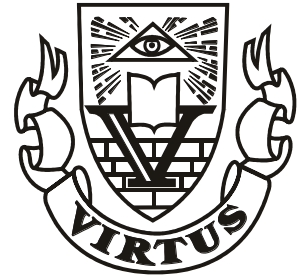


# CORPORATE OWNERSHIP & CONTROL

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# QUALITATIVE EASING AND RISK TRANSFER FROM CORPORATIONS TO CENTRAL BANKS

*Roberto Moro Visconti\**, *Maria Cristina Quirici\*\**

## Abstract

When economies face deflation and de-growth, Central Banks can only activate unconventional monetary policies.

Quantitative easing inflates the Central Bank balance sheet, printing money and adding liquidity to the system while qualitative easing modifies the asset composition. With qualitative easing, Central Banks absorb the risk, flattening the yield curve. Consequences for banks and corporate borrowers may be substantial.

Both measures increase inflation and reduce borrowing risk premiums, with an impact on company's balance sheet, widening economic and financial margins and decreasing the real value of debt. Corporate governance implications concern credit risk pooling, as well as (de)leverage, asset substitution and duration risk.

This paper provides unprecedented analysis of the impact of ECB unconventional monetary policy on Euro-zone governance equilibriums.

**Keywords:** Unconventional Monetary Policy, Inflation, Yield Curve, Default Risk, Asset Substitution, Leverage, Stakeholders

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## 1. Introduction and Literature Review

When the economy is characterized by low growth and feeble inflation (up to much- feared spiraling deflation), Central Banks cannot reanimate it with conventional instruments, such as lowering already rock- bottom interest rates. Unconventional measures, such as quantitative and qualitative easing (QQE), represent the controversial (Sinclair and Ellis, 2012; Martin and Milas, 2012) but ultimate chance to resuscitate growth, spurring investment, consumption and employment. Impact on governance stakeholders is substantial (Makin, 2014). Central Banks throughout the world have recently engaged in two kinds of unconventional monetary policies:

1. Quantitative easing, which is “an increase in the size of the balance sheet of the Central Bank through an increase in its monetary liabilities (base money), holding constant the composition of its asset”;

2. Qualitative easing which is “a shift in the composition of the assets of the Central Bank towards less liquid and riskier assets, holding constant the size of the balance sheet.” (Buiter, 2008; see also Ashworth, 2013). Qualitative easing involves credit easing if open market operations extend beyond treasuries.

The monetary policy “supply chain” of QQE has seldom been investigated in its entirety, being mostly limited to Central Bank igniting action or to intermediating bank reactions. Little if any attention has been dedicated to ending beneficiaries, such as corporate borrowers and their stakeholders.

These QQE programs raised a powerful wave of interest among academics that analyzed their different characteristics and effects mainly on their efficiency in affecting interest rates or financial markets. The literature considers empirical evidence from the Bank of Japan (Krugman, 1998; Gagnon et al, 2011, p. 36; Ugai, 2007; McCauley and Ueda, 2009), the FED (Doh, 2010; Krishnamurthy and Vissing-Jorgensen, 2011; Blinder, 2010; Thornton, 2012; Farmer, 2012b; Gagnon et al, 2011; Kawai, 2015) and the Bank of England (Joyce et al., 2010; Joyce et al., 2011; Bowdler and Radia, 2012; Lyonnet and Werner, 2012), also considering the late coming experience of ECB (European Central Bank, 2015).

This paper fills literature gaps, since most of the studies concern QQE impact from the Central Bank to the market (Farmer, 2012a; Farmer, 2013; Ashworth, 2013; Bagus and Schiml, 2009; Ellis, 2009; Farmer, 2012b; Fawley and Neely, 2013; Hofmann and Zhu, 2013).

As far as the authors are concerned, there are no studies that specifically address governance issues consequential to monetary policies such as QQE.

## 2. Research Question and Methodology

A topic which has never been adequately discussed, as far as the authors of this paper are concerned, focuses on the comprehensive governance implications of QQE measures on all the composite stakeholders involved. Along the monetary policy “supply chain”, they mainly concern:

1. Central Bank stakeholders (from governing bodies, sometimes supranational, as in the case of ECB, to single sponsoring countries and banks, up to ultimate stakeholders, such as citizens and in particular taxpayers);
2. Stakeholders related to intermediating banks (shareholders, debt-holders such as depositors, employees, government etc.);
3. Corporate stakeholders (again, shareholders, debt-holders, managers and other employees, customers and suppliers, government etc.).

