How do local governments respond to shocks? The role of anticipatory capacities and financial vulnerability

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Abstract

The increased uncertainty, volatility and complexity under which governments operate have put great emphasis on how governments respond to shocks and crises. Extant research has mostly studied the causes of and reactions to recent crises, some focusing on local government, with a relative paucity of research on how accounting is implicated in crisis responses at the organizational level. More research is needed to understand how accounting informs responses to crises and shocks influencing perceptions of organizational financial vulnerability and, more generally, affecting organizational capacity to anticipate shocks.

This paper builds on previous research on governmental financial resilience to understand how local governments' responses to shocks are shaped by organizational perceptions of financial conditions and the presence of anticipatory capacities. The concept of financial resilience has been shown to uncover internal capacities that act as shaping forces during crises, contributing to and informing "bouncing back" or "bouncing forward" response strategies. Based on a survey of over 600 local governments in Germany, Italy, and the UK, this paper looks at the role that anticipatory capacities, and associated vulnerabilities, play in determining organizational response strategies (bouncing back vs. bouncing forward) at times of crisis.

INTRODUCTION

The period following the financial crisis, which for many countries brought associated austerity measures, coincided with other environmental shocks with financial consequences and presents a valuable opportunity to study organizational reactions to shocks in a dynamic context. Recently, an emerging body of research has focused on how governments respond to crises, shocks, and austerity. The majority of contributions in this area have described, classified and explored types of governmental responses to the crisis (e.g., Kickert, 2012a, 2012b, 2012c, 2012d, 2013a, 2013b; Kickert and Ysa 2014; Overmans and Noordegraaf, 2014) and have

predominantly been developed within public policy, and public administration and management literature.

In spite of various calls for further research on the role of accounting in global financial crises (Hopwood, 2009; Arnold, 2009; Arnaboldi *et al.*, 2015; Miller and Power, 2013; Van der Stede, 2011), the accounting discipline has been less 'vocal' on this issue, with some notable exceptions (in particular, see the special issues edited by Chabrak and Gendron, 2015; Bracci et al., 2015; Hodges and Lapsley, 2016), which have highlighted either how accounting contributed to the crisis or fell short of indicating it (Amel-Zadeh and Meeks, 2013; Cooper, 2015; Gårseth-Nesbakk and Kjærland, 2016 and Richard, 2015), or, finally, how crises impact on accounting systems features (for example, Van der Kolk *et al.*, 2015) and more generally the roles of accounting under crises (on this, Chabrak and Gendron, 2015; Bracci *et al.*, 2015; Hodges and Lapsley, 2016). However, there is a relative paucity of research on how accounting is implicated in responses to crises adopting an organizational level of analysis, and exploring links between accounting, organizational capacities, and organizational responses to crises.

This paper adopts such stance by looking specifically at how governments' responses to shocks are shaped by accounting-related factors, including organizational perceptions of financial conditions and the presence of anticipatory capacities, ie, capacities that enable organizations to better recognize potential financial shocks before they arise (i.e. screening the environment, and in gathering, processing and reporting relevant information; see Ezzamel and Bourn 1990, p. 400). In linking those variables, resilience may prove a particularly useful conceptual lens, as shown by recent studies analysing how governments deal with the shocks and disturbances that affects their financial condition (see Sutcliffe and Vogus 2003; Weick and Sutcliffe 2007; Linnenlucke and Griffiths 2010; Davoudi 2012; Shaw 2012; Mamouni-Limnios et al. 2014; Barbera et al. 2015, 2017; Steccolini et al. 2017). Resilience is a multifaceted concept but two main features have been highlighted defining it. On the one hand, it refers to the capacity to react to crises, *bouncing back* to an original state (Boin, Comfort, and Demchak 2010: 8; Linnenluecke 2017: 6; Meyer 1982); on the other hand, it refers to the capacity to anticipate and cope with the unexpected, *bouncing forward* through the enhancement of, or development of new, capabilities (Meyer, 1982; Somers, 2009).

