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What are banks' actual capital targets?

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Abstract

How do banks set their target capital ratio? How do they adjust to reach it? This paper answers these questions using an original dataset of capital ratio targets directly announced to investors by European banks, materially improving data quality compared to usual estimated implicit target. It provides the following key lessons. First, targets are affected by capital requirements and a procyclical behavior consistent with market pressure. Second, banks do not distinguish between the different types of capital requirements for setting their targets, suggesting weak usability of the regulatory buffers. Third, the distance between actual CET1 ratio and the target is a valuable predictor of future balance-sheet adjustment, suggesting that banks actively drive their capital ratios toward their announced targets, through capital accumulation and portfolio rebalancing. Fourth, this adjustment occurs both above and below targets, but banks below target adjust faster, suggesting stronger pressure. These results provide important lessons for policymakers regarding the design of the prudential framework and the effectiveness of countercyclical policies.

Keywords: Bank regulation, target capital structure, Bank credit.
JEL Codes: E51, E58, G21, G28.

Non-technical Summary

Setting the capital structure is a key step of business management, in particular for banks. Indeed, authorities impose a range of capital requirementa banks must comply with, while maturity transformation and, more generally, asset-liability management are at the heart of their business model. As such, investigating banks' target capital ratios, their determinants and their impact on banks' future behavior is a key area of financial research.

The most important capital ratio is the so-called CET1 ratio, i.e. the ratio of Common Equity Tier 1 (thereafter CET1), the purest form of capital consisting mostly of issued equity and retained earnings, over Risk Weighted Assets (RWA). Indeed, most of European and American capital requirements are expressed in terms of the CET1 ratio. The CET1 ratio is also the main capital ratio used by investors to assess a bank's solvency. As such, the distance between a bank's actual CET1 ratio and its target can be a important predictor of its future balance-sheet adjustment. Indeed, a bank away from its target should act to get closer to its CET1 ratio, by increasing (reducing) its stock of CET1, reducing (expanding) its Total Assets or reducing (increasing) the risk weight density of its assets by turning to safer (riskier) assets.

Target capital structure also affects the effectiveness of monetary and prudential policies. In particular, the Great Financial Crisis made clear we need sufficiently capitalised banks with the ability to absorb losses in crisis time by reducing capital rather than cutting credit supply. Consequently, the Basel III framework has introduced two new types of instruments. First, *usable* buffers, i.e. requirements that banks must meet in normal times but on which they can draw in case of trouble. Second, a time-varying countercyclical capital requirement regulators increase during the expansionary phase of the financial cycle to create a "*prudential space*". They can then relax it during crisis to support credit supply. Nevertheless, this strategy crucially depends on banks' reaction to capital requirements and the macroeconomic environment. Should banks not react to change in capital requirements, or treat usable buffers as hard requirements, this would impede the countercyclical objective of the regulatory framework.

How do banks set their capital ratio targets? Do these targets inform us on banks' future behaviour? I answer those questions using an original dataset of targets that European banks publicly announce as part of their investor communication. To the best of my knowledge, this is the first paper exploiting a dataset of *observed* bank capital targets, rather than *estimating* them through structural models. The dataset covers the period years 2014 to 2020 using quarterly data from 70 banks of the vast majority of euro area countries.

I first investigate target determinants and uncover two critical ones. First, capital requirements have a material but lower than unity impact on target, suggesting that banks adjust but not one-to-one to higher requirements, balancing the risk of breaching requirements with their perceived costs of holding a high capital ratio. Importantly, this impact is not significantly different for the diverse components of the capital requirements stack. This suggests that banks do not distinguish between hard and usable requirements, impeding the countercyclical objective of the regulatory framework. Second, targets are procyclical, as a fall in expected GDP growth tends to increase targets. This is consistent with banks being under pressure during crisis and trying to reassure their investors regarding their solvency.

Then, I show that capital targets contain important information on the future evolution of banks' balance-sheet, exploring the speed and channels of adjustment toward their target. I find that banks are serious about the targets they announce. Their adjustment occurs whatever the initial sign of the distance to target, but it is substantially faster for banks below their target, in line with strong pressure from investors to avoid regulatory breach, which could trigger losses for shareholders. Most of the adjustment occurs through banks' stock of capital. Nevertheless, about one third of the adjustment occurs through the reduction of risk weighted assets. In particular, banks adjust their non-financial corporations (NFC) credit exposures, which typically carry high risk weights. This latter result reinforces concerns of procyclical behaviour during crisis, when banks suffer losses and tend to announce higher targets, as this suggests that they procyclically cut on NFC credit supply to plug the gap and delay loss recognition.

Those results provide key lessons for policymakers regarding the impact of capital requirements on targets, and, in turn, the effectiveness of the regulatory framework. This paper suggests that banks do not consider regulatory buffers to be *usable*, contrary to the intention of the regulatory framework, which was designed for banks to draw on buffers in case of crisis in order to absorb losses rather than cutting credit supply. However, *releasable* buffers could mitigate banks' procyclical behaviour, as a countercyclical reduction in requirements can lower CET1 ratio targets, offsetting banks' tendency to increase targets in crisis. By reducing targets, this would encourage banks to increase credit supply, in particular regarding corporate credit, and recognise losses early. Finally, monitoring banks' announced targets and the distance between their targets and actual CET1 ratios would inform on banks' future behavior, thus informing policymakers when setting monetary or prudential policies.

1 Introduction

Setting the capital structure is a key step of business management, in particular for banks. Indeed, authorities impose a range of capital requirements banks must comply with, while maturity transformation and, more generally, asset-liability management are at the heart of their business models. As such, investigating banks' target capital ratios, their determinants and their impact on banks' future behavior is a key area of financial research.

Indeed, banks' capital ratios are key drivers of their lending policy and, more generally, of their strategic decisions (Berrospide, Edge, et al. (2010)). Most of the capital requirements of the European and American banking regulations are expressed in terns of the CET1 ratio, i.e. the ratio of Common Equity Tier 1, the purest form of capital consisting mostly of issued equity and retained earnings, over Risk Weighted Assets (RWA), which corresponds to a bank's Total Original Exposures (TOE) weighted by their estimated risks. The CET1 ratio is also the main capital ratio used by investors to assess a bank's solvency. As such, the distance between a bank's actual CET1 ratio and its target can be an important predictor of its future balance-sheet adjustment. Indeed, a bank below (above) its target should act to increase (reduce) its CET1 ratio, through three main channels: its stock of CET1, its TOE and its Risk Weight density, the ratio between RWA and TOE. First, it can increase its stock of CET1 by improving its profitability, by issuing equity or by diminishing its capital payouts (dividends and share buybacks). Second, it can reduce the size of its total exposures at constant outstanding CET1. Finally, at constant asset size, it can rebalance its portfolio toward safer assets to reduce risk weight density and thus RWA. On the contrary, a bank above its target can return capital to investors through larger payouts, increase its balance-sheet or rebalance it toward riskier assets.

In turn, (target) capital structure has strong normative implications, affecting the effectiveness of public measures, either directly, for prudential policies (Aiyar, Calomiris, and Wieladek (2016)), or indirectly, for the channelling of monetary policy (Gambacorta and Shin (2018)). In particular, regarding capital requirements, the Great Financial Crisis (GFC) has highlighted the need for banks being sufficiently capitalised to weather a systemic crisis, and hence the use of countercyclical prudential policies to mitigate procyclical bank reactions and credit rationing during crisis. Consequently, the Basel III reform of international financial regulation has introduced two new types of instruments. First, it creates *usable* buffers, i.e. requirements that banks must meet in normal times but which they can on which they can draw in case of trouble.

Second, it has introduced a time-varying countercyclical capital requirement. Regulators can increase it during the expansionary phase of the financial cycle to create a "*prudential space*". They can then relax it during crisis to support credit supply without endangering banks solvency (see, among others, Jiménez, Ongena, Peydró, and Saurina (2017) for empirical evidence of the effectiveness of countercyclical requirements and Dewatripont and Tirole (2012) for theoretical rational). Nevertheless, this strategy crucially depends on banks' reaction to capital requirements and the macroeconomic environment. Should banks not react to change in capital requirements, or treat usable buffers as hard requirements, this would impede the countercyclical objective of the regulatory framework. On the contrary, market pressure could force banks to procyclically target higher capital ratios during crisis, leading to credit rationing.

How do banks set their capital ratio targets? Do those targets inform us on banks' future behaviour? I answer those questions using an original dataset of targets that European banks publicly announce as part of their investor communication. Since the seminal paper of Flannery and Rangan (2008), the literature has relied on partial adjustment models to estimate unobserved banks' capital targets (based on the evolution of actual capital ratios) and, in turn, assess banks' adjustment toward their targets. Exploiting announced targets instead provides several key advantages. First, it allows for directly regressing an observed variable rather than estimating an unobserved one, typically producing much more accurate estimations. Second, it explicitly disentangles shocks affecting only the capital ratio from those affecting the target itself. Third, it breaks the link between the estimations of target determinants and adjustment toward targets, as the latter step does not rely on the estimations produced in the former. As such, estimation errors are not compounded. To the best of my knowledge, this is the first paper exploiting a dataset of *observed* bank capital targets.

I first investigate target determinants. Using partial adjustment models, Berger, DeYoung, Flannery, Lee, and Öztekin (2008) show that American banks hold excess capital on top of regulatory requirements and adjust quickly when poorly capitalised. Using a sample of American and European banks, Gropp and Heider (2010) find that deposit insurance and capital requirements played a secondary role in explaining capital ratios in 1991-2004, which rather converged toward bank-specific, time invariant levels. De Jonghe and Öztekin (2015) and Bakkar, De Jonghe, and Tarazi (2019) find similar results, based on an international sample of banks. This paper contributes to this literature by removing the need for partial adjustment model, using instead observed targets, allowing for a more precise estimate of the drivers of the targets and the speed of adjustment. Moreover, this paper also investigates the differentiated impact of the distinct components of the capital requirements stack introduced by the Basel III reform. This informs in particular on the usability of the regulatory buffers, that are designed to be drawn on by troubled banks at the cost of restriction on capital payout, acting as a countercyclical cushion during crisis. A lower coefficient for those buffers than for stricter requirements would indicate that banks see lower cost in breaching the former, suggesting willingness to dip into them in case of need. To the best of my knowledge, this is the first paper to investigate this issue. I uncover two key target determinants . First, capital requirement have a material but lower than unity impact on target: banks do not adjust one for one to change in capital requirements, suggesting that they balance the risk of breaching requirements with their perceived costs of having a high capital ratio. Importantly, this impact is not significantly different for the diverse components of the capital requirements stack. This suggests that banks do not distinguish between hard and usable requirements, impeding the countercyclical objective of the regulatory framework. Second, targets are procyclical, as a fall in expected GDP growth tends to increase targets. This is consistent with banks being under pressure and trying to reassure investors regarding their solvency in adverse time.

Then, I show that capital targets contain important information on the future evolution of banks' balance-sheet, exploring the speed and channels of adjustment toward targets. At the macroeconomic level, a strand of the literature aggregates individual bank-level distances to (estimated) targets into a single representative time series fed into macroeconometric models. Mésonnier and Stevanovic (2017) find that large shocks to such macroeconomic distance to capital target explain a large part of the variance in credit to business and real activities. At the micro level, De Jonghe and Öztekin (2015) find that banks increase their capital ratios toward target through equity growth rather than balance-sheet reduction. Using monthly German data, Memmel and Raupach (2010) confirm that the most important contribution to adjustment comes from the liability side, despite faster adjustment on the asset side. Bakkar et al. (2019) find that Systemically Important Financial Institutions (SIFI) adjust differently than other banks and Maurin and Toivanen (2012) that banks adjust proportionally more their security holdings than their loans to reach their targets. Removing the need to estimate unobserved targets, I find that banks are serious about the targets they announce. This adjustment occurs whatever the initial sign of the distance to target, but it is substantially faster for banks below their targets, in line with strong pressure from investors to protect the franchise value and avoid costly regulatory breach. Most of the adjustment occurs through their stock of capital, in line with De Jonghe and Öztekin (2015) and Memmel and Raupach (2010). Nevertheless, about one third of the adjustment occurs through asset side management via RWA reduction, mostly thanks to portfolio shift. In particular, banks adjust their Non-Financial Corporate (NFC) credit exposures, which typically carry high risk weights. Moreover, banks below their targets tend to reduce Non-Performing Exposure (NPE) recognition. Those results raise concerns regarding procyclical behaviour during crisis, when banks suffer losses and tend to announce higher targets, as this suggest that they delay loss recognition and procyclically cut on NFC credit supply to plug the gap when firms need credit the most. On the flip side, it suggests that reducing capital requirements in crisis time would have a strong expansionary effect by reducing capital targets.

Those results provide key lessons for policymakers regarding the impact of capital requirements on targets, and, in turn, the effectiveness of the regulatory framework. This paper suggests that banks do not consider regulatory buffers to be *usable*, contrary to the intention of the regulator, as the framework was designed for banks to draw on buffers during a crisis in order to absorb losses rather that cutting credit supply. However, *releasable* buffers could mitigate banks' procyclical behaviour, as a countercyclical reduction in requirements can lower CET1 ratio targets, offset banks tendency to increase targets in crisis time. By reducing targets, this would encourage banks to increase credit supply, in particular corporate credit. Finally, monitoring banks' announced targets and the distance between their targets and actual CET1 ratios would inform on banks' future behaviour, thus informing policymakers when setting monetary or prudential policies.

The rest of the article is organised as follows. Section 2 presents the announced target dataset and compares it with partial adjustment models. Section 3 introduces the econometric specifications and data. Section 4 houses the results and Section 5 concludes.