The paper’s research question is concerned about how QQE ignited by a Central Bank may influence risk transfer from final corporate borrowers to Central Banks, through the intermediation of banks and other institutional investors.

The paper is structured as follows: an examination of the joint impact of QQE on monetary policy transmission shows the top criticalities, even in terms of governance, for Central Banks and intermediating banks. The

QQE impact on corporate borrowing is consequentially analyzed, considering the effect of increased inflation and depreciating exchange rates.

Evidence shows that corporate leverage decreases in real terms, along with duration shrinking. Risk shift from corporations to Central Banks may end up as a win-win scenario, unless opportunistic behavior is undertaken by irresponsible stakeholders.

This conceptual paper is innovative, even if dispositive factual information goes beyond the purpose of this conceptual paper. Debating arguments here investigated therefore need further empirical backing.

## 3. The Joint Impact of Qualitative and Quantitative Easing

### 3.1. Kick-starting the economy with helicopter money

The term “Quantitative easing” was for the first time introduced by the economist Richard Werner who proposed this kind of policy in Japan in 1994 (Werner, 1997), whereas “helicopter drop” is a metaphor, invented by Milton Friedman (1969), for unconventional measures such as printing large sums of money to jumpstart the economy during deflationary periods.

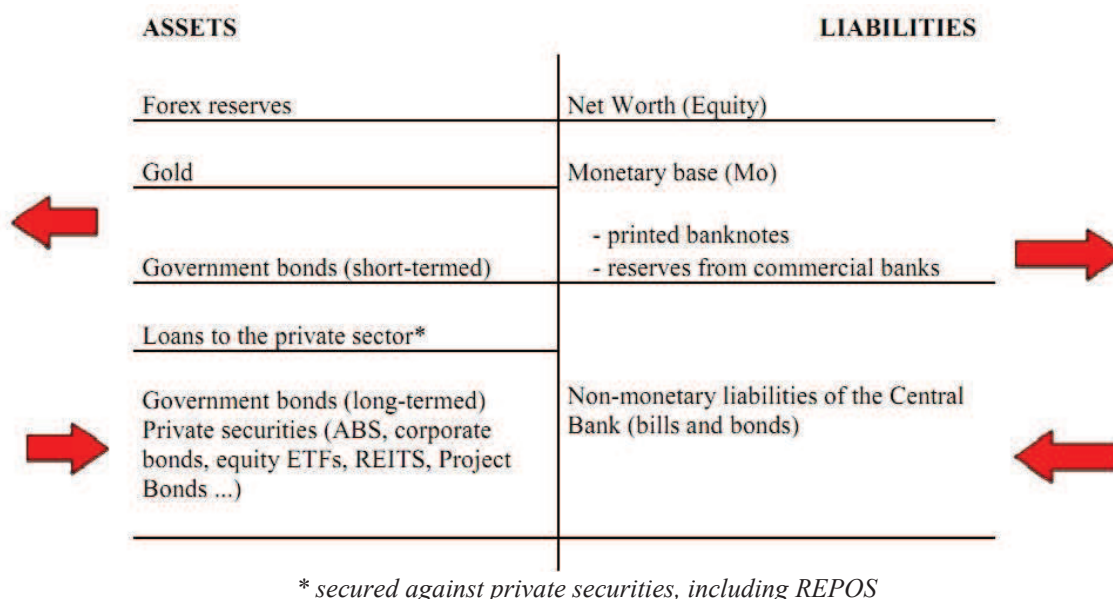
The Euro system expanded asset purchase program, announced on January 22nd, 2015 and starting on March 9th, 2015, consists of combined monthly purchases in the secondary market of EUR 60 billion in public and private sector securities under the Public Sector Purchase Program of marketable debt instruments issued by euro area Central Governments (European Central Bank, 2015). Figure 1 shows how the balance sheet of a Central Bank changes when quantitative easing measures are implemented.