Our paper thus draws on a conceptual framework of governmental financial resilience based on multiple case studies of English, Italian and Austrian local authorities (Barbera et al., 2015; Barbera et. al. 2017), as well further reflections on other 8 countries, worldwide (Steccolini et.al. 2017). This framework explains how different patterns of financial resilience result from the deployment and development of internal anticipatory and coping capacities as

well as their combinations and interactions with environmental conditions and perceived financial vulnerabilities.

Building on these previous findings, the present paper aims to explore in particular those dimensions of resilience that relate and rely on accounting systems, and that have been highlighted as critical in previous accounting literature, ie anticipatory capacities (ie, internal capacities that enable organizations to better recognize potential financial shocks before they arise), andperceptions about financial vulnerability. We aim at exploring the roles played by such factors in driving and explaining different governmental responses to shocks. We decided to specifically focus on anticipatory capacityfor two main reasons. First, while extant literature has predominantly analyzed how local governments reacted to the shocks caused by the global economic and financial crises, it appears that much less attention has been devoted to how such organizations can anticipate shocks. Second, as with any kind of crises or shocks, the capacity to anticipate them may help organizations to better cope with them, and it may reduce the potential negative consequences on people and organizations, and more generally on society.

The research is based on a survey of German, Italian and UK local governments, the governmental level nearest to the citizens, which provide an array of 'tangible' services and thus directly impacts the quality of life of those they serve. The paper is structured as follows. The next section shortly reviews extant literature and presents the conceptual framework and underlying the hypotheses. Section three describes the methods. Section four presents the results. The fifth section discusses them and draws conclusions, also highlighting the implications for practice and research.

LITERATURE REVIEW AND HYPOTHESES

Prior literature

Since the 2008 global financial crisis, several studies have looked at how governments respond to crises, identifying types of responses (e.g., Kickert, 2012a, 2012b, 2012c, 2012d, 2013a, 2013b; Kickert and Ysa, 2014; Robbins and Lapsley, 2014) or organizational strategies (e.g., Cepiku *et al.*, 2016; Overmans and Noordegraaf, 2014; Raudla *et al.*. 2015) adopted to face shocks.

These studies have predominantly adopted a public administration and management view, while accounting research appears to have devoted much less attention to this topic, despite calls for more accounting studies to explore the role of accounting in global financial crises

(Hopwood 2009; Arnold 2009; Arnaboldi et al. 2015; Miller and Power 2013; Van der Stede 2011). Among the few studies that embraced these calls, those published in three special issues (ie., "The Global Financial Crisis", edited in CPA in 2015 by Chabrak and Gendron 2015, "Public sector accounting and accountability in an era of austerity: new directions, challenges and deficits", edited in AAAJ in 2015 by Bracci *et al.*, and "A private sector failure, a public sector crisis - reflections on the great recession", edited in Financial Accountability and Management in 2016 by Hodges and Lapsley) provide a picture on how extant accounting research has looked at the role of accounting in the face of crises.

In general terms, until now accounting contributions have highlighted that accounting may influence field dynamics surrounding a crisis, before and after its emergence (Chabrak and Gendron, 2015). To one extreme, Cooper (2015) analyzed the role of accounting in contributing to the crisis, showing how accounting can be an incubator of, and a medium which fosters, financial economic ideas. While similar positions are taken from Gårseth-Nesbakk and Kjærland 2016, and Richard 2015, opposite considerations emerge in Amel-Zadeh and Meeks' (2013) paper, which highlights that mark-to-market accounting has had limited influence on the perceived failure risk of banks. Both Cooper's (2015) and Amel-Zadeh and Meeks' (2013) contributions provide an example, from different perspectives, of those studies that have pointed out, or addressed, the "culpability" role of accounting.