2 Announced banks target CET1 ratios

2.1 The use of announced targets

In the absence of data on observed banks' target capital ratios, the literature has so far relied on estimated implicit targets, pinned down through partial adjustment models introduced for bank capital by Flannery and Rangan (2008). Such an approach depends on two key assumptions. First, the target is unobserved but relies on a set of observed variables X, and can thus be defined as:

$$CET1^*_{i,t+1} = \theta X_{i,t} \tag{1}$$

Second, banks move sluggishly toward those targets at a constant unobserved speed λ:

$$CET1_{i,t+1} = \lambda CET1^*_{i,t+1} + (1-\lambda)CET1_{i,t} \tag{2}$$

Such behaviour can be rationalised with convex adjustment costs, so that banks are better off with slow adjustment rather than with a single large jump.[1] Then, injecting (1) in (2) and rearranging to get rid of the unobserved components provides:

$$\begin{gathered} CET1_{i,t+1} = \alpha CET1_{i,t} + \beta X_t + u_{i,t}, \\ \lambda = 1-\alpha,\ \theta = \beta/(1-\alpha) \end{gathered} \tag{3}$$

with $\alpha = 1-\lambda$ and $\beta = \theta(1-\alpha)$. Equation 3 can be estimated econometrically and, using $\lambda = 1-\alpha$ and $\theta = \beta/(1-\alpha)$, one can thus recover the unobserved target with: $\widehat{CET1^*}_{i,t+1} = \widehat{\beta}(1-\widehat{\alpha})X_{i,t}$

In a second step, the distance between the actual CET1 ratio and estimated target is injected in a regression model to assess the elasticity of a collection of banking variable to this distance:

$$\Delta Y_{i,t} = \gamma(CET1_{i,t-1} - \widehat{CET1^*}_{i,t-1}) + \delta Z_{i,t-1} + \epsilon_{i,t}, \tag{4}$$

with γ being the coefficient of interest. This partial adjustment approach is intellectually clear and convenient, but also suffers from important drawbacks. First, the dependence on a model of the unobserved target mechanically implies the presence of noise in the estimation of the first step. It is especially true as the CET1 ratio is a rather sluggish variable, meaning that $\widehat{\alpha}$ could be close to 1, making $\widehat{\theta}$ unstable. Second, this approach relies on the assumption of a constant adjustment speed λ.[2]. Third, Equation 3 implicitly assumes that all the impact of X_{t-1}

[1] Fast deleveraging would entail high liquidation costs, while rapid balance-sheet expansion would imply low screening and/or low prices.

[2] Berger et al. (2008) proposes a three-step method to estimate time-variant λ, also used in Bakkar et al. (2019); De Jonghe and Öztekin (2015); Öztekin and Flannery (2012). The first step consists in estimating Equation 3, to recover the estimated $\widehat{k^*}_{i,t}$ target capital ratio and thus the distance to target $\widehat{DEV^*}_{i,t}$. In a second step, they estimate $k_{i,t} - DNK_{i,t} = (\Lambda Z_{i,t})\widehat{DEV^*}_{i,t} + \epsilon_{i,t}$ with $DNK_{i,t}$ the capital ratio that the bank would have reached by keeping its dividend policy constant from the last quarter and issuing no share, and $Z_{i,t}$ a set of variables expected to affect adjustment speed, allowing to get $\lambda_{i,t} = \Lambda Z_{i,t}$. Finally, the first step is re-estimated using this time-varying bank specific speed. This method however crucially depends on a fixed speed adjustment for initialisation that feeds into the estimation of $\lambda_{i,t}$

on $CET1_t$ works through $CET1_t^*$, ruling out the possibility of a direct impact on $CET1_t$ alone. There is no clear rationale behind this assumption. For instance, a bank suffering a one-off loss may not be able to immediately issue equity or liquidate assets, and would thus experience a fall in $CET1_t$ while $CET1_t^*$ is unchanged. Alternatively, this fall in profitability could both affect $CET1_t$ directly and make the bank readjust its target $CET1_t^*$. Those two possibilities make necessary to disentangle both impacts. Fourth, the output of the first step (Equation 3) is transmitted as an input in the second one (Equation 4), where the literature often treats the estimated distance to target as observed and not as the result of a noisy estimate.[3]

In both steps, using explicit, observed targets provides material improvements. In the first one, using observed targets allows for direct regressions, reducing the uncertainty surrounding estimated elasticity and in particular removing the need for a dynamic panel. Second, it also allows for direct estimation of the speed of adjustment, rather than dealing with an indirect evaluation of the unobserved λ. Third, the use of announced targets explicitly disentangles the impact of variables X_{t-1} on $CET1_t^*$ and on $CET1_t$, so that an impact on the latter is not mechanically interpreted as a sign of an impact on the former. Finally, in the second step, the use of an observed variable removes the need to consider the estimation noise around target determinants.

2.2 A new dataset of announced targets

This paper uses an original data set on announced bank CET1 ratio targets. Observations were manually collected on banks' websites and financial communication documentation. Figure 1 presents examples of what banks' announcements of CET1 targets look like. Banks typically announce those targets in slide decks or financial documents as part of their investor communication. Those documents are generally published quarterly, sometimes yearly, in particular for non-listed banks. In compiling those targets, I collect four key elements: (i) the value of the target; (ii) the nature of the target: level of CET1 ratio or distance to capital requirements; (iii) the definition of the CET1 ratio: Fully Loaded (FL) or Phased-In (PI); and (iv) the horizon of the target: some targets apply at all time, others are defined for a precise horizon (2022 for instance) and others are defined over a qualitative horizon ("medium term"). The majority of banks express their targets in absolute level (e.g. 13%) but some express them as a distance to capital requirements (e.g. 200 basis points), most of the time above the so-called Maximum

[3] In this regard, Bakkar et al. (2019) use the bootstrap procedure from Pagan (1984) to tackle this issue

Distributable Amount trigger (thereafter MDA) below which a non-compliant bank is restricted in capital distribution [4] and has to present a *Capital Conservation Plan*, including profit forecasts and intended measures to bridge the gap in capital. If the supervisor rejects the plan, it can require the institution to increase capital over a specified period and consequently lower the MDA[5]. Finally, due to financial reforms following the GFC, the definition of CET1 has been revised toward stricter definition of the eligibility criteria. As such, a part of existing outstanding CET1 is excluded from the *Fully Loaded* new definition of the CET1. To ensure smooth transition, such items are "*grandfathered*" and progressively phased-out from CET1. CET1 ratios using this temporary definition are deemed *Phased in.* Most banks announce CET1 targets in FL terms, as the definition is both more stable and set to become the norm. Nevertheless, some announce PI targets. The collection exercise covered the 117 European banks deemed Significant Institutions (SI) due to their size and complexity and directly supervised by the Single Supervisory Mechanism (SSM), as well as listed European banks, excluding subsidiaries of non-euro area banks and state-owned banks. Both categories generally do not publish CET1 targets due to their reduced interactions with investors. Moreover, the support of their parent institution or of a government distorts their incentives and make them inherently different from standalone banks.

One could express concerns regarding the trustworthiness of those targets. Indeed, managers may be tempted to announce unchallenging targets, so as to limit the risk of missing them, which is detrimental for stock prices and for their career. Nevertheless, two factors mitigate this concern. First, announcing excessively low target comes at a cost, as investors could interpret that as a negative signal on managers' private knowledge of the bank outlook, specifically its internal capital generation capacity. Second, exceeding target capital ratio is not necessarily a good thing for managers. Indeed, contrary to high profitability, high capitalisation is not always good news for investors. They can interpret that as a sign of suboptimal capital allocation and call for capital distribution or larger asset expansion. Mathematically speaking, the optimal CET1 ratio has an interior solution, at least in the eyes of investors. As such, overshooting a CET1 target is not necessarily desirable, as it could signal an inefficient capital structure. In practice, many banks announcing targets well below their actual CET1 ratio explicitly commit to return capital to shareholders. Overall, bank managers have no interest in systematically

[4] Article 141 of CRD IV

[5] Article 142 of CRD IV

announcing low targets. This is confirmed by the results of this paper, which shows that banks tend to converge toward their targets, also in case that when they are originally above them.

In total the collected dataset is an unbalanced panel of 1171 observations from 70 banks. It covers banks from all countries in the euro area except Lithuania, Latvia and Slovakia. The sample period spans from Q1 2014 to Q4 2020. The dataset covers a large and increasing share of the European banking system: as more and more banks announce target CET1 ratios, the sample captures about 66% of Total asset of euro area banks since 2018, compared to about 40% at the beginning of the sample period.

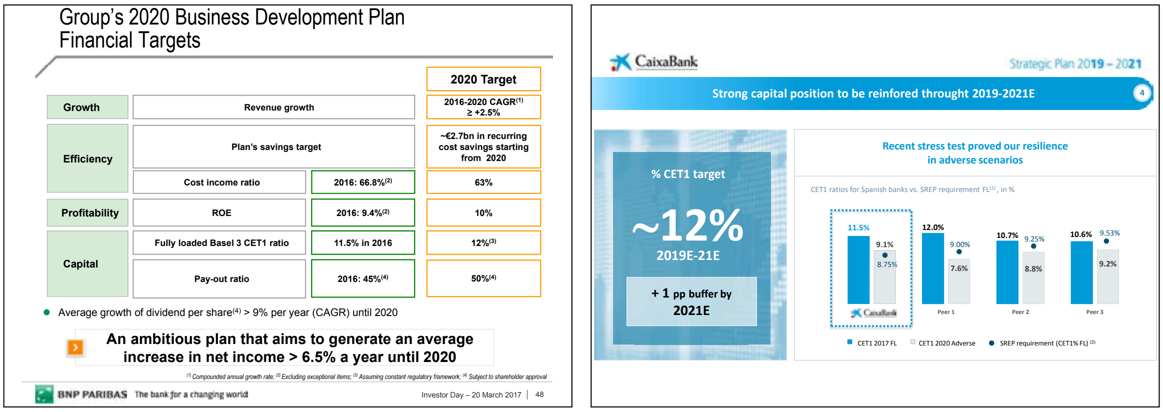
Figure 2 reports the time series of announced CET1 targets. Banks have progressively increased their targets until mid-2017, as the new regulatory framework and its implementation process were clarified and the European economy gradually recovered from the European sovereign debt crisis. They have since then mostly evolved in a stable interval, with the interquartile range staying in the 12.5%-15% interval. Nevertheless, in Q1 2020, European and national authorities have adopted a series of capital relief measures in face of the Covid-19 pandemic outbreak, leading to a decrease in CET1 requirements.[6] This has resulted in some downward adjustment in banks CET1 targets, but undershooting the fall in requirements. Nevertheless, the relative stability of the distribution masks bank-level variations: banks announcing targets in level have on average updated their targets every six quarters since Q2 2017.

As one could expect for the long run, the distribution of the distances between actual CET1 ratio and the targets is centered around zero, as presented in Figure 3. Since the COVID-19 pandemic, the distribution of distance to target has shifted upward, reflecting a rather muted target adjustment to a series of prudential measures supporting CET1 ratios (such as the delaying of IRFS 9 implementation or the front loading of a reform of the so-called SME Supporting Factor reducing risk weights on some loans to SMEs)[7] .

[6]See in particular https://www.bankingsupervision.europa.eu/press/pr/date/2020/html/ssm.pr200312~43351ac3ac.en.html

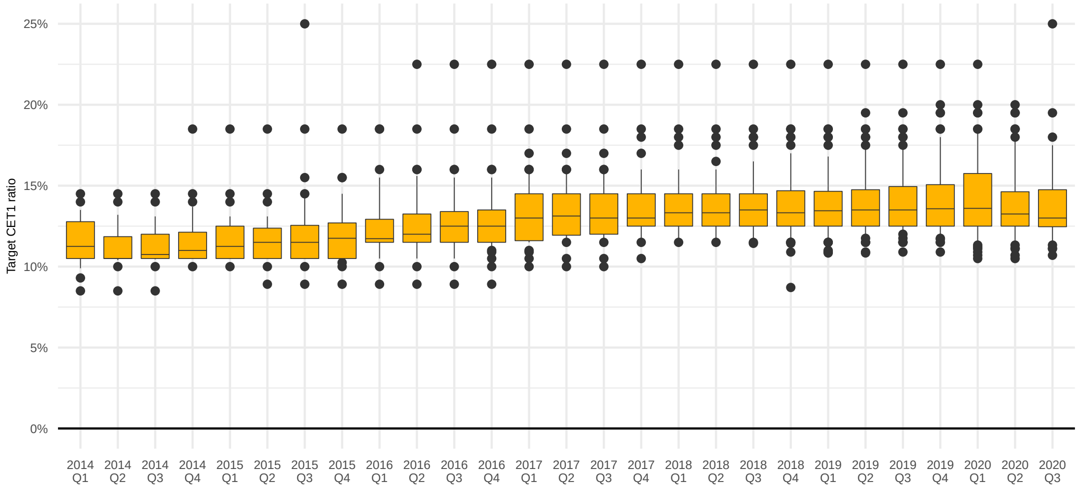
[7]For more details on the so-called "Banking Package", see https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_757

Figure 1: Examples of announced target CET1 ratios



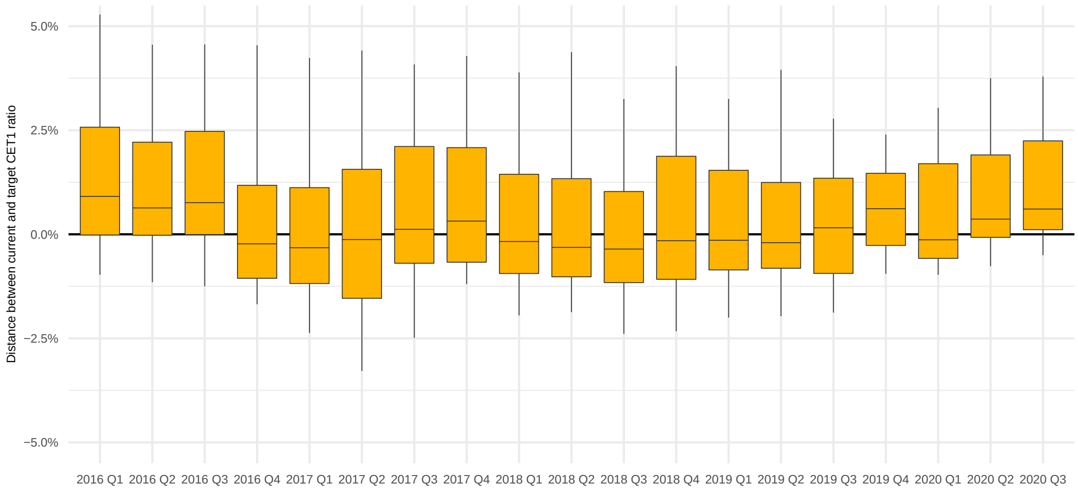
Source: Banks websites

Figure 2: Banks' target CET1 ratios - %



Source: Banks websites, author's calculations

Figure 3: Distance of banks CET1 ratios to targets



Source: Banks websites, author's calculations

3 Econometric settings and data

The use of announced targets allows for a direct panel regression of the CET1 ratio targets on a set of banking characteristics and macrofinancial variables:

$$Target_{i,t+1} = \zeta X_{i,t} + \kappa_i + \eta_{i,t+1}, \tag{5}$$

The first key expected driver of banks' CET1 ratio targets is the stack of capital requirements they must comply with. The European regulatory framework distinguishes between two types of capital requirements which sum define the MDA trigger. First, the minimum requirements or *Total SREP Capital Requirement* (TSCR) that banks must meet at all time.[8] Failure to meet the TSCR triggers material supervisory intervention, potentially costly to shareholders and managers, with measures ranging from from forced asset disposal to the resolution of the bank. The TSCR is composed of the system-wide Pillar 1 (P1, 8% or RWA) and the bank-specific Pillar 2 Requirement (P2R), revised annually. The P1 and, since 2020 as part of the banking package adopted in reaction to the Covid-19 pandemic, the P2R can be met with a mix of CET1 and less pure forms of capital, the so-called Additional Tier 1 (AT1) and Tier 2 (T2).[9] A failure to have enough AT1 or T2 creates a shortfall that banks must plug with additional CET1. Second,

[8]SREP stands for *Supervisory Review and Evaluation Process*, the review of banks risk and core capital requirements conducted annually by European supervisors.