ASSETS		LIABILITIES	
Forex reserve		Net Worth (Equity)	
Gold		Monetary base ( $M_0$ )	
		- printed banknotes	
Government bonds		- reserves from commercial banks	
<div style="display: flex; align-items: center;"> <span style="font-size: 3em; margin-right: 10px;">{</span> <div style="border: 1px solid black; padding: 5px;"> <math>\Delta</math> Government bonds                 </div> </div>			<div style="display: flex; align-items: center;"> <span style="font-size: 3em; margin-right: 10px;">}</span> </div>
<div style="display: flex; align-items: center;"> <span style="font-size: 3em; margin-right: 10px;">{</span> <div style="border: 1px solid black; padding: 5px;">                     Loans to private sector                 </div> </div>			<div style="display: flex; align-items: center;"> <span style="font-size: 3em; margin-right: 10px;">}</span> </div>
			<div style="display: flex; align-items: center;"> <span style="font-size: 3em; margin-right: 10px;">}</span> <div style="border: 1px solid black; padding: 5px;"> <math>\Delta</math> Monetary base (<math>M_0</math>)                 </div> </div>

Figure 1. Impact of Quantitative Easing (QE) on Central Bank balance sheet

Figure 2 follows quantitative easing policies and shows how the balance sheet of a Central Bank is qualitatively affected, due to strategies that modify the asset & liability structure. Arrows indicate

qualitative remix of assets and liabilities that increase or decrease. Even in this case, governance implications for the Central Bank stakeholders may be substantial.



**Figure 2.** Post Quantitative Easing re-composition of Central Bank balance sheet due to Qualitative Easing asset & liability substitution

Inflation grows as a consequence of Quantitative Easing, while risk premiums decrease as a result of Qualitative Easing. The effect of qualitative easing depends on its size. Whenever a Central Bank expands its balance sheet with Quantitative Easing, then it has more room for consequential Qualitative Easing. Their joint impact is so meaningful. QQE exceptional measures may be prolonged for years, as recent monetary policy history tells (starting with the Bank of Japan experience of the last twenty years). This is also because exit strategies, such as tapering, need to be fine-tuned to avoid destabilization.

### 3.2. Implications for Central Banks' Governance

The Central Bank, which carries on unconventional monetary policies, becomes a magnet of market risk, with long term stability targets.

The transmission channel that Central Bank can use is also represented by signaling, when it communicates to the market with its moral suasion its monetary policy intentions. With quantitative easing, the Central Bank signals its commitment to hold interest rates down and to increase inflation up to a fixed target. The signaling channel of monetary policy accordingly represents the effects of such a policy on short interest rates expectations. Qualitative easing flattens the yield curve, with a portfolio balance channel that makes long rates less segmented from shorter maturity rates, making asset substitutability less imperfect.

One core activity of each Central Bank consists in being a lender of last resort, whenever necessary, in order to avoid panic-driven runs to deposits. While this established function has hardly been activated in the past, during the big recession it has regained its importance.

QQE extends the liquidity to not-deposit-taking institutions and particular market segments. With QQE, Central Banks go beyond their traditional institutional boundaries, limited to banks and (borrowing) Governments.

ECB is a peculiar lender of last resort, since it is linked to its consortium local Central Banks, increasingly powerless, and then to the Euro banking system.

To the extent that ECB buys in the secondary market larger quantities of Government bonds issued by local Euro countries, it acts as a sort of ultimate lender, not exactly of "last resort", but still with an overarching status. Governance implications for market expectations (which contribute shaping the yield curve) and risk perception may be, once again, substantial.

Central Bank's governance is affected by both entry and exit QQE strategies. Exit strategies, such as tapering, harden monetary policies (Blinder, 2010). With QQE, the economy is somewhat "nationalized" and with exit strategies "privatized".

While information asymmetries are intrinsic governance characteristic of most corporations, Central Banks try to minimize them, in an effort to

influence the market with transparent intentions and unbiased expectations.

QQE policies increase leverage and asset exposure, eventually transferring their higher risk to their public stakeholders (Governments and citizens).

**3.3. A leaking aqueduct? Functioning and criticalities of monetary policy transmission**

QQE unconventional measures extend liquidity to banks and even to not deposit-taking institutions (such as pension funds or insurance companies), reaching unprecedented market segments.

The monetary policy transmission is faulty, as a consequence of severe imperfections which typically concentrate within banks. Imperfect transmission is

thus due to bank intrinsic weakness, such as asset deterioration, capital inadequacy, etc., resulting from an unprecedented recession.

With QQE policies, banks earn less due to flattening yield curve and consequent cheaper roll-over of short termed corporate loans, since companies can borrow longer and cheaper. On the other side, assets deterioration of banks softens, since they sell out risky loans to the Central Bank.

Other intermediaries, such as (pension or sovereign) funds, which have lower systemic links (and milder contagion risk), may play an increasing role, easing bank disintermediation and so approximating the Central Bank to the corporate beneficiaries (and their stakeholding households), thus shortening the monetary value chain.