Other contributions have focused on how accounting intervenes during or after shocks. For example, as a consequence of the global crisis, centralization has increased, whereby central governments have used accounting reforms and rules to exert stronger influence on local governments (e.g., Barbera *et al.*, 2017). At the same time, accounting has been at the center of processes to enhance the surveillance of the European Union or supranational institutions (see Heald and Hodges, 2015; Lapsley *et al.*, 2015). This second set of studies, thus, is more concerned with how accounting is used in response to shocks, or contributes to cause new shocks and constraints.

Interestingly, however, only limited evidence has been provided on how accounting contributes to anticipate shocks and crises (the above evidence concerning more how accounting contributed to crises, or *failed* to anticipate them) and how this affects and shapes responses to crises. Under this perspective, one of the richest contributions on the roles of accounting (accounting information systems) in organizations experiencing a financial crisis is the one published by Ezzamel and Bourn (1990) well before the recent crisis. The paper adopts an ex-ante, in-itinere and ex-post perspective by highlighting that, before a shock, accounting systems represent answer (generating) and/or learning machines which help to anticipate and

prevent crises by scanning the environment and gathering early warning indicators of crises. During the shock, accounting systems play as idea or dialogue machines: they can facilitate crisis management by enhancing organizational abilities to buffer the impact of crises and cope with them (see also Smart et al. 1978), e.g. by helping the organization to better identify ways to rationalize resources and exploit opportunities. Ex-post, accounting systems become again answer and learning machines as organizations need to improve their planning and control capabilities in order to better respond to future shocks. This study thus shows how organizational anticipatory capacities strongly rely on accounting systems. Since this study, there has been a paucity of contributions showing how this translates in practice, i.e. what roles accounting can actually play in anticipating shocks. The study conducted by Bezemer (2010) on the role of accounting models in understanding financial crisis can be considered an exception, from this perspective. Accounting models, here, are intended as "flow-of-funds" models, representing "households', firms' and governments' balance sheets and their interrelations. Based on the study of the analyses made by those professionals and academics who "saw the crisis coming", who issued public predictions of financial instability leading to recession, Bezemer identifies that they have in common the adoption of an "accounting approach". The latter, according to the author, should complement traditional economic models such as the WUMM equilibrium model in the US economy and the OECD's model to increase the capacity of economists to predict a crisis. As such, this study emphasizes the relevance of accounting as a medium to increase the capacity to anticipate shocks. However, it adopts a macro-economic approach. Conversely, our paper looks at how accounting, through its support to anticipatory capacities and the perceptions of financial vulnerability, affects local governments' responses to crisis.

In doing so, the paper builds on a conceptual model of governmental financial resilience (Barbera et al. 2017), which is discussed in the next sub-section.

Conceptual framework and hypotheses development

Following the aim of the study to explore to what extent different governmental response strategies are driven by perceived financial vulnerabilities or by internal capacities that enable organizations to better recognize potential financial shocks before they arise, we draw on the concept of governmental financial resilience (Barbera et al. 2015, 2017; Steccolini et al. 2017; building on Lengnick-Hall and Beck, 2005; Somers, 2009; Linnenluecke and Griffith, 2013a; Linnenluecke 2017; Nelson, Adger and Brown 2007, Davoudi, Brooks, and Mehmood 2013, Sutcliffe and Vogus 2003), to further develop the conceptual model shown in figure 1. Barbera

et al's (2017) framework of financial resilience suggests that government's ability to anticipate, absorb and react to shocks affecting their finances is the result of the interaction of environmental conditions as well as organizational dimensions. Such conditions and dimensions are discussed further in the sub-sections below, where hypotheses are advanced.