[9]Banks must fulfil both P1 and P2R with a minimum of 56.25% of CET1 and can meet the rest with AT1 and T2, with at most 25% of T2. As such, the 8% Pillar 1 can be met with 4.5% CET1, 1.5% AT1 and 2% T2.

on top of the TSCR lie the so-called *combined buffer requirements* (CBR),[10] fully composed of CET1, that are meant to be *usable*, meaning that banks under stress can dip into the CBR: this activates the MDA, constraining dividends, but does not constitute a regulatory breach *stricto sensus.* The TSCR and the CBR together constitute the *Overall Capital Requirements* (OCR). On top of the OCR, European supervisors also set a capital demand, the so-called *Pillar 2 Guidance*, "which indicates to banks the adequate level of capital to be maintained to provide a sufficient buffer to withstand stressed situations. Unlike the P2R, the P2G is not legally binding."[11] The expected impact of capital requirements on targets is positive but below one. Indeed, in a trade-off approach of the capital structure, banks may balance the cost of higher risk of breach due to low CET1 ratio with the cost of high CET1 ratio.[12] Consequently, banks are expected to operate with a management buffer above requirements, i.e. extra CET1, and to absorb part of hikes in requirement by reducing this buffer. As changes in the CBR are implemented with a phase-in period, meaning that future requirements are known well before their enter into place,[13] I use *announced* capital requirements rather than *implemented* ones, in line with the forward-looking nature of targets in banks' strategic planning. The baseline regression includes three types of requirements: (i) the pure CET1 OCR,[14] (ii) the AT1 and T2 shortfalls and (iii) the P2G. This informs on the perceived stringency of those different requirements: one could expect the coefficient to increase with the cost of breach. Indeed, while banks must cover the first item with CET1, they may plan future issuance of AT1 and T2 to plug the shortfall, making the second item less important for setting forward-looking CET1 ratio target. Finally, the P2G should have the lowest coefficient, as its breach triggers no direct supervisory action. If not, this suggests that managers treat the P2G as a hard requirement, contrary to the objective of this tool. In a robustness exercise, I further decompose the pure CET1 OCR into pure CET1 TSCR and the CBR, as breaching the second only activates the MDA, constraining capital payout and forcing banks to issue a recovery plan, while breaching

[10]The CBR consist in (i) a Conservation Buffer (CCoB) of 2.5%, (ii) a Countercyclical Capital Buffer (CCyB) whose bank-specific rate is an average of national rates weighted by relevant exposures, (iii) a Systemic Risk Buffer (SRB) imposed by the domestic authority to all or a subset of banks and (iv) the Global and Other Systemic Institution Buffers (G-SII and O-SII) that depend on the size and materiality of the bank for the financial system

[11]See https://www.bankingsupervision.europa.eu/banking/srep/html/p2r.en.html

[12]Whether or not capital is actually costly has produced a vast literature and is beyond the scope of this paper. The simple fact that many investors and managers perceive capital to be costly rationalises this trade-off approach.

[13]For instance, the O-SII and G-SII buffers announced in late 2015 and the CCoB were associated with a phase-in period from 2016 to 2019. Increase in the CCyB are typically associated with a one-year delay.

[14]the 4.5% P1, the CET1 part of the P2R (100% before 2020, 56.25% since then) and the CBR

the TSCR additionally triggers direct supervisory intervention and can ultimately lead to the withdrawal of authorisation or even to the resolution of the bank. Similar coefficients for those two components would suggest that banks do not value them differently. In particular, this would imply that they do not consider the CBR more usable than the TSCR, while this feature is a key component of the regulatory framework.

The list of other explanatory variables includes a vast range of potential drivers of banks' CET1 ratio targets. The log of Total Assets captures banks' size, as larger banks generally hold lower CET1 ratios, which can be rationalised by a too-big-too-fail phenomenon. The Return on Asset (RoA) accounts for banks' profitability. Asset quality is captured through the risk weight density (i.e. Risk Weighted Assets divided by Total Original Exposures) and the ratios of impaired assets and provision to total assets. The impact of profitability on targets is *a priori* unclear: more profitable banks and those with better assets have higher internal capital generation capacity and as such need less outstanding capital, but shareholders may want to protect their high franchise value with larger capital buffers (Marcus (1984)). Banks' business models are captured with the credit ratio, defined as the share of total credit exposures in the total assets, and the off-balance-sheet exposure ratio over total assets. The impact of deposits is captured with the cost of deposits and the deposit ratio. The 5-year ahead consensus forecast of domestic GDP growth rate from the Survey of Professional Forecasters accounts for expectations regarding future the macrofinancial environment and business opportunities. An adverse macrofinancial environment may increase investors' risk aversion; to avoid a detrimental flight-to-quality, banks may then announce larger CET1 ratio targets in adverse times to commit to high solvency and reassure investors. On the contrary, during good times, banks may underestimate risk (Fonseca and González (2010)). I also include the 5-year ahead consensus forecast of domestic inflation. The impacts of conventional and unconventional monetary policy are captured respectively by the 3-month Euribor rate and the ratio of Targeted Long Term Refinancing Operations (TLTRO) uptake in total liabilities. Tables A1 and A2 in the Appendix present the summary statistics and correlation matrix of the variables in the baseline model. In robustness checks, the 5-year ahead domestic GDP growth rate forecast is replaced with the euro area GDP growth forecast (capturing the international nature of many banks in the sample).

In a second step, I assess the speed of adjustment, i.e. the change in the distance to target:

$$Gap_{i,t} = \tau Gap_{i,t-1} + \phi Gap_{i,t-1} Z_{i,t-1} + u_{i,t}, \quad (6)$$

With $Gap_{i,t} = CET1_{i,t} - Target_{i,t}$ the deviation from target and $Z_{i,t}$ a set of variables affecting the speed of adjustment, making it time and bank-dependent with $\lambda_{i,t} = \rho + \phi Z_{i,t-1}$. In line with the literature relying on partial adjustment models, I conduct a pooled regression with interaction terms only, excluding the stand alone impact of $Z_{i,t-1}$ and the bank fixed-effects ι_i.[15]. I include those parameters in robustness checks.

Finally, I investigate the informational content of targets on future banks' behaviour by regressing the change in a set of balance-sheet and financial account variables on the distance to target:

$$\Delta Y_{i,t} = \chi Gap_{i,t-1} + \psi Z_{i,t-1} + \iota_i + \epsilon_{i,t}, \tag{7}$$

With $\Delta Y_{i,t}$ being the quarterly change in a vast range of bank-level variables: CET1 ratio, CET1 outstanding (in euro), Risk Weight density, interest rates to NFC and Households (in quarterly difference), Risk Weighted Assets (total and credit only), Total Original Exposures, loans and debt securities exposures to Non-Financial Corporations, loans to households, exposure to General Government (in quarterly growth).

To estimate the speed of adjustment and the elasticity of balance-sheet adjustment to the distance to target, I control at the bank level for Return on Asset, impairment ratio, loan to deposit ratio, NIM, Total Asset (in log) and the ratio of TLTRO loans in total liabilities. Macroeconomic controls, aiming at capturing overall credit demand and credit risk, include domestic quarterly growth in GDP and HICP, the domestic unemployment rate, the 10-year domestic sovereign rate and the 3-month Euribor rate. I also include a set of post-Covid country fixed effects to capture the emergency measures adopted to support banks and credit supply, such as credit guarantee schemes and loan moratoria. In both steps, I also conduct an extension exercise where I distinguish between positive and negative distance to target, in order to investigate potential asymmetry, suggesting more intense pressure for adjustment on one side of the target.

Bank data come from European banking supervision reports, namely the COREP and FINREP. The definitions of the indicators used in the regressions from those templates are produced by the European Banking Authority.[16] Macroeconomic data come from the Statistical Data Warehouse of the ECB. Explanatory variables are lagged by one quarter. Banks data are winsorised at the 2.5% and 97.5% level.

[15] An intercept (pooled or at bank-level) would imply a trend in distance to target and so ultimately a trend in CET1 ratio and/or target. For further details, see Berger et al. (2008)

[16] https://eba.europa.eu/eba-updates-methodological-guidance-on-risk-indicators-and-analysis-tools

4 Results

4.1 Determinants of CET1 targets

4.1.1 Announced targets

Table 1 presents the estimation of Equation 5. The main regression is presented in Column (1). It provides two key lessons.

First, an increase in capital requirements has a statistically significant and economically material impact on targets. Nevertheless, this impact is less that unity. This suggests that banks reduce their target excess capital when requirements increase. This is consistent with a trade-off theory of bank capital, in which managers balance the expected cost of regulatory breach due to thinner excess capital against the perceived cost of holding a large capital ratio. Consequently, they hold a management buffer over requirements that they progressively reduce to smooth the impact of requirement hikes: a 1pp increase in requirements drives the target up by ~ 0.3pp, implying a reduction in management buffer by $\sim 0.7pp$. A key finding is the similar coefficients for OCR and P2G. We could expect the latter to have a smaller impact, as it is not a requirement *stricto sensus* and as banks do not face immediate consequences in case of breach, while breaching the OCR triggers the MDA, limiting banks' ability to distribute dividends. Uncovering very similar coefficients suggests that banks actually do not consider this difference when setting their targets, implying that they treat the P2G as a requirement and not as a usable buffer they can draw on.

Second, banks tend to adjust their capital targets procyclically, as captured by the negative impact of GDP growth forecast, in line with results from partial adjustment models in Fonseca and González (2010) and Francis and Osborne (2012). In adverse economic environment, investors tend to become more risk averse and fly to quality, while uncertainty increases. To reassure investors and show they can cover unexpected losses, banks react by committing to higher CET1 targets. Such behaviour has strong economic implications: to reach those higher targets, banks can typically reduce their credit supply when it is the most necessary to help firms and households shoulder an economic crisis. As such, those results confirm banks' procyclical behaviour in crisis.

Together, those two results suggest that countercyclical capital requirements could be useful tools to mitigate financial crisis. By raising requirements in good times to push CET1 ratios

Table 1: Determinants of target CET1 ratio

	Dependent variable:							
	Target							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OCR strict	0.292***	0.476***	0.487***	0.136*	0.292***	0.320***		
	(0.085)	(0.115)	(0.182)	(0.072)	(0.087)	(0.089)		
TSCR strict							0.069	0.523***
							(0.132)	(0.139)
CBR							0.728***	0.375*
							(0.138)	(0.219)
AT1 and T2 shortfall	0.059	0.633***	0.339	0.028	0.029	0.048	0.065	0.623***
	(0.127)	(0.172)	(0.223)	(0.095)	(0.126)	(0.127)	(0.129)	(0.174)
P2G	0.165*	0.430***	0.453	0.129*	0.164*	0.158*	0.149*	0.429***
	(0.093)	(0.140)	(0.315)	(0.076)	(0.095)	(0.088)	(0.087)	(0.139)
Total Assets, log	−0.019*	0.002	−0.002	−0.005	−0.021*	−0.013	−0.019*	0.002
	(0.011)	(0.002)	(0.003)	(0.007)	(0.011)	(0.010)	(0.010)	(0.003)
Return on Asset	0.359	0.038	0.419	0.208	0.324	0.109	0.373	0.040
	(0.340)	(0.429)	(0.502)	(0.311)	(0.354)	(0.328)	(0.334)	(0.424)
Off Balance-sheet	0.007	−0.018	−0.016	0.010	0.009	0.013	0.008	−0.020
	(0.024)	(0.019)	(0.021)	(0.031)	(0.025)	(0.024)	(0.028)	(0.019)
Credit ratio	0.033*	0.070***	0.018	0.048***	0.029	0.030*	0.035*	0.072***
	(0.020)	(0.025)	(0.029)	(0.014)	(0.019)	(0.018)	(0.020)	(0.025)
RW	−0.028	−0.007	−0.001	−0.010	−0.031*	−0.011	−0.031*	−0.004
	(0.018)	(0.017)	(0.026)	(0.017)	(0.018)	(0.016)	(0.018)	(0.019)
Impairment ratio	−0.098**	−0.110**	−0.114**	−0.096***	−0.105**	−0.093**	−0.096**	−0.107**
	(0.045)	(0.045)	(0.055)	(0.035)	(0.046)	(0.042)	(0.046)	(0.045)
Provisions	0.261	−0.785*	−0.568	−0.047	0.153	0.299	0.244	−0.813*
	(0.334)	(0.469)	(0.534)	(0.323)	(0.322)	(0.370)	(0.327)	(0.464)
Deposit ratio	−0.015	−0.021	−0.001	−0.014	−0.017	−0.020	−0.021	−0.020
	(0.015)	(0.015)	(0.016)	(0.012)	(0.016)	(0.016)	(0.016)	(0.016)
Cost of deposits	−2.041	−4.801***	−1.967	−2.435**	−2.038	−1.820	−1.452	−5.029***
	(1.387)	(1.391)	(1.537)	(0.967)	(1.364)	(1.265)	(1.206)	(1.292)
TLTRO	−0.011	−0.044***	−0.017	−0.034***	−0.012	−0.004	−0.008	−0.046***
	(0.011)	(0.015)	(0.014)	(0.011)	(0.011)	(0.011)	(0.011)	(0.015)
GDP growth for. 5y, dom.	−0.605**	−0.910***	−0.999**	−0.772***		−0.642**	−0.435	−0.960***
	(0.283)	(0.239)	(0.413)	(0.199)		(0.270)	(0.279)	(0.261)
GDP growth for. 5y, EA					−0.854**			
					(0.390)			
CPI growth for. 5y, dom.	0.001	0.004	0.008	0.003	0.001	0.002	−0.0002	0.004
	(0.003)	(0.005)	(0.006)	(0.004)	(0.004)	(0.003)	(0.003)	(0.005)
EURIBOR	−0.018***	−0.012	0.017	−0.026***	−0.017***	−0.015***	−0.011	−0.013
	(0.006)	(0.009)	(0.020)	(0.006)	(0.006)	(0.006)	(0.007)	(0.010)
10-year sov. yield	0.259	0.120	0.330*	0.305**	0.346*	0.293**	0.291	0.105
	(0.170)	(0.203)	(0.196)	(0.122)	(0.185)	(0.149)	(0.182)	(0.210)
CET1 ratio						0.173*		
						(0.093)		
Constant		0.017	0.138					−0.002
		(0.067)	(0.091)					(0.085)
Bank FE	Yes	No	No	Yes	Yes	Yes	Yes	No
Nb banks	61	61	55	61	61	61	61	61
Observations	950	950	115	810	950	950	950	950
R^2	0.282	0.462	0.329	0.364	0.232	0.309	0.317	0.463
Adjusted R^2	0.218	0.452	0.211	0.297	0.165	0.248	0.256	0.452