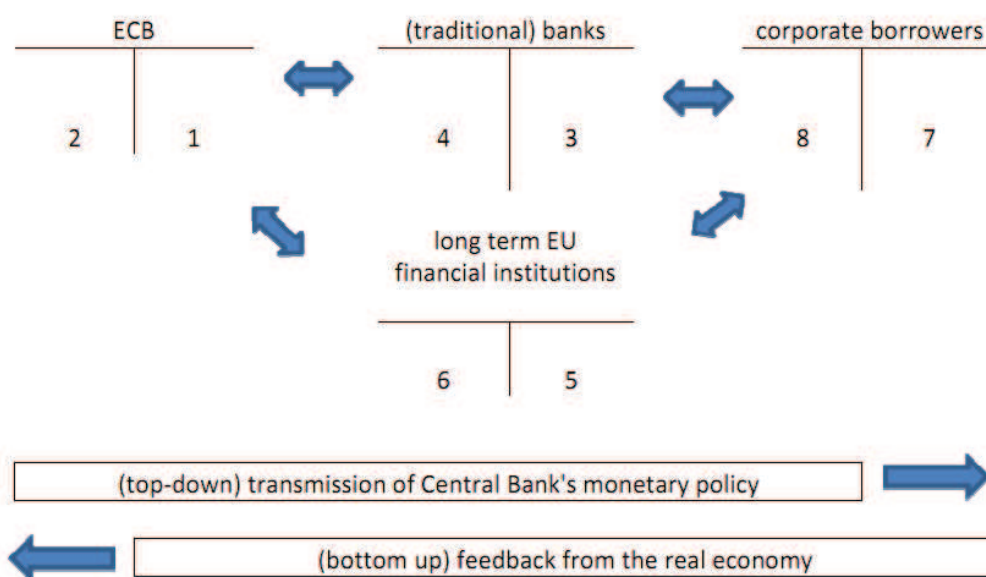


Figure 3. The monetary policy transmission chain

Flow chart sequencing	Description and sensitivity to QQE and other credit easing policies
1 - 2	Central Bank assets mainly consist of government securities and loans to member banks. Purchase of longer termed and riskier securities (Asset Backed Securities, Covered bonds, Project Bonds ...) flattens the yield curve and stimulates economic growth, reducing the risk and the duration of long-term investments. Within a QQE comprehensive strategy, inflation is expected to grow.
3 - 4	Asset quality and duration impacts on solvency capital, stressed by Basel III requirements. Sale to Central Bank or specialized intermediaries of senior loans or cross-guarantees on them softens capital requirements, unblocking further lending. Fixed vs. floating interest rate swaps reduce duration discrepancies, easing debt issue and underwriting.
5 - 6	Specialized long-term institutions (intermediaries willing to match their long-term debt maturities, such as pension funds, sovereign wealth funds, life insurance companies, etc.) have 'preferred habitats' and may invest in long-termed securities, interacting with Central Banks, traditional banks and / or private investors. QQE policies soften market frictions.
7- 8	Leveraged companies issue equity and subordinated loans (mainly underwritten by shareholders) and senior debt (underwritten by banks) to finance their investments. Cost of debt paid to sponsoring banks is highly sensitive to QQE policies. Corporations are generally unable to arrange for fixed versus floating interest rate swaps, unlike their sponsoring banks.

### **3.4. A mixed impact on intermediating banks: from easing to squeezing?**

QQE push down interest rates, making borrowing cheaper, and lower rates increase the price of outstanding bonds.

The impact on banks is two-folded:

1. With lower rates, banks decrease their interest rate margins but bear less credit risk (a forced choice towards Basel III);
2. Banks may sell out their bonds at higher prices, monetizing capital gains.

Another less trivial consequence is given by the flattening of the market yield curve, which makes long-term borrowing cheaper for corporations. Financial frictions between short and long-term rates reduce and so does imperfect asset substitutability. This maturity transformation may trigger disintermediation, making corporations less dependent on banks, as advocated by the ECB.

On their side, banks that typically borrow money repeatedly for short periods, while lending it out to long ones, may see their lucrative marginality undermined.

With QQE, the Central Bank buys risky assets from banks, improving their capital adequacy. The subsequent investment choices are not neutral. Banks may profit from the situation to pursue their own interests, fixing their problems instead of transmitting the monetary policy impulse to the real economy. Opportunistic behavior may so emerge as an undesired by-product of QQE policies, which so need to be correctly targeted and monitored.