[Figure 1: Conceptual framework]

Responses to shocks (dependent variable)

Prior empirical research on governmental financial resilience has shown that in coping with shocks and crises, most organizations pursue a *bouncing back (i.e. buffering, downsizing, cutback)* strategy where the main activities comprise increasing taxes and fees, deferring investments, or reducing the costs, scope or size of the organization; or selling assets (Barbera et al. 2017, Steccolini et al. 2017). Beyond that, local governments that were described as self-regulatory or adapting, embraced rather a bouncing forward (i.e. repositioning strategy/reorientation) approach. The latter emphasize self-sufficiency, entrepreneurship and innovation by redefining the modes of service delivery and core activities, building partnerships with private developers, increasing networking as well as improving existing services or supplying new services either to current, or to new clients (Barbera et al. 2017; Steccolini et al. 2017). Different response strategies that have been extensively discussed in literature on how organizations respond to crises impacting on their financial conditions can also be traced back to these two broad directions (see Schendel et.al. 1976; Hofer 1980; Robbins and Pearce II 1992; DeGennaro et al. 1993; Cater and Schwab 2008; Boyne 2004, 2006; Lohrke et al. 2004; Beeri 2012).

From a resilience perspective, it may be expected that response strategies are influenced by external shocks, environmental conditions, perceived vulnerability, and anticipatory capacities (see figure 1). Extant empirical findings from qualitative studies suggest that the way local governments were coping with shock and crisis was determined by the magnitude or impact of the shock, constraining or favorable environmental conditions, and by different levels of perceived vulnerability and anticipatory capacity (Barbera et al. 2017, Steccolini et al. 2017).

This paper sets out to explore the respective roles of such factors in explaining the types of responses of local governments to recent shocks and crises.

External shocks are events that have significant impact on the finances of an organization, sometimes even materializing the threat of organizational failure. The impact can be direct, such as eroding tax bases, or indirect, e.g. due to natural disasters or changes in government policy (see Jones et al. 2017). The present study looks at three different external shocks, which have been mentioned across local government in eleven countries (Steccolini et. al. 2017): the global financial crisis, migration, and (change of) regulations. Much of the literature that has explored governmental responses to the global financial crisis shows that governments across the globe have been hit to a varying degree by the financial crisis, and that some have responded with only incremental, while others with more fundamental measures (see Peters 2011; Kickert 2012a, 2012b, 2012c, 2012d, 2013a, 2013b; Kickert et al. 2013). In recent years, migration has posed a significant challenge to European countries, but the immigration surge in 2015 has been a shock to German local governments in particular (see Eurostat 2015). Case studies of local governments in Germany, Italy as well as the UK have highlighted that regulations such as taxation limitations and devolvement of tasks (Barbera et al. 2017; Drew 2017; Papenfuß et al. 2017) can have unexpected and long-lasting impact on the local governments' finances. While we expect that their level of magnitude have a positive impact on both the implementation intensity of bouncing back as well as bouncing forward strategies, their effect size is less clear.

H1: Higher perceptions of external shocks are associated with higher reliance on both bouncing back and bouncing forward strategies

In resilience terms, *vulnerability* represents the exposure to shocks (McManus *et al.*, 2007). Being the result of external as well as internal sources, it lies at the interface between the environment and the organization (figure 1). Qualitative analyses of local government financial resilience have shown that it is the sense of being able to control the vulnerability and/or influence its sources that affects the way shocks are interpreted and subsequently tackled (see Barbera *et al.*, 2017). This study specifically looked at *financial vulnerability*, i.e. the *perceived* exposure to shocks that may affect local governments' finances. We assessed four key issues to analyze if local governments are in control of both external and internal financial vulnerability sources: financial autonomy, abundance of financial resources (fiscal slack),

level of indebtedness and volatility of own revenue resources (McManus *et al.*, 2007; Hendrick, 2011, Maher and Deller, 2011). Following the argument on external shocks, we expect that also the level of the perceived exposure to shocks will have a different effect on local governments' responses to the latter. In this regard, literature in the field of innovation suggests that financial constraints hinder specific types of innovation (e.g. service innovations). However, in the face of perceived financial difficulties, we also expect local governments to address them adopting short term cutback measures thus we expect that:

