F-statistic	20.147	21.969
control mean	0.900	0.662
N	3215	3258
Panel B: IV qualitative debt expectations		
qual. debt-to-GDP expectation (in sd)	0.072	-0.037*
	(0.062)	(0.023)
qual. debt-to-GDP expectation (in sd) x low trust in ECB	-0.263*	0.151***
	(0.142)	(0.050)
first stage F-statistic	93.486	99.782
control mean	0.899	0.663
N	3214	3257

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (9), in which debt expectations are instrumented with our treatment, fully interacted with a dummy for (pre-treatment) below-median trust in the ECB. Growth rate uncertainty is measured by the standard deviation of firms' growth expectations.

Table A.16: Effect of debt announcement on inflation expectations: by trust in the ECB

	(1) 1-year inflation expectation (in pp)	(2) 3-year inflation expectation (in pp)	(3) 5-year inflation expectation (in pp)
post debt-package announcement	-0.073	-0.008	-0.274
	(0.099)	(0.169)	(0.205)
post debt-package announcement x low-trust	-0.020	-0.118	0.233
	(0.137)	(0.270)	(0.300)
controls	yes	yes	yes
pre-announcement mean	2.751	2.815	2.795
N	412	194	220

Notes: Statistical significance denoted as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Robust standard errors are in parentheses. The regression results are based on equation (10) fully interacted with a dummy variable for firms with below-median trust in the ECB, estimated on the sample of firms that answered the survey in the three days before and after the announcement.

B Survey Questionnaire

BOP-F: 2024 Q1

Group 1:
According to calculations of the European Commission, under optimistic conditions, the indebtedness of France, Italy, and Spain will substantially decrease. The European Commission projects that the average debt-to-GDP ratio of these countries will decrease from 123% to 105% over the next five years.

Group 2:
According to calculations of the European Commission, under pessimistic conditions, the indebtedness of France, Italy, and Spain will substantially increase. The European Commission projects that the average debt-to-GDP ratio of these countries will increase from 123% to 140% over the next five years.

Group 3:
The European Commission is worried that the future cost of the pension system and the debt taken on during the COVID-19 pandemic will put the public finances of France, Italy, and Spain under pressure over the next years.

According to calculations of the European Commission, under pessimistic conditions, the indebtedness of France, Italy, and Spain will substantially increase. The European Commission projects that the average debt-to-GDP ratio of these countries will increase from 123% to 140% over the next five years.

Q1: *How will the average debt-to-GDP ratio of France, Italy, and Spain develop over the next five years?*

significantly decrease/decrease/stay the same/increase/greatly increase

Q2: *What do you think, at what level will the average debt-to-GDP ratio of France, Italy, and Spain be in five years? Please provide your best estimate.*

_% of GDP

Q3: *What do you expect the yearly rate of price inflation to be on average in Germany in the next ...*

1. twelve months: _%
2. three/five years (depending on what time horizon they were asked about before): _%

Q4: *How much are you planning to change the following variables over the next twelve months?*

1. The price of your most important product or service:_%
2. Number of employees: _%
3. Investments: _%
4. Average wages: _%

Q5: *How do you think the general level of taxation and spending by the German government will change over the next five years?*

1. The level of taxation will (increase a lot/increase/stay the same/decrease/decrease a lot)
2. The level of spending will (increase a lot/increase/stay the same/decrease/decrease a lot)

Q6: *Over the next five years, what will be the most likely yearly growth rate of the German economy? Also, what do you expect to be the best and worst case over the next five years?*

1. worst case: _%
2. most likely: _%
3. best case: _%

Q7: *How likely do you think the following scenarios are over the next five years?*

1. At least one country in the euro area will have a sovereign debt crisis.
2. The ECB might be unwilling to raise interest rates by the amount needed to bring inflation down to its 2% target because it worries about the fiscal sustainability of some governments in the euro area.
3. Countries in the euro area will take on permanent joint debt, e.g., by issuing so-called Euro-Bonds.

very unlikely/unlikely/neither likely nor unlikely/likely/very likely