It appears once again evident that these complex monetary policies asymmetrically affect all the stakeholders of the three top knots of the “monetary supply chain” (Central Bank ^ banks ^ borrowing corporations). Lower bank intermediation increases qualitative easing possible purchases from Central Banks.

The overall governance impact of accommodating monetary policy should also consider complex interactions, which go beyond the chain mentioned above.

Since qualitative easing (interacting with quantitative easing) flattens the yield curve and brings to an appreciation of (Government) bonds, it has an impact which goes beyond the balance sheet of intermediating banks.

The value of listed banks and other intermediaries such as insurance companies is sensitive to bond (re)pricing and has a chain effect on their market capitalization.

Banks and insurance companies typically represent a significant part of overall market capitalization of a Stock Exchange.

Stock prices are so indirectly sensitive to accommodating monetary policies. This is the case also because lower interest rates tend to increase

financial and economic margins of listed corporations, with a positive impact on their market capitalization.

Another impact, which concerns currency unions such as the Euro area, is on Government bond spreads among different countries. Local Central Banks buy 92% of the Government bonds issued by their countries, while “the ECB will hold 8% of the additional asset purchases” (European Central Bank, 2015, p. 18). Whenever the ECB buys higher quantities of Government bonds issued by each state, it pools risk, shifting it from single countries to their joint Central Bank. Although each state - who is an indirect shareholder of ECB, through its domestic Central Bank - is still responsible for its issued bonds, risk is however shared with other Euro partners.

The impact on the spread between Government bonds issued by each Euro-zone country is evident. Spreads between German Bunds and other weaker countries quickly narrow. Local Governments benefit from savings on debt service and may thus be more willing to cut taxation or stimulate the economy.

The impact on the various stakeholders involved, including ultimate citizens (especially taxpaying households), may once again be meaningful.

## **4. The Impact on Corporate Borrowing**

The joint impact of QQE is deemed to generate a potential significant effect on the balance sheet of corporate borrowers, with consequent governance implications.

In particular, the asset & liability management structure may be significantly affected, in a way that depends on the igniting monetary policy stimulus generated by the Central Bank’s action.

The monetary policy transmission described in par. 3.2 shows that the balance sheet of the Central Bank, increased in its size through quantitative easing and modified in its components through qualitative easing, has an impact on other entities. The monetary policy supply chain links Central Banks first of all to financial intermediaries such as banks or specialized funds (pension, sovereign or insurance funds, etc.). This link, synthetically described in par. 3., reshapes the balance sheet of financial intermediaries, again both quantitatively and qualitatively.

A third transmission stage is represented by corporations, which are not directly in contact with the Central Bank. This transmission can be biased by several inefficiencies, whose description goes beyond the focus of this paper. Despite these inefficiencies, there is anyway an impact on the balance sheet of private corporations, again both quantitative and qualitative.

The size of the balance sheet may change, for instance if corporations increase their raised and invested capital (borrowing more funds and investing them in further assets), with a quantitative impact.

The changes are however also qualitative, since, irrespectively of the total amount of the assets and

liabilities, there is an internal remixing, with strong governance implications. This paper, coherently with its title, is mostly concentrated on qualitative issues.

#### **4.1. From inflated revenues to deflated leverage**

It has already been shown that QQE measures affect crucial macroeconomic variables, such as interest rates (nominal and real), inflation and exchange rates.

These interactions bear crucial consequences on other related parameters, with a timing that is both actual and perspective, since also expectations change.

Nominal interest rates, composed of real rates + expected inflation, represent the market value of lent money, which is customized for each borrower adding suitable risk premium (interest rate spread levied by financial lenders).

The impact of quantitative and especially qualitative easing on the corporate cost of debt is variegated, and may be synthetically described by the following typical evidence:

- real interest rates may be almost unaffected by quantitative easing (evidence about this issue is controversial, even if the overall impact of the monetary policy chain to final corporate borrowers may typically be negligible);
- current and expected inflation is increased by quantitative easing;
- nominal risk-free interest rates may so typically grow, unless real rates decreasing compensates higher inflation.

Investment and consumption are stimulated by lower medium to long-term real interest rates, which are a function of average expected overnight rates, a term premium and expected inflation. These risk-free rates discount default-free Government bonds and shape the basic yield curve, whereas corporate debt rates incorporate a spread for default risk.

QQE decrease the term premium of interest rates but increases expected inflation.