H2: A higher level of financial vulnerability is positively associated with bouncing back strategies (H2a), and negatively associated with bouncing forward strategies (H2b)

Anticipatory capacities are the tools and capabilities that enable local governments to better identify and manage their vulnerabilities and recognize potential shocks before they arise. As such, they are not limited to the existence of different types of accounting or management control systems but are also related to the cognitive aspects of situation awareness and sense-making (e.g. Lengnick-Hall and Beck, 2005; Weick and Sutcliffe, 2006; McManus *et al.*, 2007; Somers, 2009; Boin *et al.*, 2010; Linnenluecke and Griffiths, 2013a). Ezzamel and Bourn's (1990) study on the roles of accounting information systems in organizations experiencing a financial crisis suggests that accounting based processes like screening the environment, gathering, processing and reporting relevant information not only help in anticipating shocks and crises (see also Burchell et al. 1980), but also preventing future crises by learning from past ones and enhancing organizational planning and control mechanisms (accounting as 'answer and learning machine'). Amidst the crisis or after the immediate impact of the shock, accounting systems can facilitate coping (see also Smart et al. 1978), e.g. by helping the organization to better identify ways to rationalize resources and exploit opportunities (accounting as 'idea and dialogue machine' (Ezzamel and Bourn 1990. see also Mellemvik et al. 1988). Hence, the tools and capabilities that enable local governments to anticipate shocks and crises, and better identify and manage their vulnerabilities (in resilience terms, anticipatory capacities), also assist them in coping with shocks and crises. In this context, scholars investigating organizational resilience, or organizations through the lens of turbulence, also highlight an organization's environmental scanning capabilities, situation awareness, absorptive capacity, as well as integrating capabilities, which find expression in the exchange of information with a range of external actors; providing staff with sufficient information; as well as fostering an organizational setting that encourages problem analysis and information

sharing (Weick and Sutcliffe, 2001; Jansen *et al.*, 2005; Vogus and Sutcliffe, 2007; Ray *et al.*, 2011; Lee *et al.*, 2013; Whitman *et al.*, 2013; Paliokaite and Pacesa, 2015). Former studies in this field have shown that anticipatory, adaptive, and transformative capacities are complementary and appear to reinforce each other (Barbera et. al. 2017), while a heavy exploitation of buffering capacities (Wildavsky, 1988; Meier and O'Toole, 2009; Davoudi *et al.*, 2013) points to low levels of anticipatory capacities. We therefore assume that:

H3 (a-f): A higher level of anticipatory capacities (monitoring, information exchange, information sharing) is positively associated with bouncing forward (H3a-c) but not bouncing back strategies (H3d-f)

METHODS

The research builds on a survey of local governments in Germany, Italy, and the UK, complemented by an analysis of archival data covering financial and socio-demographic aspects.

The unit of analysis: local governments in Germany, Italy and the UK

All three selected countries are large economies and have local governments that are responsible for a wide array of similar services including, amongst others, social protection, education, economic affairs, housing and community amenities, public order and safety and health. They show however different financial vulnerabilities in terms of general government financial balances and gross financial liabilities relative to GDP (Lodge and Hood, 2012) and represent different administrative traditions (see the main features of the countries under analysis in appendix 1), with Germany being a representative of the Continental European administrative tradition, Italy being an example of a Southern European, and the UK of the Anglo-Saxon administrative tradition (Meyer and Hammerschmid 2010; Pollitt and Bouckaert 2011). In the UK, local governments have high levels of local political autonomy, however they are very closely administered by the respective centers of government (Wilson and Game 2011) in England, Scotland, Wales and Northern Ireland from a policy and fiscal point of view. As such the central level holds a very high degree of power and control. Local government expenditure in the UK is funded from a variety of national and locally collected sources. In England for example more than half (about 57%) of income comes from central grants (specific and general), with locally collected taxation (domestic and business) accounting for around 22%, charges from services around 13%, and other income (including capital receipts)