Notes: *p<0.1; **p<0.05; ***p<0.01. Column (1) presents the results of the baseline panel regression with bank fixed effects while column (2) reports the results of the pooled regression and column (3) the regression on new targets only. Column (4) repeats the regression of Column (1) with the sample period ending in Q4 2019, while Column (5) repeats it with euro area GDP growth forecast instead of domestic GDP. Column (6) adds the lagged CET1 ratio as explanatory variable. Column (7) decomposes the OCR CET into Total SREP Capital Requirements (Pillar 1 and Pillar 2 Requirements) and Combined Buffer Requirements. Column (8) repeats this regression but on pooled regression. Explanatory variables include announced the CET1 Overall Capital Requirement, the AT1 and T2 shortfalls, the P2G, the log of Total asset, the Return on Asset, the ratio of off-balance-sheet exposures to total assets, the ratio of credit exposures to total assets, the the Risk Weight density,the impairment ratio, the provision ratio, the deposit ratio, the cost of deposits, the TLTRO ratio over total assets, the 5-year ahead GDP growth and inflation forecast of the Survey of Professional Forecasters (domestic or euro area GDP), the 3-month EURIBOR rate and the 10-year sovereign yield. All explanatory variables are lagged by one quarter. Errors are clustered at the bank level.

higher, authorities can lower them when a crisis hits, mitigating banks' procyclical behaviour and thus alleviating its economic cost.

The regressions also provide some complementary lessons. Higher impairment ratio is associated with lower targets, suggesting that banks holding troubled asset acknowledge their difficulty in building up their capital ratio: a 1pp increase in impairment ratio translates into around a 0.1pp decrease in target CET1 ratio. A higher policy rate reduces the target CET1 ratio, in line with Marcus (1983) finding that an increase in interest rate is associated with lower capital ratios. Finally, more credit-oriented banks tend to target higher CET1 ratios.

I run a series of robustness check. In column (2) I run the regression at the pooled level, removing banks' fixed effects. Indeed, as most of the variables in the regression model are sluggish, a large part of the sample variance come from the cross-section rather than the time series. The individual fixed effects absorb this variance, potentially distorting the estimated elasticities. In Column (3), I focus on *new targets*, i.e. targets that differ from the previous quarter, meaning that the bank reassessed its target. Due to the small size of the sample, this regression is also run at the pooled level. For both regressions, the results are qualitatively unchanged. Nevertheless, the impact of CET1 requirements on targets is materially higher. A first explanation is that, as mentioned above, banks adjust their targets in a lumpy fashion and not every quarter. When announcing new targets, they materially adjust to their capital requirements, while using the whole series of announced targets may bias downward the estimated elasticity. Using announced targets, I can explicitly quantify and control by this bias by using a set of new targets only. A second explanation comes from the inclusion of banks' fixed effects in the baseline regressions. Bakkar et al. (2019); De Jonghe and Öztekin (2015); Gropp and Heider (2010) argue that time-invariant banks fixed effects are the primary determinants of their target CET1 ratio, implying that the inclusion of those fixed effects is key for unbiased target estimates. Indeed, a regression on bank-fixed effects alone explains 78% of announced targets, close to the 85% found by De Jonghe and Öztekin (2015) with partial adjustment model on an international sample of banks. Adding the other explanatory variables only increases the R^2 to 84%, suggesting that they play only a marginal role in explaining banks' targets. Nevertheless, the opposite exercise, including all regressors but banks' fixed effects, returns an R^2 of 56%, suggesting a substantial explanatory power. Several of the bank-level explanatory variables evolve sluggishly, meaning that most of their variance is cross-sectional and thus filtered out by banks' fixed effects. As such, the inclusion of bank-level fixed effect is necessary to appropriately fit banks' targets, but may lead to inaccurate elasticities for time-variant but sluggish explanatory variables. Moreover, those papers are based on pre-Basel III bank data, when capital requirements were materially lower and thus constrained much less banks' targets, which could revolve more easily toward bank specific time invariant targets.

Column (4) reproduces the same regressions than Column (1) but ending the sample period in Q4 2019, thus removing the COVID-19 pandemic, characterised by a huge economic shock and uncertainty triggering important fiscal, monetary and prudential measures that may affect the regression results. All results are qualitatively unchanged. In column (5) I replace domestic with euro are GDP growth forecast. This allows for the inclusion of banks whose domestic economies are not covered by the SPF, and accounts for the international reach of many banks in the sample, which often have a material share of their activities and income abroad. This does not affect the results. In column (6) I add the lagged CET1 ratio as an additional explanatory variable.[17] This creates an endogeneity issue, as targets move sluggishly and affect the actual CET1 ratio. Nevertheless, this provides a useful robustness check to determine if banks announce their targets taking into account their current CET1 ratio to limit the necessary adjustment. As expected, a higher ratio is associated with a higher target buffer, leaving the other results qualitatively unchanged.

In columns (7) and (8) I disentangle the pure CET1 OCR into the pure TSCR and the CBR. One should expect a larger coefficient for the TSCR since the cost of breach is largely higher, encouraging banks to operate with a larger management buffer on top of it. This hypothesis is not supported by the data. In Column (7), the CBR has a significantly higher impact than the P2G, while the AT1 and T2 shortfalls and, surprisingly, the TSCR have no significant impact. Using a pooled regression in Column (8) returns more interpretable coefficients but confirms the absence of strict pecking order. All coefficients are around 0.5 and the difference is not statistically significant. This suggests that banks do not consider the CBR as less stringent than the minimum requirements, implying that they consider the cap on capital distribution the breach of the CBR triggers to be very costly. This result has important positive and normative implications. On the positive side, it implies that banks are committed to service regular dividend to their investors and do not want to send a negative signal by breaching regulatory requirements, even those designed to be used in case of need. On the normative side,

[17]The definition of the CET1 ratio used here, Phased-in or Fully-loaded is in line with the one used by the bank to define its target.

this suggests that the usability of those buffers is mitigated by banks' unwillingness to draw on them, impeding their countercyclical purpose. Banks suffering losses would prefer to cut back on lending to reduce their RWA and increase their CET1 ratio rather than absorbing their losses by dipping into the CBR, which would activate dividend restriction. This is consistent with banks' communication at the outbreak of the COVID-19 pandemic, when they largely communicated on their ability and willingness to navigate through the crisis with ample excess capital over the MDA trigger. Consequently, this calls in favor of designing large countercyclical buffers that regulatory authorities can release during times of stress, so that banks could use the freed capital to absorb losses without triggering restriction on dividend distribution.

4.1.2 Comparison with partial adjustment model

One of the main contributions of this paper is the use of announced targets instead of estimated targets recovered from partial adjustment models. To inform on the usefulness of this contribution, I run the partial adjustment model of Equation 3 using the same set of explanatory variables that for Table 1. As standard for dynamic panel data, and partial adjustment models in particular, I use a General Method of Moments (GMM) setting, relying on the standard system GMM proposed by Blundell and Bond (1998). The confidence intervals for long term coefficients are built with bootstrap, which are convenient since long term coefficients estimates in partial adjustment model are a non-linear combination of the estimated short-term coefficients ($\theta = \beta/(1-\alpha)$ in Equation 3). For the sake of comparison, I produce confidence intervals with bootstrap too for regressions with announced targets. For partial adjustment models, I use recursive wild bootstraps, appropriate for dynamic panel data (see Gonçalves and Kaffo (2015)). For announced targets, I use standard wild bootstrap, as the model is not dynamic and thus recursive bootstrap pointless.[18] I run the partial adjustment model on two datasets: first on the same set of banks present in the dataset of announced targets, for the sake of comparability; second on all banks consolidated at the euro area level, to capture the fact that partial adjustment models do not require announced targets and can thus be applied on a larger set of banks.

Figure 4 compares the confidence intervals obtained with the three regressions: the one with announced targets and the two with partial adjustment model. The direct regression of announced targets clearly produces substantially smaller confidence intervals than the two partial adjustment regressions. For capital requirements, it is four times smaller than with the

[18] For both models I use 100 draws.

partial adjustment model. This produces more precise estimated elasticities and make some variables statistically significant. Such difference in accuracy does not come as a surprise. The long term coefficients of partial adjustment models are determined as $\hat{\theta} = \hat{\beta}/(1 - \hat{\alpha})$. With α being the autocorrelation coefficient typically lower but close to unity, $\hat{\theta}$ is obtained with a division by a term close to zero, resulting in unstable estimates and often implausibly large long-term coefficients.

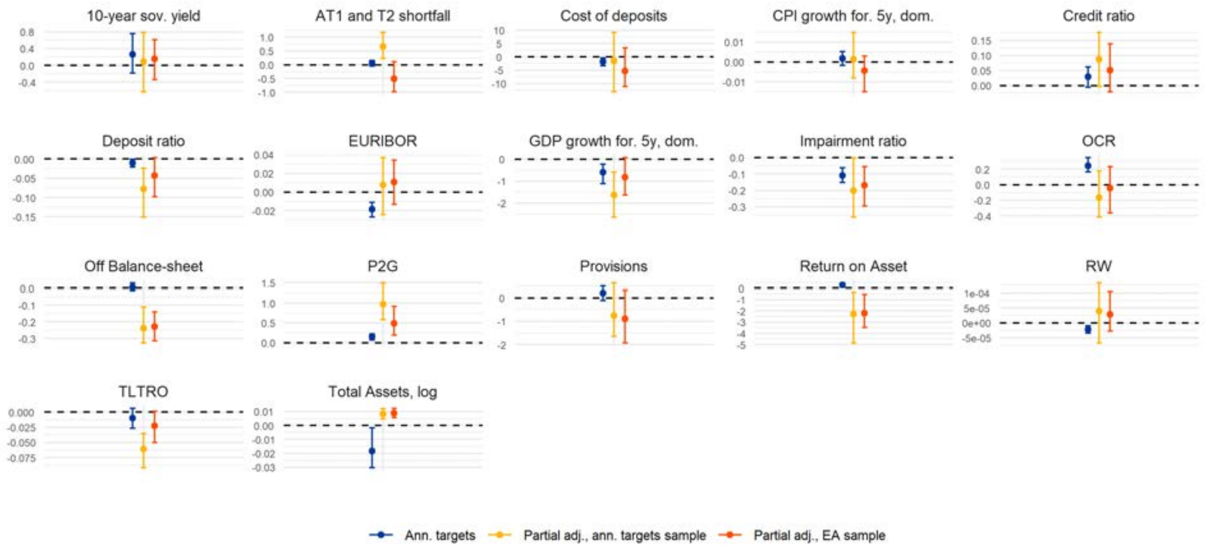
Another issue should also be considered when comparing both models. It is well known that the GMM for short dynamic panel data should be used with caution, due to the risk of instrument proliferation and overidentification (see Roodman (2009b)), their complexity and the diversity of possible specifications, relying on different and easily breached assumptions (see Roodman (2009a)). The direct regression panel allowed by the use of announced target considerably reduces this model uncertainty. As such, using announced targets allows for lower model risk and, for a given model, produces thinner confidence intervals than partial adjustment models.

Figure 5 compares the distance between actual announced targets and the fitted values of the three regressions. It appears that partial adjustment models produce distributions well centered around zero, meaning that their fitted values do not systematically deviate from announced targets. Nevertheless, their distribution of distance to announced target is quite large, with an interquartile range of more than 2.5pp, a material value for targets mostly ranging between 12.5 and 15%, and a few very large misestimates. In comparison, the regressions on announced target produces an interquartile range about four times smaller. This confirms that partial adjustment models produce noisy estimates of banks' targets and should be considered a second-best approach when announced targets are not available (e.g. for non-listed banks).

4.2 Speed of adjustment

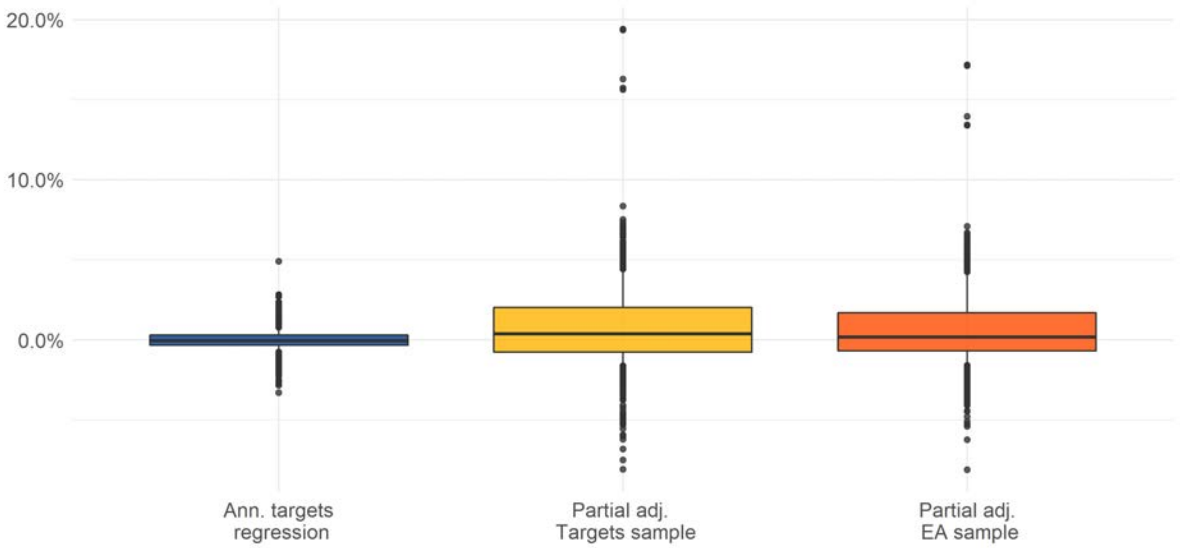
In a second step, I estimate Equation 6 to recover the adjustment speed. In a first exercise, I conduct a pooled regression including no Z variable. As such, the estimated τ is simply the autocorrelation parameter of the *Gap*. Next, I include a vector Z of explanatory variables to assess how the speed of adjustment varies with banks characteristics. Following Bakkar et al. (2019); De Jonghe and Öztekin (2015), I standardise the variables of the Z vector to facilitate interpretation. As such, τ is the average speed of adjustment and ψ the average impact of a 1pp deviation from target. In both specifications, I run an extended version splitting the $Gap_{i,t-1}$

Figure 4: Comparison of long term elasticities - announced targets and partial adjustment models



Note: Confidence intervals for panel regression on announced targets (blue) and partial adjustment models on banks announcing targets (yellow) and ultimate parent banks in the euro area (orange). The partial adjustment models are estimated with difference GMM. Confidence intervals are built with wild bootstrap for the OLS panel regression and recurvise wild bootstrap for the GMM partial adjustment models.