The net result may even be an increase in nominal rates, since inflation growth typically outweighs real rate decrease. This may apparently sound like bad news for corporate borrowers. The reality is however usually different and has to consider several other implications.

The customized risk premium, represented by the corporate spread, is deemed to reduce, for several complementary reasons, such as:

- flattened yield curve, with consequent cheaper funding for longer maturities;
- abundance of funds available for lending (due to the monetary base growth, and consequent transmission of liquidity to banks) and loosening of capital rationing bottlenecks.

It should also be noted that there is a positive impact of inflation on both the income statement and

the balance sheet of borrowing corporations (Moro Visconti, 2012).

From an economic perspective, a company which is deemed to generate positive margins, so does because it expands the differential between indexed returns and expenses. This is the case whenever inflation affects both revenues and costs in a similar way: as a consequence, differentials such as EBITDA or EBIT or pre-tax profit should increase. EBITDA is a crucial parameter, since it is simultaneously both an economic and a financial margin; its importance in debt servicing is also well known. Since EBITDA is linked to the operating cash flow, as synthesized in Figure 4, it has a substantial impact on loan reimbursement capacity, for instance represented by parameters such as the debt service cover ratio.

Inflation so has a typical positive impact on both the income and the cash flow statement, unless it runs out of control - not a danger in the actual macroeconomic context.

However inflation has another, well known, positive impact on the liability side. Even if inflation has a mixed effect on debt servicing outflows (negative interest rates), it is undisputedly going to affect - for the better - the real value of debt for borrowers. The higher is the inflation, the lower is the real (deflated) burden of outstanding debt.

The joint impact of the economic and liability side effect of inflation surges may be significant for the company's stakeholders. Leverage is due to decrease in real terms, since the value of debt is lower, and its servicing easier. Equity may conversely grow, whenever improved economic margins bring to higher net income, unless it is distributed outside with dividends.

Corporate ownership and control issues are so sensitive to inflation changes (Moro Visconti, 2013) and QQE policies.

Even risk plays its part in this sequential redistribution pattern, ignited by monetary policy softening.

#### **4.2. Boosting growth with currency devaluations**

All currencies cannot be weak at the same time and currency wars ignite a mutual and vain race to the monetary bottom (Benassy- Quere et al. 2014).

The macroeconomic picture also has to consider the impact of QQE on exchange rates; generally QQE brings to a depreciation of the currency.

Currency devaluations are notoriously linked, through economic parities (Purchasing Power Parity, etc.) to inflation. For example, any currency weakening raised the cost of imported energy (mostly denominated in US\$), which in turn boost inflation.

Investors, policymakers and households always wonder about pros and cons of currency devaluations. QQE depreciates the currency, increasing inflation and decreasing real rates (comprehensive of risk

premiums). This brings to higher competitiveness, since devaluated goods are cheaper in comparative terms, but also to increased costs of imports. Economic margins might grow (unless import-sensitive costs are particularly significant or sales are mainly domestic) and with it inflation.

Good news in stagnating periods, not so when the economy is overheated, when the goals of increasing inflation and decreasing real rates (comprehensive of risk premiums).

Currency fluctuations may affect the balance sheet and the income and cash flow statement of corporations even more than inflation; this is often the case since any currency devaluation increases costs for imported goods and, conversely, boosts revenues linked to exports. Marginality mix is difficult to generalize, since it strongly depends on the nature of the company: whereas net exporters typically gain, importers suffer.

#### **4.3. Lower duration with higher inflation?**

The aforementioned chain impacts of QE on the economic and financial flows of a target company may better be understood considering their asset & liability implications.

In this context, duration - the sensitivity of financial assets' price to interest rate changes - plays a fundamental role. The first impact on the duration starts from the Central Bank. QQE shortens the duration of outstanding Government bonds, providing an incentive to the Central Bank to keep short-term real interest rates low, in order to avoid future capital losses.

Since duration is particularly sensitive to long-termed and fixed-rate loans with bullet repayments, it is mostly affected by monetary policy actions, such as QQE, which decrease the real value of repayments at maturity and have a qualitative change in the composition of interest rates, deputed to debt servicing.

It has already been shown that QQE rebalances market interest rates, increasing their inflationary component, but decreasing both the real rate of return and, especially, the risk premium (credit risk spread). This qualitative rebalancing is far from neutral, even in the case where total rates may end up unaffected due to counterbalancing trends. To the extent that the fixed component of interest rates falls and the floating part (market riskless rates, such as EURIBOR or LIBOR) grows, duration plummets.

