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Stock market effects of ECB's Asset Purchase Programmes: Firm-level evidence

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HIGHLIGHTS

- We examine the impact of ECB's Asset Purchase Programmes on stock prices.
- Our objective are announcement returns of 2625 non-financial firms in the Euro-zone.
- We find increased cross-sectional variation of abnormal returns at announcement dates.
- Abnormal returns are positively correlated with leverage.
- Abnormal returns are negatively correlated with size and the market-to-book ratio.

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ABSTRACT

How do stock prices react to ECB's Asset Purchase Programmes? Using an event-study approach, we find substantial cross-sectional variation in a sample of 2625 non-financial firms in the Euro-zone. Announcement returns are positively correlated with leverage and negatively with size, consistent with a credit channel. Furthermore, announcement returns are negatively correlated with the market-to-book ratio, suggesting different exposures of value and growth stocks. These patterns are more pronounced once we only examine programme initiation announcements.

1. Introduction

In 2009, the ECB decided to engage in "Quantitative Easing" and launched the *Covered Bond Purchase Programme*, the first of a series of large-scale asset purchase programmes (APP). Over the years, this has developed into the *Expanded Asset Purchase Programme*, enabling the ECB to purchase marketable private- and public-sector securities up to a value of €80 billion per month (European Commission, 2015). While these initiatives provoked a controversial public debate,[1] the ECB argued that they would "help businesses across Europe to enjoy better access to credit, boost investment, create jobs and thus support[s] overall economic growth, which is a precondition for inflation to return to and stabilise at levels close to 2%".[2]

However, do businesses really benefit from such stimuli, and if so, which businesses? The literature associates large-scale asset purchases with various transmission channels (e.g. Viñals et al., 2013). However, the empirical evidence is – in particular when

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[1] See e.g. http://www.economist.com/node/21564245 (posted: 2012-10-06, accessed: 2017-11-20).

[2] See https://www.ecb.europa.eu/explainers/tell-me-more/html/asset-purchase.en.html (posted: 2016-03-31, accessed: 2017-09-25).

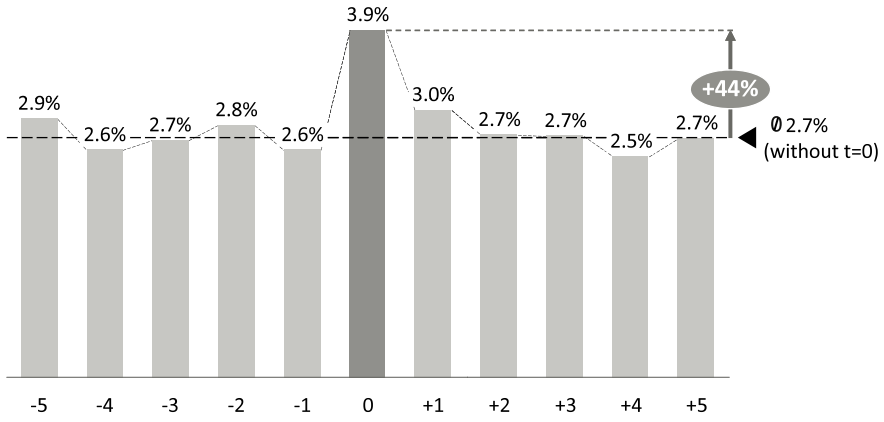

Fig. 1. Cross-sectional variation in daily stock returns. Notes: Standard deviation of abnormal returns synchronised around 14 APP announcements, as reported in Table 1.

Table 1
APP announcement events.