Figure 5: Comparison of fit quality - announced targets and partial adjustment models



Note: Distance between fitted value and actual target from regression on announced targets (blue) and partial adjustment models on banks announcing targets (yellow) and ultimate parent banks in the euro area (orange). The partial adjustment models are estimated with difference GMM.

variable into $Gap^{+}_{i,t-1}$ and $Gap^{-}_{i,t-1}$, to determine whether the adjustment speed depends on the sign of the deviation. For all those regressions, I exclude the observations corresponding to a change in target, in order to estimate the adjustment speed toward a constant target from one period to the other. Including new targets does not qualitatively affect the results.

Table 2 presents the results of equation 6. Banks take their targets seriously. Indeed, the coefficient on lagged target distance to target is significantly within the $(0, 1)$ interval, implying that banks do reduce their distance to target over time. The autocorrelation parameter is around 95%, implying a λ around 5%. This is somewhat slower than the existing literature, which typically finds adjustment speed between 8 and 20%.[19] Column (2) presents a key extension disentangling the impact of positive and negative distances to target. The result is twofold. First, banks adjust from both sides of the targets, with the autocorrelation coefficients again significantly in the $(0, 1)$ interval at the 1% level. This confirms that banks do not treat target announcement as a minimum threshold to set as low as possible to be sure to overpass it. On the contrary, when above target, they act to reduce their CET1 ratio. Second, banks below their targets adjust significantly faster than those above their target, with an adjustment speed of $\sim 17\%$ versus $\sim 2\%$. The difference between both speeds of adjustment is significant at the 1% level. Rolling over both coefficients, this means that after one year (two years) banks below their targets have closed more than 50% (75%) of the distance against 8% (15%) for banks above their targets. This suggests that the former are under greater pressure to adapt. This is consistent with investors being primarily concerned about the solvency of a bank, and less about high capitalisation suggesting a suboptimal use of funds. This also implies that many European banks have been able to retain large capital ratios despite commitment to return capital to shareholders in a context of low profitability.

From a policy perspective, this result sheds important light on the impact of countercyclical capital requirement adjustment in crisis time. Previous results imply that a 1pp decrease in requirement translate in a 0.3pp drop in target. For banks below their target in crisis time (a likely case due to loss absorption on the one hand and procyclical target adjustment on the other) this would result in a 15bps expansionary fall in CET1 ratio over one year. However, this fall would only equal a muted 2.4bps $(0.3 * 8\%)$ for banks above target, consistent with the idea that those banks have slack capital and thus do not materially react to change in requirements.

As robustness checks, I then interact lagged distance to target with a set of banks' charac-

[19] This comparison converts into quarterly speed λ estimated on yearly data for a large part of the literature.

teristics and macrofinancial variables, to assess how they affect the adjustment speed. For the sake of space, only the main coefficients are reported in Table 2, while the full set of results is presented in Table A3 in Appendix. Overall, the speed of adjustment appears relatively unaffected by other variables. Columns (5) and (6) reproduce for robustness the regressions of Columns (1) and (2) but using the pre-Covid data only results are quantitatively unchanged and quantitatively very similar.

Table 2: Speed of adjustment

	Dependent variable:					
	distance to Target					
	(1)	(2)	(3)	(4)	(5)	(6)
dist. Target	0.954***		0.949***		0.933***	
	(0.013)		(0.014)		(0.015)	
dist. Target, pos.		0.979***		0.977***		0.968***
		(0.011)		(0.011)		(0.015)
dist. Target, neg.		0.834***		0.817***		0.816***
		(0.030)		(0.031)		(0.037)
Wald test dist. target = 1	11.69***		12.41***		20.06***	
Wald test pos. dist. target = 1		3.87**		4.25**		4.27**
Wald test neg. dist. target = 1		30.74***		34.87***		25.3***
Wald test pos. dist. target = neg. dist. target		21.2***		24.11***		14.68***
Bank FE	No	No	No	No	No	No
Nb banks	69	69	68	68	67	67
Observations	929	929	817	817	875	875
R^2	0.900	0.901	0.896	0.897	0.900	0.899
Adjusted R^2	0.900	0.901	0.896	0.897	0.899	0.897

Notes: *p<0.1; **p<0.05; ***p<0.01. Column (1) presents the results of the pooled regression of the CET1 ratio distance to target on its lag while columns (2) distinguishes between positive and negative lagged distance to target. Columns (3) and (4) reproduce the same regressions with the sample period ending in Q4 2019. Columns (5) and (6) include a set of explanatory variables interacted with the lagged distance to target. Those variables are the horizon of the target (in quarters), the return on asset, the impairment ratio, the log of Total asset, the TLTRO ratio, the annual real GDP growth, the inflation rate, the 3-month EURIBOR rate and the 10-year sovereign yield. All explanatory variables are lagged by one quarter. Errors are clustered at the bank level.

4.3 Impact on balance-sheet adjustment

In a final step, I estimate Equation 7. This informs on the insight the gap between actual and target CET1 ratios provides on banks future behaviour and the channels through which banks adjust toward their targets.

Table 3 presents the results. Confirming previous results, the CET1 ratio Fully Loaded adjusts upward (downward) when the distance to target is negative (positive). This adjustment of the ratio occurs through both a higher outstanding CET1 (the numerator) and a lower RWA (denominator). Rolling over the estimated coefficients to assess the evolution of outstanding CET1 and RWA until the distance to target becomes negligible, it appears that the increase in outstanding CET1 accounts for two thirds of the total adjustment while change in RWA accounts for the remaining third.[20] This is consistent with De Jonghe and Öztekin (2015) and Memmel and Raupach (2010) who find that banks below their target adjust through equity growth rather than asset reduction. Equity adjustment occurs through both issued capital and retained earnings. Nevertheless, the material impact on RWA suggests effect on the asset side.

This effect can be of two sorts: change in Total Original Exposure or in Risk Weight density. Results imply that both types of adjustments are at play. In particular, banks below (above) their target lend less (more) to NFC, either through loans or debt securities, which both reduces assets and risk weight density, as those exposures typically carry high risk weights. The impact is materially larger for debt securities holdings than for loans, as in Maurin and Toivanen (2012), consistent with the higher liquidity of the former. Combining results of Tables 1 and 3, a back-of-the-envelope calculation implies that a 1pp hike in capital requirements increases the target, and consequently the distance to target, by 0.30 pp, triggering a quarterly $0.30 * 0.24 = 0.07pp$ negative shock on NFC loan quarterly growth, or $2.8pp$ on annual growth rate. Moreover, the distance to target seems to affect banks' loss recognition, as a 1pp larger distance to target triggers a $37bps$ hike in Non-Performing Exposure ratio. This suggests that banks are more willing to recognise losses when it does not put at risk their ability to meet their target CET1 ratio.

Those results confirm the procyclical behaviour of banks' credit supply previously identified. When faced with economic crisis, banks tend to increase their CET1 targets. Simultaneously, their retained earnings fall due to weaker economic activity and credit losses. Both effects have a negative impact on the distance to target. Banks react by reducing their credit supply to NFC to reduce their risk weight density and by becoming more reluctant to recognise losses to spare capital, both reactions increasing their CET1 ratio.

In an extension of the previous regression, and in line with the analysis of the speed of adjustment, I re-run the regressions separating positive and negative distances to target, to determine whether the choice and magnitude of adjustment channels depend on the sign of the distance. The results housed in Table 4 confirm that the adjustment occurs on both sides of

[20]Strictly speaking, the breakdown depends on the initial and target CET1 ratio. In practice, the 2/3 vs 1/3 breakdown is valid throughout the set of actual and target values observed in the sample.

Table 3: Impact of distance to target

	Dependent variable:													
	CET1, FL	CET1 €, FL	RWA	TOE	RW	RWA, Credit	Loans NFC	Debt securities NFC	Loans HH	Loans GG	Cash	NPE	Issued capital	Retained earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target dist.	−0.199***	−1.140***	0.409***	0.183*	0.110***	0.279***	0.244**	1.126*	0.110	0.564	−1.271*	0.037**	−0.061***	−0.066**
	(0.037)	(0.259)	(0.088)	(0.108)	(0.040)	(0.107)	(0.113)	(0.620)	(0.103)	(0.719)	(0.750)	(0.018)	(0.018)	(0.027)
Target horizon	−0.001**	−0.005**	0.002*	0.002*	0.0001	0.001	0.0001	0.007	−0.0003	−0.003	0.022**	0.0001	−0.0002	−0.0003
	(0.0003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.008)	(0.001)	(0.006)	(0.011)	(0.0001)	(0.0002)	(0.0003)
Total Assets, log	0.001	0.094**	−0.045***	−0.051**	0.013	−0.061***	−0.056**	−0.321***	−0.060***	−0.299***	−0.174	0.011***	0.003	0.004
	(0.004)	(0.036)	(0.016)	(0.022)	(0.009)	(0.019)	(0.022)	(0.070)	(0.023)	(0.099)	(0.156)	(0.003)	(0.003)	(0.004)
Return on Asset	−0.172	−1.069	−0.910**	−0.392	−0.062	−0.995**	−0.490	1.174	−0.518	0.991	8.294*	−0.179	0.191***	−0.481**
	(0.130)	(1.103)	(0.406)	(0.773)	(0.291)	(0.433)	(0.508)	(3.160)	(0.467)	(2.752)	(4.783)	(0.111)	(0.060)	(0.208)
Credit ratio	−0.009	−0.002	0.042	0.110*	−0.013	0.011	0.006	−0.131	−0.061	−0.135	2.143***	0.024***	0.004	−0.004
	(0.009)	(0.100)	(0.033)	(0.063)	(0.025)	(0.041)	(0.065)	(0.288)	(0.054)	(0.249)	(0.518)	(0.006)	(0.008)	(0.011)
Impairment ratio	−0.010	−0.171	−0.137	−0.131	−0.027	−0.109	−0.256***	−0.655	−0.171*	0.044	−0.263	−0.028	0.029*	0.004
	(0.031)	(0.259)	(0.112)	(0.138)	(0.052)	(0.161)	(0.097)	(0.736)	(0.093)	(0.558)	(0.801)	(0.018)	(0.016)	(0.018)
Provisions	0.126	4.404***	−0.339	−3.556***	1.213***	−1.282*	−0.679	−11.105***	0.123	−2.422	−7.598	0.271	0.093	0.193**
	(0.110)	(1.194)	(0.449)	(1.007)	(0.347)	(0.671)	(0.610)	(3.950)	(0.594)	(5.750)	(7.292)	(0.185)	(0.066)	(0.097)
Deposit ratio	0.010	0.088	−0.009	−0.011	0.0003	0.044	−0.032	−0.107	−0.023	0.009	−0.168	−0.014*	0.001	−0.002
	(0.010)	(0.087)	(0.038)	(0.055)	(0.020)	(0.051)	(0.076)	(0.221)	(0.056)	(0.227)	(0.442)	(0.008)	(0.006)	(0.008)
TLTRO	−0.006	−0.043	−0.034	−0.049**	0.009	−0.030	−0.076**	−0.341***	−0.016	−0.101	0.448***	−0.013***	−0.0002	0.003
	(0.005)	(0.036)	(0.022)	(0.023)	(0.008)	(0.028)	(0.030)	(0.113)	(0.026)	(0.141)	(0.170)	(0.004)	(0.003)	(0.006)
GDP	−0.013*	−0.053	0.087**	0.043	0.021	0.077**	0.115**	0.062	−0.014	0.135	0.049	−0.013**	−0.017***	0.001
	(0.008)	(0.048)	(0.035)	(0.039)	(0.018)	(0.035)	(0.048)	(0.198)	(0.031)	(0.272)	(0.218)	(0.005)	(0.005)	(0.007)
HICP	−0.121**	−0.900**	0.008	0.012	0.021	−0.001	0.205	−0.848	−0.130	−1.065	−0.787	−0.024	−0.038	−0.077
	(0.054)	(0.447)	(0.221)	(0.256)	(0.101)	(0.278)	(0.294)	(1.548)	(0.249)	(1.769)	(2.408)	(0.028)	(0.043)	(0.051)
Unemployment	0.0004	0.001	−0.003*	−0.002	−0.0002	−0.002	−0.002	−0.011*	0.001	−0.015**	0.021***	−0.0002	0.001***	0.0003
	(0.0003)	(0.002)	(0.001)	(0.001)	(0.0003)	(0.002)	(0.001)	(0.006)	(0.001)	(0.006)	(0.007)	(0.0002)	(0.0002)	(0.0003)
10-year sov. yield	−0.087	−0.353	0.842***	0.994**	−0.116	0.576*	0.248	2.499	−0.206	6.951***	−7.737***	0.120*	−0.013	−0.109
	(0.074)	(0.571)	(0.253)	(0.445)	(0.198)	(0.304)	(0.350)	(1.524)	(0.244)	(1.889)	(2.762)	(0.064)	(0.044)	(0.078)
EURIBOR	0.003	0.026	−0.015	−0.016	−0.0002	−0.005	0.001	−0.022	−0.017	0.067	0.020	−0.004**	−0.002	−0.002
	(0.004)	(0.024)	(0.014)	(0.014)	(0.007)	(0.021)	(0.017)	(0.078)	(0.013)	(0.080)	(0.110)	(0.002)	(0.003)	(0.003)
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	999	984	999	985	984	999	999	940	999	993	948	999	999	982
R^2	0.152	0.132	0.093	0.094	0.070	0.067	0.083	0.042	0.067	0.041	0.103	0.139	0.059	0.066
Adjusted R^2	0.064	0.040	−0.002	−0.001	−0.029	−0.030	−0.012	−0.058	−0.030	−0.059	0.005	0.050	−0.038	−0.033

Notes: *p<0.1; **p<0.05; ***p<0.01. Explanatory variables include the distance between bank's actual CET1 ratio and its target, the number of quarters before target must be reached (*Horizon*), the bank's Return on Asset, its Net Interest Margin, its Impairment ratio, its log of TA, its TLTRO ratio, the annual growth in real GDP and HICP, the unemployment rate, the 10-year sovereign yield and the 3-month EURIBOR rate. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

the targets and that it is faster for banks under their targets, in particular through stronger adjustment of credit exposures to NFC. Banks below their target increase their CET1 ratio about three times faster than banks above targets reduce theirs, the coefficients being significantly different at the 10% level. Consistently, the adjustment in loans to NFCs is four times quicker for banks below target, and the impact of change in capital requirements jumps to $0.30 * 0.51 = 0.15pp$. By the same token, the effect on the NPE ratio is concentrated on banks below their target, suggesting impeded loss recognition. Those results confirm bank procyclical behavior in crisis time, as well as the potential expansionary effect of a requirement release.