This is the case because floating rates guarantee a theoretical of perfect indexation of debt prices, so sterilizing their volatility. Lower duration is a synonym of decreased risk, with a positive impact on economic margins and financial flows.

The governance implications are evident, even on a liability side (outstanding financial debt + equity), which is directly linked to debt-holders and

residual shareholders, following an absolute priority rule hierarchical payback.

Also assets are interested in this qualitative reshaping of their funding liabilities. Maturity matching becomes easier and likelier, since QQE flattens the yield curve (Krogstrup et al., 2012) and makes long-term borrowing cheaper. Corporations so find it easier to invest in long-term fixed assets matched by longer debt and increased equity.

It has already been shown that corporate leverage shrinks with QQE and this phenomenon has direct implications on (optimal) capital structure. According to Modigliani and Miller proposition I, the value of any company is irrespective of its debt and depends only on the stream of forecast operating cash flows, discounted at their Weighted Average Cost of Capital (WACC). QQE positively affects the parameters mentioned above, increasing the Operating Cash Flow (due to widening economic and financial marginality) and reducing its discounting WACC (interest rates are cheaper and risk premiums decrease). Corporate governance implications may become meaningful.

Since long-term borrowing becomes easier and cheaper for corporations, they can invest in riskier assets (such as intangibles), with higher strategic value.

#### **5. Interest Rates Decomposition and Corporate Governance Milestones**

The cost of long-term corporate debt is mostly influenced by QQE measures and represents the best funding option for growth-enhancing structural investments.

If long-term debt is fixed rated, then its duration peaks, being particularly sensitive to any yield curve flattening. The enterprise value of corporations (market value of equity + net financial debts) remixes, decreasing its leverage and becoming less risky. This circumstance creates new opportunities for reshaping the asset side.

Corporate cost of debt may conveniently be subdivided in its top constituent parts, in order to show their sensitivity to QQE.

Total default-free cost of long-term debt may be represented by EURIRS from 10 to 25 years. EURIRS incorporate overnight interbank rates such as EONIA. Euro overnight index average is the effective overnight reference rate for the euro.

EURIRS is comprehensive of expected inflation added to long-term real rates, which may be decomposed in EONIA + liquidity premium. Adding to this risk-free EURIRS rate the default risk premium, it is possible to proxy the corporate cost of debt borrowing (Kd):

$Kd = (EONIA + \text{yield curve slope [long - short term]} + \text{expected inflation}) + \text{default risk premium}$

Where:



- $(EONIA + \text{yield curve slope [long - short term]} + \text{expected inflation}) = \text{EURIRS}$
- $\text{Default risk premium} = (\text{country}) \text{ credit default swap (CDS)} + \text{company spread}$

The QQE monetary value chain, decomposed in its founding rates, is depicted in Figure 4.

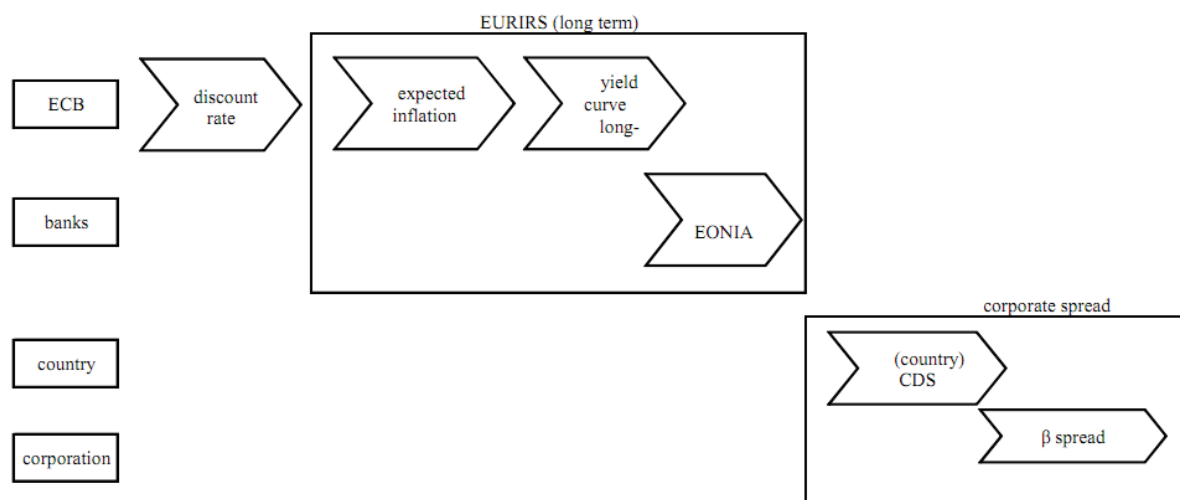


Figure 4. QQE interest rate chain

QQE leaves almost unaffected EONIA (since overnight rates are already close to their zero floor) while it reduces liquidity premium (due to the yield curve flattening). QQE also increases target inflation and contributes to decreasing corporate default risk (for the reasons seen in the preceding subparagraphs).