Date	Type	Programme	Scope	Volume(€bn)	Surprise	SD(AR)
2009-05-07	Initiation	CBPP1	Covered bonds	60	+23%	4.6%
2009-06-04	Details	CBPP1	Covered bonds	60	−1%	3.3%
2010-05-10	Initiation	SMP	Government bonds	unspecified	+31%	4.0%
2010-06-30	End	CBPP1	Covered bonds	60	+3%	2.3%
2011-10-06	Initiation	CBPP2	Covered bonds	40	+6%	3.4%
2011-11-03	Details	CBPP2	Covered bonds	40	+1%	2.7%
2012-10-31	End	CBPP2	Covered bonds	40	+1%	2.3%
2014-09-04	Initiation	ABSPP, CBPP3	ABS, Covered bonds	unspecified	+7%	2.1%
2014-10-02	Details	CBPP3	Covered bonds	unspecified	−3%	2.3%
2015-01-22	Initiation	PSPP	Government bonds	60 (monthly)	+5%	2.4%
2015-09-23	Details	ABSPP	ABS	unspecified	+2%	2.0%
2016-03-10	Initiation	CSPP	Corporate bonds	80 (monthly)	+3%	2.1%
2016-04-21	Details	CSPP	Corporate bonds	80 (monthly)	+2%	2.4%
2016-06-02	Details	CSPP	Corporate bonds	80 (monthly)	−2%	1.9%

it comes to the Euro-zone – scarce. Moreover, the few existing studies analyse aggregate portfolios or even stock indices and report mixed results (e.g. Haitsma et al., 2016). For instance, Rogers et al. (2014) find positive announcement returns for the German market. Haitsma et al. (2016) confirm this for EURO-STOXX-50 and Fratzscher et al. (2016) for banking sector and country indices. In contrast, Hosono and Isobe (2014) find negative returns for both STOXX-Europe-600 and EURO-STOXX-Banks.

An explanation for these contradictory results might be found in cross-sectional heterogeneity in firm-level responses. Indeed, cross-sectional variance of abnormal returns increases substantially around APP announcements, as Fig. 1 illustrates.

In this study, we examine cross-sectional heterogeneity in individual firms' share price reactions to ECB's APP announcements. Analysing the universe of listed non-financial EA-12 firms, we find announcement returns to be positively correlated with leverage and negatively with size and the market-to-book ratio.

We add to the literature along three lines: *First*, we are among the first to provide firm-level evidence of the effect of ECB's APP. Specifically, we extend and complement the descriptive portfolio-level patterns described in Haitsma et al. (2016). *Second,* we provide firm-level evidence of the *(bank) credit channel* being at work (e.g. Gambetti and Musso, 2017). Third, extending and complementing the results of Kontonikas and Kostakis (2013), we provide firm-level evidence suggesting a difference between the exposure of value and growth stocks to APP announcements.

The paper is structured as follows: Section 2 documents the data and describes the methodology. Section 3 provides empirical results. Section 4 concludes.

2. Data and methodology

We proceed in five steps. *First*, we identify ECB's APP announcements. Starting 2009-01-01 and ending 2016-06-30, we screen all ECB online press releases for the different programmes (SMP, CSPP, PSPP, ABSPP, CBPP1, CBPP2, CBPP3). Searching by programme name, we identify 14 events. Six are "initiation" events (programmes announced for the first time, two on the same day), while the remainder deal with programme details or completion.[3]

Second, following Hosono and Isobe (2014), Rogers et al. (2014), and others, we rely on asset prices to identify the (un)expectedness of central bank policy.[4] Specifically, for each event we calculate *Surprise* as the relative daily change in the spread between German and Italian 10-year government bond futures. For instance, on 2010-05-10 we observe a spread reduction from −1.53% to −1.05%, due to a drop (increase) in the Italian (German) 10yr government bond yield of 33 (15) basis points. This translates into a *Surprise* of +31% for that day. In line with Rogers et al. (2014) – and in contrast to Haitsma et al. (2016) – positive values of our *Surprise* measure represent an easing of monetary policy.

Table 1 provides a chronological list of all 14 APP announcements, including programme specifications and corresponding values for *Surprise* and *SD(AR)*, the latter representing the corresponding one-day standard deviation of abnormal returns (defined later in this section).

Third, we draw share price and accounting information from Datastream for all listed non-financial firms (SIC≠6000-6999)

[3] Selection details and additional empirical results are available from the authors' homepage.

[4] See Rogers et al. (2014) for a critical discussion of such an approach that cannot differentiate between different types of policies and relies solely on an indirect quantification.