I conduct a range of robustness analyses.

In a key robustness check, I control for the distance to capital requirement (the MDA trigger). Indeed, as targets are affected by capital requirements, the impacts estimated above may purely come from the influence of the capital requirements. Results are presented in Table 5. Despite the correlation between both distances, the impact of distance to target is qualitatively unchanged, while the impact of the distance to requirement is often not significant. This provides two lessons. First, targets affect banks' behaviour on their own right, and not only by channeling the impact of capital requirements, as otherwise the impact would be absorbed by the distance to capital requirements. Second, the impact of the distance to requirement has relatively low statistically significance in a horse race with the distance to target. This suggests that this impact of capital requirements is actually channelled through the CET1 targets, rather than having a direct impact on balance-sheet adjustment. This reinforces the case for further analysis and monitoring of those targets, as they appear as the key channel of prudential policy.

Other robustness exercises are reported in Appendix for the sake of space. In Table A4, I end the sample period in Q4 2019 to exclude the COVID-19 pandemic period, market by largely distorted macroeconomic forecasts and strong fiscal, monetary and prudential support measures. Results remain qualitatively unchanged. Then, in Table A5 I add time fixed effect to better take into account unobserved system-wide shocks. Finally, in line with the regressions in Section 4.2, I run pooled regressions without intercept when the endogenous variable is a change in a ratio. Indeed, intercepts, both at the bank or pooled levels, suggest a permanent drift in those ratios, incompatible with their interval of definition. Results are reported in Table A6. The impact of the distance to target remains qualitatively unchanged in all those robustness exercises.

Overall, those results confirm that (distance to) announced target provide valuable information on future balance-sheet evolution, as banks move toward their targets by adjusting mostly

Table 4: Impact of distance to target - Sign-dependent effect

	Dependent variable:													
	CET1, FL	CET1 €, FL	RWA	TOE	RW	RWA, Credit	Loans NFC	Debt securities NFC	Loans HH	Loans GG	Cash	NPE	Issued capital	Retained earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target dist., pos	−0.178*** (0.050)	−0.969*** (0.314)	0.416*** (0.117)	0.279** (0.131)	0.082 (0.055)	0.274** (0.135)	0.123 (0.148)	1.036 (0.817)	−0.060 (0.113)	−0.517 (0.965)	−0.699 (0.972)	0.007 (0.015)	−0.044** (0.020)	−0.082** (0.033)
Target dist., neg	−0.244*** (0.045)	−1.515*** (0.407)	0.393*** (0.135)	−0.024 (0.196)	0.169* (0.090)	0.288* (0.172)	0.507*** (0.174)	1.301 (1.124)	0.480*** (0.164)	2.908*** (1.116)	−2.628* (1.367)	0.101** (0.042)	−0.098** (0.041)	−0.032 (0.054)
Target horizon	−0.001** (0.0003)	−0.006** (0.002)	0.002* (0.001)	0.002* (0.001)	0.0002 (0.001)	0.001 (0.001)	0.0003 (0.001)	0.007 (0.008)	−0.00001 (0.001)	−0.001 (0.006)	0.021* (0.011)	0.0001 (0.0002)	−0.0002 (0.0002)	−0.0003 (0.0003)
Total Assets, log	0.001 (0.004)	0.094*** (0.036)	−0.045*** (0.016)	−0.051** (0.022)	0.013 (0.009)	−0.061*** (0.019)	−0.056*** (0.021)	−0.322*** (0.072)	−0.060*** (0.023)	−0.299*** (0.100)	−0.175 (0.156)	0.011*** (0.003)	0.003 (0.003)	0.004 (0.004)
Return on Asset	−0.163 (0.124)	−1.005 (1.091)	−0.906** (0.404)	−0.345 (0.757)	−0.074 (0.281)	−0.997** (0.430)	−0.541 (0.493)	1.165 (3.141)	−0.589 (0.459)	0.542 (2.761)	8.697* (4.691)	−0.192* (0.100)	0.198*** (0.059)	−0.487** (0.205)
Credit ratio	−0.009 (0.009)	0.003 (0.102)	0.042 (0.033)	0.114* (0.063)	−0.014 (0.026)	0.011 (0.042)	0.003 (0.063)	−0.136 (0.297)	−0.065 (0.053)	−0.165 (0.249)	2.156*** (0.519)	0.023*** (0.006)	0.004 (0.007)	−0.004 (0.011)
Impairment ratio	−0.011 (0.032)	−0.181 (0.264)	−0.138 (0.113)	−0.138 (0.136)	−0.025 (0.051)	−0.108 (0.161)	−0.248*** (0.095)	−0.648 (0.748)	−0.159* (0.093)	0.120 (0.540)	−0.307 (0.797)	−0.026 (0.018)	0.028* (0.017)	0.005 (0.018)
Provisions	0.108 (0.108)	4.274*** (1.208)	−0.346 (0.438)	−3.633*** (0.999)	1.236*** (0.350)	−1.278* (0.663)	−0.573 (0.611)	−11.049*** (3.944)	0.272 (0.598)	−1.474 (5.857)	−7.995 (7.186)	0.296* (0.177)	0.078 (0.061)	0.207** (0.095)
Deposit ratio	0.010 (0.010)	0.082 (0.087)	−0.009 (0.039)	−0.015 (0.057)	0.001 (0.021)	0.045 (0.051)	−0.028 (0.075)	−0.104 (0.226)	−0.018 (0.054)	0.045 (0.223)	−0.184 (0.446)	−0.013* (0.007)	0.001 (0.006)	−0.002 (0.008)
TLTRO	−0.006 (0.005)	−0.046 (0.036)	−0.034 (0.022)	−0.051** (0.023)	0.009 (0.008)	−0.030 (0.028)	−0.074** (0.029)	−0.339*** (0.114)	−0.014 (0.024)	−0.082 (0.141)	0.437** (0.175)	−0.012*** (0.005)	−0.0005 (0.003)	0.003 (0.006)
GDP	−0.014* (0.008)	−0.058 (0.049)	0.087** (0.035)	0.041 (0.040)	0.022 (0.018)	0.077** (0.035)	0.117** (0.047)	0.066 (0.198)	−0.010 (0.029)	0.159 (0.274)	0.034 (0.219)	−0.013** (0.006)	−0.017*** (0.005)	0.002 (0.007)
HICP	−0.126** (0.054)	−0.936** (0.450)	0.007 (0.220)	−0.009 (0.256)	0.027 (0.102)	0.0003 (0.279)	0.233 (0.300)	−0.835 (1.550)	−0.090 (0.249)	−0.815 (1.730)	−0.891 (2.416)	−0.017 (0.029)	−0.042 (0.042)	−0.073 (0.051)
Unemployment	0.0004 (0.0003)	0.002 (0.002)	−0.003* (0.001)	−0.002 (0.001)	−0.0002 (0.0003)	−0.002 (0.001)	−0.002* (0.001)	−0.011* (0.006)	0.001 (0.001)	−0.016** (0.006)	0.021*** (0.007)	−0.0002 (0.0002)	0.001*** (0.0001)	0.0003 (0.0003)
10-year sov. yield	−0.097 (0.074)	−0.433 (0.584)	0.839*** (0.251)	0.952** (0.442)	−0.104 (0.197)	0.578* (0.300)	0.303 (0.345)	2.535 (1.557)	−0.129 (0.249)	7.430*** (1.944)	−8.032*** (2.763)	0.133** (0.061)	−0.021 (0.046)	−0.102 (0.078)
EURIBOR	0.003 (0.004)	0.025 (0.024)	−0.015 (0.014)	−0.016 (0.014)	−0.0001 (0.007)	−0.005 (0.021)	0.001 (0.017)	−0.022 (0.079)	−0.017 (0.013)	0.068 (0.078)	0.019 (0.110)	−0.004** (0.002)	−0.002 (0.003)	−0.002 (0.003)
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald test pos = neg	0.92	1.06	0.02	1.67	0.54	0	2.61	0.03	6.22**	4.3**	1.13	3.87**	1.21	0.58
Observations	999	984	999	985	984	999	999	940	999	993	948	999	999	982
R^2	0.154	0.134	0.093	0.096	0.070	0.067	0.085	0.042	0.073	0.045	0.104	0.148	0.062	0.067
Adjusted R^2	0.065	0.041	−0.003	−0.001	−0.029	−0.031	−0.011	−0.059	−0.025	−0.056	0.004	0.058	−0.037	−0.033

Notes: *p<0.1; **p<0.05; ***p<0.01. Explanatory variables include the distance between bank's actual CET1 ratio and its target, separated between positive and negative distance, the number of quarters before target must be reached (*Horizon*), the bank's Return on Asset, its Net Interest Margin, its Impairment ratio, its log of TA, its TLTRO ratio, the annual growth in real GDP and HICP, the unemployment rate, the 10-year sovereign yield and the 3-month EURIBOR rate. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

Table 5: Impact of distance to target, robustness with distance to requirements

	Dependent variable:													
	CET1, FL	CET1 €, FL	RWA	TOE	RW	RWA, Credit	Loans NFC	Debt securities NFC	Loans HH	Loans GG	Cash	NPE	Issued capital	Retained earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target dist.	−0.144***	−1.087***	0.394***	0.227**	0.079	0.319**	0.388***	0.808	0.112	0.727	−1.308	0.026	−0.042*	−0.007
	(0.046)	(0.309)	(0.127)	(0.106)	(0.049)	(0.158)	(0.110)	(0.817)	(0.110)	(0.735)	(1.118)	(0.023)	(0.025)	(0.036)
Cap. req. dist.	−0.068*	−0.007	−0.012	−0.094	0.049	−0.094	−0.211*	0.373	−0.021	−0.845	−0.274	0.023*	−0.020	−0.075***
	(0.035)	(0.213)	(0.098)	(0.096)	(0.037)	(0.123)	(0.113)	(0.574)	(0.067)	(0.676)	(0.912)	(0.013)	(0.025)	(0.023)
Target horizon	−0.001**	−0.005**	0.002*	0.002*	0.0001	0.002	0.0003	0.007	−0.0003	−0.002	0.022**	0.00004	−0.0002	−0.0002
	(0.0003)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.008)	(0.001)	(0.006)	(0.011)	(0.0002)	(0.0002)	(0.0003)
Total Assets, log	0.001	0.106***	−0.051***	−0.055**	0.013	−0.070***	−0.067***	−0.290***	−0.060**	−0.433***	−0.215	0.013***	0.003	0.002
	(0.004)	(0.039)	(0.016)	(0.025)	(0.009)	(0.019)	(0.023)	(0.067)	(0.027)	(0.119)	(0.162)	(0.003)	(0.004)	(0.004)
Return on Asset	−0.079	−1.225	−0.950**	−0.454	−0.084	−0.887*	−0.227	1.534	−0.690	3.840	10.095**	−0.216**	0.209**	−0.365*
	(0.155)	(1.085)	(0.442)	(0.877)	(0.288)	(0.523)	(0.551)	(3.306)	(0.519)	(3.796)	(4.996)	(0.105)	(0.085)	(0.198)
Credit ratio	−0.010	0.008	0.043	0.108*	−0.013	0.012	0.001	−0.059	−0.059	−0.257	2.039***	0.026***	0.004	−0.005
	(0.010)	(0.103)	(0.032)	(0.063)	(0.025)	(0.042)	(0.068)	(0.288)	(0.057)	(0.273)	(0.517)	(0.006)	(0.008)	(0.011)
Impairment ratio	−0.002	−0.121	−0.130	−0.110	−0.031	−0.100	−0.225**	−0.423	−0.179*	−0.365	−0.394	−0.022	0.032*	0.012
	(0.037)	(0.274)	(0.113)	(0.138)	(0.059)	(0.160)	(0.109)	(0.701)	(0.100)	(0.638)	(0.842)	(0.017)	(0.018)	(0.017)
Provisions	0.254*	4.988***	−0.843**	−3.627***	1.057**	−1.718***	−0.989	−9.291***	0.082	−7.920	−8.331	0.306*	0.149**	0.269***
	(0.129)	(1.223)	(0.382)	(1.058)	(0.411)	(0.601)	(0.742)	(3.438)	(0.703)	(5.028)	(7.516)	(0.183)	(0.074)	(0.102)
Deposit ratio	0.010	0.092	−0.005	−0.013	0.0004	0.051	−0.025	0.002	−0.023	−0.082	−0.186	−0.012*	0.001	−0.001
	(0.010)	(0.090)	(0.039)	(0.057)	(0.021)	(0.053)	(0.080)	(0.224)	(0.058)	(0.228)	(0.446)	(0.007)	(0.006)	(0.008)
TLTRO	−0.007	−0.039	−0.029	−0.058**	0.015	−0.029	−0.074**	−0.340***	−0.026	−0.124	0.393**	−0.012**	−0.001	0.004
	(0.005)	(0.037)	(0.020)	(0.026)	(0.009)	(0.028)	(0.030)	(0.111)	(0.030)	(0.150)	(0.182)	(0.005)	(0.003)	(0.006)
GDP	−0.018**	−0.056	0.098***	0.039	0.027	0.081**	0.112**	0.017	−0.013	0.197	0.031	−0.013**	−0.018***	−0.004
	(0.007)	(0.043)	(0.030)	(0.038)	(0.019)	(0.032)	(0.044)	(0.194)	(0.032)	(0.247)	(0.225)	(0.006)	(0.005)	(0.007)
HICP	−0.110**	−0.903*	−0.072	−0.047	0.013	−0.040	0.175	−1.023	−0.128	−1.345	−0.862	−0.024	−0.033	−0.046
	(0.053)	(0.475)	(0.207)	(0.251)	(0.097)	(0.271)	(0.281)	(1.602)	(0.243)	(1.712)	(2.459)	(0.029)	(0.043)	(0.052)
Unemployment	0.0003	0.001	−0.003**	−0.002	−0.0002	−0.002	−0.003*	−0.008	0.001	−0.016**	0.022***	−0.0002	0.001***	0.0003
	(0.0003)	(0.002)	(0.001)	(0.001)	(0.0004)	(0.002)	(0.002)	(0.007)	(0.001)	(0.007)	(0.007)	(0.0002)	(0.0002)	(0.0003)
10-year sov. yield	−0.028	−0.312	0.813***	1.074**	−0.163	0.612**	0.371	1.914	−0.183	7.703***	−7.444***	0.099	0.008	−0.058
	(0.075)	(0.552)	(0.272)	(0.441)	(0.192)	(0.310)	(0.379)	(1.510)	(0.259)	(1.799)	(2.851)	(0.069)	(0.048)	(0.076)
EURIBOR	0.001	0.030	−0.027*	−0.034**	0.003	−0.016	−0.017	−0.054	−0.018	0.028	−0.037	−0.004	−0.003	−0.003
	(0.004)	(0.027)	(0.015)	(0.016)	(0.007)	(0.021)	(0.018)	(0.081)	(0.013)	(0.093)	(0.119)	(0.002)	(0.002)	(0.003)
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	985	972	985	973	972	985	985	929	985	979	935	985	985	968
R^2	0.162	0.133	0.103	0.100	0.070	0.074	0.090	0.040	0.066	0.050	0.104	0.140	0.063	0.083
Adjusted R^2	0.073	0.039	0.007	0.002	−0.031	−0.025	−0.007	−0.064	−0.034	−0.053	0.003	0.048	−0.037	−0.017