Liquidity crunch at any stage may puzzle the monetary policy transmission chain (see Baglioni, 2012, for interbank dysfunctions). Within the Eurozone, country risk is particularly sensitive to ECB monetary policy and so to QQE.

The fundamental insight is that when ECB adopts QQE measures and buys in the secondary market Government bonds of Euro countries, it absorbs and pools country risk. As a consequence, CDS spreads shrink, as well as differentials between Government bonds.

The cost of debt of each corporate borrower depends on the CDS of its country (even if globalization softens formal location issues), which is embedded in a (higher) default risk spread, adapted in order to consider the particular characteristics.

Default risk spread for each company is a tailor made parameter which embeds CDS and several other credit worthiness variables, such as:

leverage, asset composition (and collateral worth) and dimension;

cash flows and other financial and economic parameters (e.g. EBITDA, Debt Service Cover Ratio ...);

lending capacity of the (local) banking system;

macroeconomic variables (growth, employment, consumption, savings ...), even sensitive to QQE (interest rates, inflation and forex rate).

## Conclusions

This paper has shown that risk transmission from the real economy up to Central Banks, within QQE policies, is far from being a neutral policy.

Ideally, any risk transfer should aim to reduce overall vulnerability, transferring it to the part most professionally able to minimize it. In practice, this is not always the case, even because it is hard to monitor risk migration and concentration, especially when exceptional circumstances apply.

Following the QQE monetary policy transmission chain, which has inspired this paper, it emerges that (interest rate) risk is at least partially absorbed by Central Banks, within their unconventional attempt to stimulate moribund real economy.

This risk shift may be massive, as recent QQE policies have taught us (from Bank of Japan to Fed and Bank of England, ultimately followed by ECB). A trivial question may so arise: who pays for it? Ultimate stakeholders of Central Banks, financial intermediaries or corporations, are eventually represented by tax-paying households. The beginning and the end so ideally coincide, even if they are segmented by a long and imperfect transmission chain.

To the extent that risk absorption from Central Banks may not represent a free lunch, especially if payback chances deteriorate, taxpayers may be eventually called to fill the gap. This unpleasant situation may be avoided if the economy recovers, and debts can be duly served.

Risk transferred from corporations to Central Banks needs to be correctly detected, priced and monitored, avoiding opportunistic behaviors.

The unconventional QQE pill may be less than chemotherapy but much more than aspirin, and if it does not work, it is hard to use other measures.

Experience shows that monetary policy, alone, is however ineffective, unless it is properly combined with synchronized fiscal policies and national reforms. Lower taxation, made possible by budget cuts, may be positively associated with pro-growth unconventional measures.

Only if companies eventually succeed in increasing their taxable base, it can be said that soft monetary policy is effective. This is a win-win scenario, where all the stakeholders ultimately benefit from the improvements, reducing overall risk and kick-starting valueadding economic recovery.

Governance implications of monetary policy unconventional choices have so far received little if any attention from both practitioners and gatekeepers.

Avenues for future research may so be paved by further interdisciplinary scrutiny, jointly considering monetary policy macro events with their micro implications.

Research may well start from deeper investigation about proper functioning of financial intermediaries (from traditional banks to specialized pension / insurance / sovereign funds), the first culprits of the still unsolved financial crisis. Any (expensive) attempt to pour money into the real economy, easing Central Bank igniting stimulus has shown to be hardly useful, whenever banks have improperly used it to fix their ailing accounts.

Whereas a direct contact between the Central Bank and (financially illiterate) borrowing corporations is unthinkable, since banks still command vital intermediating functions, increased awareness about their faulty targets should be better monitored and, eventually, prevented.

Peripheral transmission of QQE within corporations (and households) needs further scrutiny. Innovative research avenues may thus derive from these broad and meaningful unsolved issues, in both theoretical and practical terms.

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