Notes: *p<0.1; **p<0.05; ***p<0.01. Explanatory variables include the distance between actual CET1 ratio and the target CET1 ratio (*Targetdist.*) and the MDA trigger (*Cap.req.dist*), the number of quarters before target must be reached (*Horizon*), the bank's Return on Asset, Impairment ratio, Loan to deposit ratio, Net Interest Margin and log of TA (demeaned at the quarterly level in the cross-section), quarterly growth in real GDP and HICP, unemployment rate, credit demand index of the Bank Lending Survey and the interest rate of the Main Refinancing Operations of the ECB. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

their outstanding capital but also their asset side through portfolio reallocation.

5 Conclusion

This article builds on an original dataset of CET1 ratio targets European banks publicly announce to their investors. This materially complements the existing literature which depends on partial adjustment models to estimate unobserved targets. The analysis of observed targets provides three key lessons. First, announced targets increase with capital requirements and adverse macroeconomic environment. Capital requirements materially affect targets, but not one for one. This is consistent with the trade-off theory according to which banks balance the expected cost of regulatory breach versus the cost of high capital ratios. Moreover, banks seem to perceive similarly the different types of capital requirements in the regulatory framework, suggesting weak usability of regulatory buffers. Banks also tend to increase their targets when faced with adverse economic environment, suggesting stronger market pressure and banks' willingness not to be discriminated against. Second, banks are serious about their targets, converging toward them, from both below and above. Importantly, the adjustment is materially faster for banks initially below their targets, suggesting higher pressure to build up solvency than to return capital to investors. Third, target CET1 ratios have important informational content on banks future balance-sheet adjustments. Banks away from their targets adjust their CET1 ratios to reach it, mainly through their stock of CET1 and portfolio rebalancing, with material impact on corporate credit supply. This adjustment occurs for banks both below and above their CET1 ratio targets, but it is much stronger in the former case, in line with banks below their targets being under greater pressure to adjust.

Those results provide important lessons for prudential authorities. They call for the monitoring of banks' announced targets in order to anticipate credit development and to assess the effectiveness of prudential policies. They also indicate that banks are unwilling to reduce their capital ratios during adverse times and to draw on their regulatory buffers, raising concerns regarding their usability. Simultaneously, this calls for the build-up of appropriate countercyclical capital requirements that the regulator could release in crisis times, to mitigate banks' procyclical reaction. Appropriate communication and forward guidance could also influence banks anticipations and, in turn, CET1 targets and credit policy. Further ahead, this paper paves the way for further analysis of banks' strategic targets, in particular their targets for return on equity and payout ratio, their drivers and their consequences on banks' behaviour.

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A Appendix

Table A1: Summary statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Target	1,168	0.134	0.024	0.085	0.117	0.145	0.250
OCR strict	1,059	0.101	0.012	0.070	0.092	0.108	0.151
AT1 and T2 shortfall	1,051	0.010	0.009	0.000	0.000	0.015	0.044
P2G	1,128	0.009	0.009	0.000	0.000	0.015	0.038
Total Assets, log	1,074	25.804	1.507	21.240	24.833	27.035	28.526
Return on Asset	1,074	0.002	0.003	−0.018	0.002	0.004	0.019
Off Balance-sheet	1,074	0.208	0.107	0.014	0.138	0.291	0.750
Credit ratio	1,074	0.808	0.095	0.459	0.775	0.873	0.971
RW	1,088	0.988	14.649	0.032	0.294	0.413	344.680
Impairment ratio	1,066	0.023	0.031	0.0001	0.004	0.025	0.160
Provisions	1,066	0.007	0.006	0.00001	0.003	0.010	0.037
Deposit ratio	1,074	0.662	0.141	0.193	0.577	0.765	0.931
Cost of deposits	1,104	0.002	0.001	−0.001	0.001	0.002	0.006
TLTRO	1,074	0.058	0.101	0.000	0.000	0.064	0.489
GDP growth for. 5y, dom.	1,089	0.015	0.006	−0.0005	0.011	0.017	0.036
CPI growth for. 5y, dom.	1,089	1.503	0.266	0.791	1.322	1.719	2.018
EURIBOR	1,151	−0.249	0.174	−0.472	−0.329	−0.258	0.299
10-year sov. yield	1,138	0.010	0.010	−0.005	0.003	0.015	0.115

Notes: This table provides the summary statistics for all the regression variables used in the baseline regression.

Table A2: Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Target	1																	
OCR strict ann.	0.264	1																
AT1 and T2 shortfall	0.160	-0.099	1															
P2G	0.196	-0.121	-0.045	1														
Total Assets, log	-0.223	0.052	-0.537	-0.121	1													
Return on Asset	0.133	-0.020	-0.155	0.034	0.024	1												
Off Balance-sheet	-0.194	-0.102	-0.240	-0.210	0.610	-0.033	1											
Credit ratio	0.224	-0.115	0.359	0.068	-0.588	0.095	-0.311	1										
RW	-0.176	-0.013	0.261	-0.120	-0.160	0.109	0.011	-0.156	1									
Impairment ratio	-0.209	-0.090	0.413	-0.099	-0.288	-0.338	0.048	0.208	0.374	1								
Provisions	-0.338	-0.216	0.047	-0.020	0.045	-0.258	0.177	0.083	0.108	0.188	1							
Deposit ratio	0.035	-0.146	0.396	0.189	-0.415	-0.025	-0.213	0.596	0.099	0.317	0.171	1						
Cost of deposits	-0.316	0.040	-0.207	-0.093	0.320	-0.129	-0.072	-0.188	-0.133	-0.133	0.190	-0.291	1					
TLTRO	-0.129	-0.315	0.157	0.106	-0.129	-0.126	0.234	0.145	0.157	0.343	0.119	0.206	-0.354	1				
GDP growth for. 5y, dom.	-0.126	0.240	0.085	0.080	-0.052	0.135	-0.357	0.061	0.166	0.067	-0.063	0.226	0.189	-0.314	1			
CPI growth for. 5y, dom.	0.165	0.196	-0.181	0.422	-0.073	0.120	-0.234	0.073	-0.213	-0.357	0.009	0.069	0.072	-0.180	0.280	1		
EURIBOR	-0.239	0.002	0.166	-0.525	0.041	-0.079	0.058	-0.011	0.087	0.255	0.039	-0.107	0.256	-0.185	0.213	-0.287	1	
10-year sov. yield	-0.164	-0.255	0.366	0.006	-0.105	-0.113	0.199	0.136	0.369	0.585	0.165	0.304	-0.170	0.504	-0.010	-0.266	0.233	1

Notes: This table reports the correlation matrix of the main regression variables for the sample of banks in the main regression, containing 950 bank-quarter observations.

Table A3: Speed of adjustment

	Dependent variable: distance to Target					
	(1)	(2)	(3)	(4)	(5)	(6)
dist. Target	0.954***		0.949***		0.933***	
	(0.013)		(0.014)		(0.015)	
dist. Target, pos.		0.979***		0.977***		0.968***
		(0.011)		(0.011)		(0.015)
dist. Target, neg.		0.834***		0.817***		0.816***
		(0.030)		(0.031)		(0.037)
dist. Target:dist. Target, neg.					−0.022**	
					(0.009)	
dist. Target:Return on Asset					0.005	
					(0.017)	
dist. Target:Impairment ratio					−0.057**	
					(0.025)	
dist. Target:Total Assets, log					−0.044*	
					(0.025)	
dist. Target:TLTRO					0.012	
					(0.019)	
dist. Target:GDP					0.018*	
					(0.010)	
dist. Target:HICP					−0.026	
					(0.020)	
dist. Target:10-year sov. yield					−0.038	
					(0.036)	
dist. Target:EURIBOR					0.036	
					(0.028)	
dist. Target, pos.:dist. Target, neg.						−0.013
						(0.009)
dist. Target, neg.:dist. Target, neg.						−0.022
						(0.046)
dist. Target, pos.:Return on Asset						−0.006
						(0.011)
dist. Target, neg.:Return on Asset						0.022
						(0.017)
dist. Target, pos.:Impairment ratio						−0.030
						(0.022)
dist. Target, neg.:Impairment ratio						−0.047
						(0.037)
dist. Target, pos.:Total Assets, log						−0.015
						(0.025)
dist. Target, neg.:Total Assets, log						0.005
						(0.041)
dist. Target, pos.:TLTRO						−0.046**
						(0.023)
dist. Target, neg.:TLTRO						0.054
						(0.036)
dist. Target, pos.:GDP						0.017
						(0.013)
dist. Target, neg.:GDP						−0.039
						(0.034)
dist. Target, pos.:HICP						−0.040*
						(0.020)
dist. Target, neg.:HICP						0.050
						(0.039)
dist. Target, pos.:10-year sov. yield						−0.018
						(0.028)
dist. Target, neg.:10-year sov. yield						0.021
						(0.048)
dist. Target, pos.:EURIBOR						0.014
						(0.017)
dist. Target, neg.:EURIBOR						0.027
						(0.067)
Wald test dist. target = 1	11.69***		12.41***		20.06***	
Wald test pos. dist. target = 1		3.87**		4.25**		4.27**
Wald test neg. dist. target = 1		30.74***		34.87***		25.3***
Wald test pos. dist. target = neg. dist. target		21.2***		24.11***		14.68***
Bank FE	No	No	No	No	No	No
Nb banks	69	69	68	68	67	67
Observations	929	929	817	817	875	875
R^2	0.900	0.901	0.896	0.897	0.900	0.899
Adjusted R^2	0.900	0.901	0.896	0.897	0.899	0.897
F Statistic	8,113.516*** (df = 1; 928)	4,202.945*** (df = 2; 927)	6,777.904*** (df = 1; 816)	3,536.763*** (df = 2; 815)	767.579*** (df = 10; 865)	398.531*** (df = 20; 855)

Notes: *p<0.1; **p<0.05; ***p<0.01. Column (1) presents the results of the pooled regression of the CET1 ratio distance to target on its lag while columns (2) distinguishes between positive and negative lagged distance to target. Columns (3) and (4) reproduce the same regressions with the sample period ending in Q4 2019. Columns (5) and (6) include a set of explanatory variables interacted with the lagged distance to target. Those variables are the horizon of the target (in quarters), the return on asset, the impairment ratio, the log of Total asset, the TLTRO ratio, the annual real GDP growth, the inflation rate, the 3-month EURIBOR rate and the 10-year sovereign yield. All explanatory variables are lagged by one quarter. Errors are clustered at the bank level.

Table A4: Impact of distance to target - preCovid

	Dependent variable:													
	CET1, FL	CET1 €, FL	RWA	TOE	RW	RWA, Credit	Loans NFC	Debt securities NFC	Loans HH	Loans GG	Cash	NPE	Issued capital	Retained earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target dist.	-0.227^{***}	-1.316^{***}	0.432^{***}	0.180	0.119^{**}	0.283^{***}	0.228^{*}	0.979	0.069	1.219^{*}	-1.370^{*}	0.044^{**}	-0.068^{***}	-0.081^{***}
	(0.041)	(0.305)	(0.095)	(0.123)	(0.048)	(0.107)	(0.127)	(0.758)	(0.117)	(0.721)	(0.826)	(0.019)	(0.021)	(0.027)
Target horizon	-0.001^{***}	-0.008^{***}	0.002^{*}	0.003^{**}	0.0002	0.002	−0.0003	0.005	−0.001	−0.003	0.006	0.0002	−0.0003	−0.0003
	(0.0004)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.011)	(0.001)	(0.007)	(0.013)	(0.0002)	(0.0002)	(0.0003)
Total Assets, log	0.003	0.116^{***}	-0.048^{***}	-0.061^{***}	0.015	-0.069^{***}	-0.051^{**}	-0.325^{***}	-0.070^{***}	-0.213^{**}	-0.303^{**}	0.013^{***}	0.004	0.004
	(0.004)	(0.035)	(0.017)	(0.023)	(0.010)	(0.019)	(0.023)	(0.095)	(0.024)	(0.096)	(0.134)	(0.003)	(0.004)	(0.005)
Return on Asset	−0.137	−0.822	-0.973^{**}	−0.544	−0.032	-1.053^{**}	−0.510	1.764	−0.366	2.005	4.838	−0.168	0.199^{***}	-0.443^{**}
	(0.159)	(1.223)	(0.430)	(0.723)	(0.299)	(0.448)	(0.540)	(3.386)	(0.506)	(2.827)	(4.794)	(0.109)	(0.062)	(0.194)
Credit ratio	−0.008	0.023	0.045	0.112^{*}	−0.006	0.023	0.001	−0.236	−0.062	−0.414	2.014^{***}	0.024^{***}	0.007	−0.008
	(0.010)	(0.102)	(0.040)	(0.067)	(0.027)	(0.047)	(0.070)	(0.327)	(0.060)	(0.284)	(0.518)	(0.007)	(0.008)	(0.013)
Impairment ratio	−0.026	−0.227	−0.115	−0.143	−0.007	−0.111	-0.233^{**}	−0.459	-0.219^{**}	0.338	−0.587	−0.017	0.028	−0.0002
	(0.033)	(0.267)	(0.133)	(0.155)	(0.055)	(0.183)	(0.103)	(0.855)	(0.097)	(0.610)	(0.707)	(0.018)	(0.018)	(0.018)
Provisions	−0.012	2.830^{**}	0.127	-2.494^{**}	1.045^{***}	−1.006	0.088	-12.294^{**}	0.627	5.976	−1.554	0.247	0.047	0.119
	(0.116)	(1.436)	(0.492)	(1.192)	(0.396)	(0.670)	(0.540)	(5.742)	(0.566)	(6.255)	(7.027)	(0.181)	(0.064)	(0.098)
Deposit ratio	0.002	0.135^{*}	0.033	−0.059	0.035	0.086	−0.031	0.062	−0.056	0.011	−0.468	−0.012	−0.0001	−0.005
	(0.009)	(0.079)	(0.040)	(0.049)	(0.022)	(0.052)	(0.072)	(0.258)	(0.065)	(0.262)	(0.495)	(0.008)	(0.006)	(0.008)
TLTRO	-0.013^{**}	-0.108^{***}	−0.021	−0.012	0.007	−0.018	-0.063^{**}	-0.335^{**}	−0.025	−0.021	0.749^{***}	-0.011^{**}	−0.001	−0.005
	(0.005)	(0.040)	(0.024)	(0.024)	(0.011)	(0.032)	(0.031)	(0.158)	(0.031)	(0.121)	(0.197)	(0.005)	(0.004)	(0.006)
GDP	0.023^{***}	0.039	−0.051	0.018	−0.033	−0.020	−0.054	−0.067	0.074	-0.933^{***}	−0.238	-0.035^{***}	−0.014	0.023^{***}
	(0.007)	(0.066)	(0.051)	(0.084)	(0.025)	(0.048)	(0.048)	(0.434)	(0.045)	(0.248)	(0.232)	(0.009)	(0.010)	(0.006)
HICP	-0.142^{**}	-0.913^{**}	0.052	−0.119	0.078	0.105	0.041	−1.367	−0.190	0.274	−1.101	−0.033	−0.049	−0.074
	(0.058)	(0.450)	(0.230)	(0.260)	(0.102)	(0.298)	(0.306)	(1.685)	(0.262)	(1.741)	(2.389)	(0.029)	(0.045)	(0.050)
Unemployment	0.0003	0.002	−0.002	−0.002	−0.00004	−0.001	−0.002	−0.009	0.001	-0.014^{**}	0.025^{***}	−0.0003	0.001^{***}	0.0001
	(0.0003)	(0.003)	(0.001)	(0.001)	(0.0003)	(0.001)	(0.002)	(0.007)	(0.001)	(0.007)	(0.008)	(0.0002)	(0.0002)	(0.0003)
10-year sov. yield	−0.052	−0.314	0.672^{***}	0.982^{**}	−0.189	0.360	0.288	1.886	−0.137	6.486^{***}	-8.163^{***}	0.125^{**}	−0.006	−0.080
	(0.075)	(0.598)	(0.238)	(0.486)	(0.219)	(0.288)	(0.358)	(1.548)	(0.242)	(1.965)	(2.589)	(0.058)	(0.043)	(0.083)
EURIBOR	0.001	0.024	−0.005	−0.014	0.006	0.004	0.003	−0.018	−0.021	0.082	0.050	-0.003^{*}	−0.003	−0.003
	(0.004)	(0.025)	(0.016)	(0.015)	(0.007)	(0.023)	(0.018)	(0.086)	(0.014)	(0.085)	(0.113)	(0.002)	(0.003)	(0.003)
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	848	833	848	834	834	848	848	793	848	844	809	848	848	836
R^2	0.136	0.104	0.067	0.052	0.032	0.048	0.038	0.027	0.053	0.033	0.079	0.118	0.054	0.053
Adjusted R^2	0.047	0.010	−0.029	−0.047	−0.069	−0.050	−0.061	−0.075	−0.044	−0.067	−0.021	0.027	−0.043	−0.046

Notes: *p<0.1; **p<0.05; ***p<0.01. Explanatory variables include the distance between actual CET1 ratio and the target, the number of quarters before target must be reached (*Horizon*), the bank's Return on Asset, Impairment ratio, Loan to deposit ratio, Net Interest Margin and log of TA (demeaned at the quarterly level in the cross-section), quarterly growth in real GDP and HICP, unemployment rate, credit demand index of the Bank Lending Survey and the interest rate of the Main Refinancing Operations of the ECB. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

Table A5: Impact of distance to target - with time fixed effects

	Dependent variable:													
	CET1, FL	CET1 €, FL	RWA	TOE	RW	RWA, Credit	Loans NFC	Debt securities NFC	Loans HH	Loans GG	Cash	NPE	Issued capital	Retained earnings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Target dist.	−0.188***	−1.032***	0.426***	0.184*	0.119***	0.286***	0.267**	1.150**	0.115	0.469	−1.261**	0.035**	−0.062***	−0.063**
	(0.032)	(0.212)	(0.085)	(0.105)	(0.040)	(0.104)	(0.104)	(0.573)	(0.109)	(0.715)	(0.624)	(0.016)	(0.017)	(0.026)
Target horizon	−0.001**	−0.005**	0.001	0.002	0.0002	0.001	−0.00004	0.007	−0.001	−0.004	0.018*	0.0001	−0.0002	−0.0002
	(0.0003)	(0.002)	(0.001)	(0.001)	(0.0005)	(0.001)	(0.001)	(0.008)	(0.001)	(0.006)	(0.011)	(0.0001)	(0.0002)	(0.0003)
Total Assets, log	−0.004	0.059	−0.034*	−0.047**	0.017**	−0.051**	−0.037	−0.286***	−0.066***	−0.173**	−0.192	0.013***	0.002	−0.0003
	(0.004)	(0.039)	(0.018)	(0.022)	(0.008)	(0.020)	(0.023)	(0.070)	(0.024)	(0.078)	(0.162)	(0.003)	(0.004)	(0.004)
Return on Asset	−0.043	−0.323	−1.166***	−0.355	−0.147	−1.262***	−0.786*	−0.525	−0.479	−1.550	9.521**	−0.198*	0.214***	−0.416*
	(0.098)	(0.940)	(0.365)	(0.725)	(0.258)	(0.411)	(0.470)	(3.620)	(0.450)	(2.469)	(4.684)	(0.107)	(0.060)	(0.233)
Credit ratio	−0.003	−0.031	−0.002	0.144**	−0.040	−0.047	−0.029	−0.209	−0.036	−0.502**	2.528***	0.025***	0.008	0.00004
	(0.009)	(0.104)	(0.038)	(0.061)	(0.026)	(0.049)	(0.068)	(0.277)	(0.057)	(0.238)	(0.509)	(0.006)	(0.008)	(0.011)
Impairment ratio	−0.023	−0.106	−0.033	−0.203	0.029	−0.002	−0.175*	−0.494	−0.243**	0.398	−1.010	−0.029	0.023	−0.005
	(0.028)	(0.238)	(0.120)	(0.144)	(0.046)	(0.177)	(0.099)	(0.820)	(0.096)	(0.569)	(1.003)	(0.020)	(0.020)	(0.019)
Provisions	0.009	3.869***	−0.402	−3.801***	1.353***	−1.355**	−0.501	−11.566***	−0.138	−2.737	−8.371	0.325*	0.104	0.128
	(0.100)	(0.990)	(0.451)	(0.968)	(0.333)	(0.635)	(0.650)	(4.401)	(0.644)	(5.248)	(7.532)	(0.171)	(0.074)	(0.107)
Deposit ratio	0.009	0.040	−0.025	0.025	−0.014	0.011	−0.017	−0.214	−0.012	0.011	0.327	−0.010	0.005	−0.001
	(0.009)	(0.080)	(0.039)	(0.055)	(0.021)	(0.059)	(0.081)	(0.216)	(0.059)	(0.206)	(0.412)	(0.007)	(0.006)	(0.009)
TLTRO	−0.010*	−0.047	−0.013	−0.045**	0.017**	−0.006	−0.052*	−0.298**	−0.032	−0.079	0.443**	−0.011**	−0.001	−0.003
	(0.005)	(0.042)	(0.022)	(0.022)	(0.008)	(0.027)	(0.029)	(0.145)	(0.025)	(0.140)	(0.179)	(0.005)	(0.003)	(0.006)
GDP	0.021***	0.011	−0.015	0.069	−0.042	0.003	−0.027	−0.141	0.084**	−0.528*	0.150	−0.033***	−0.014	0.021***
	(0.008)	(0.069)	(0.043)	(0.067)	(0.026)	(0.047)	(0.044)	(0.366)	(0.040)	(0.288)	(0.255)	(0.008)	(0.009)	(0.006)
HICP	−0.114*	−0.990*	−0.200	−0.025	−0.096	−0.035	0.450	1.429	−0.140	2.111	−2.554	0.037	−0.073	−0.026
	(0.067)	(0.583)	(0.308)	(0.371)	(0.154)	(0.378)	(0.409)	(1.974)	(0.295)	(2.268)	(2.993)	(0.034)	(0.056)	(0.063)
Unemployment	−0.00004	0.003	0.0002	−0.004**	0.002***	0.002	−0.001	−0.003	0.0001	0.008	−0.011	−0.0003	0.0002	−0.0001
	(0.0003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.010)	(0.001)	(0.008)	(0.010)	(0.0003)	(0.0002)	(0.0004)
10-year sov. yield	0.092	0.415	0.446	1.181**	−0.403*	−0.164	−0.575	1.963	−0.186	1.574	−4.947	0.107	0.030	0.072
	(0.086)	(0.802)	(0.316)	(0.596)	(0.242)	(0.374)	(0.389)	(1.998)	(0.338)	(1.396)	(4.481)	(0.093)	(0.050)	(0.086)
NA	(0.003)	(0.011)	(0.010)	(0.009)	(0.006)	(0.010)	(0.014)	(0.052)	(0.013)	(0.131)	(0.098)	(0.002)	(0.001)	(0.002)
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	999	984	999	985	984	999	999	940	999	993	948	999	999	982
R^2	0.136	0.089	0.068	0.064	0.067	0.053	0.058	0.037	0.074	0.028	0.091	0.145	0.046	0.049
Adjusted R^2	0.025	−0.030	−0.052	−0.058	−0.055	−0.070	−0.064	−0.089	−0.045	−0.098	−0.034	0.035	−0.077	−0.076

Notes: *p<0.1; **p<0.05; ***p<0.01. Explanatory variables include the distance between actual CET1 ratio and the target, the number of quarters before target must be reached (*Horizon*), the bank's Return on Asset, Impairment ratio, Loan to deposit ratio, Net Interest Margin and log of TA (demeaned at the quarterly level in the cross-section), quarterly growth in real GDP and HICP, unemployment rate, credit demand index of the Bank Lending Survey and the interest rate of the Main Refinancing Operations of the ECB. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

Table A6: Impact of distance to target - pooled regressions without intercept

	Dependent variable:		
	CET1, FL	CET1, PI	RW
	(1)	(2)	(3)
Target dist.	-0.067^{***}	-0.053^{***}	0.070^{***}
	(0.017)	(0.016)	(0.025)
Target horizon	-0.0002	-0.0001	0.0001
	(0.0002)	(0.0002)	(0.0003)
Total Assets, log	-0.001^{***}	-0.0005^{**}	0.001^{*}
	(0.0002)	(0.0002)	(0.001)
Return on Asset	-0.012	-0.001	-0.092
	(0.087)	(0.086)	(0.163)
Credit ratio	-0.003	-0.002	0.007
	(0.004)	(0.003)	(0.006)
Impairment ratio	-0.013	0.006	0.003
	(0.011)	(0.012)	(0.039)
Provisions	-0.001	0.003	-0.063
	(0.060)	(0.059)	(0.061)
Deposit ratio	0.006^{**}	0.004^{*}	-0.0005
	(0.002)	(0.002)	(0.003)
TLTRO	-0.011^{***}	-0.009^{***}	0.013^{**}
	(0.003)	(0.003)	(0.005)
GDP	-0.013	-0.019^{***}	0.030^{**}
	(0.008)	(0.007)	(0.012)
HICP	-0.153^{***}	-0.123^{***}	0.019
	(0.050)	(0.047)	(0.100)
Unemployment	-0.0001	-0.00002	0.00000
	(0.0001)	(0.0001)	(0.0001)
10-year sov. yield	0.018	-0.041	-0.074
	(0.056)	(0.061)	(0.138)
EURIBOR	-0.001	-0.001	0.003
	(0.002)	(0.002)	(0.005)
Bank Fixed effects	No	No	No
Observations	999	996	984
R^2	0.088	0.079	0.064
Adjusted R^2	0.062	0.053	0.036

Notes: *p<0.1; **p<0.05; ***p<0.01. Pooled regressions without intercepts with change in ratios defined on the [0, 1] interval. Explanatory variables include the distance between actual CET1 ratio and the target, the number of quarters before target must be reached ($Horizon$), the bank's Return on Asset, Impairment ratio, Loan to deposit ratio, Net Interest Margin and log of TA (demeaned at the quarterly level in the cross-section), quarterly growth in real GDP and HICP, unemployment rate, credit demand index of the Bank Lending Survey and the interest rate of the Main Refinancing Operations of the ECB. All explanatory variables are lagged by one quarter. Errors clustered at the bank level.

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