8% (2013/2014 data). UK local governments can borrow money, but within self-managed indicators. In Italy, local governments are allowed to raise both local taxes (the property tax represents the major revenue source) and fees from the services they provide, within the legal limits set by the central government. The ratio between local governments' own revenues (from tax and services fees and tariffs) and current revenues (tax plus services fees and tariffs plus transfers from other public sector organizations) was about 60.8% in 2013, According to the Italian audit body, despite this, they lack any real power to regulate the most important aspects of taxes, including the tax bases and rates. Since 2008, increasing constraints and financial limits have further reduced their autonomy and affected their finances and functioning. In Germany the principles of subsidiarity and local autonomy play an important role. Each Land can autonomously regulate the organization of local governments, thus there is high devolution in political and functional terms. However, allocation of resources is centralized: a great portion of revenues comes from revenue shares distributed by the federal level (17.6%) and state grants (around 35% of total revenues). Their main own revenue sources are own taxes (e.g., business tax, land tax) and service fees.

The questionnaire was administered online and respondents were asked to answer for their organization as a whole rather than sub-units within it. The questionnaire was sent to chief executive officers, chief financial officers and service managers (the service departments considered were social services, public works, culture and leisure) in local governments. Financial officers tend to own specific information on accounting tools, processes and rules, while the specific service managers are more aware of the shocks that affect the specific activities they manage and the related constraints. Chief executive officers tend to have an overall idea of events occurring within their organization due to their role of wider supervision. In general terms, the level of seniority of the respondents was chosen as it is more likely to have the required departmental/organizational wide view.

While the functions and services delivered by local governments are comparable across the three countries, the number of local governments providing them varies considerably. This is mainly due to the relative size of the populations served by local governments in each country. In the United Kingdom for example, successive structural change dating back to the 1970s has seen a reduction in the number of local government institutions servicing ever larger populations.

In order to provide a meaningful basis for comparison local governments included in the survey were identified based on a stratified sampling approach. The reference population in Italy and Germany is given by all the local government with more than 5,000 inhabitants. The

smallest LGS were excluded on the one hand to ensure to have a manageable number of responses, and on the other to consider that their being generally subject to different law requirements, and characterized by less developed financial management systems, as opposed to larger local governments. The reference population in Italy therefore includes 2,411 units while the reference population in Germany includes 2,880 units. Given the different distribution of local governments across dimensional classes, larger local governments are less represented than smaller ones in the whole population. As a consequence, to ensure satisfactory representation of both dimensional classes as well as efficiency, we propose to include in the sample all local governments with a population above 15,000, ie, 961 local governments in Germany and 737 in Italy. For local governments with a population under 15,000 probabilistic sampling (50%, considering their regional distribution) is applied (resulting in 960 local governments for Germany and 837 for Italy). The total surveyed local governments for these two countries would were 1,920 for Germany and 1,574 for Italy). In the UK, the administrative structure of local government is different from that in Germany and Italy, with the major comparable services concentrated in larger organizational forms covering larger population bases (average around 150,000 population). For the UK, all local authorities from three of the four regions[1] (a total of 408) were included in the survey, resulting in a total of 178 Unitary Councils (England 124, Wales 22 and Scotland 32), 27 English Shire Counties, 201 English Shire Districts, plus the Greater London Authority and the City of London Corporation. The email addresses were collected from the governmental websites as they are publicly available. To ensure the highest possible response rate, reminders were sent.

The received usable responses for the analysis come from 296 local governments in Germany, 264 in Italy and 60 in the UK.

Operationalization of variables

Based on an analysis of the literature on resilience, organizational capacities, and governmental financial management, as well as the qualitative groundwork put forward by Steccolini et al. (2017), the dimensions presented in figure 1 were operationalized. The questionnaire was developed and translated to ensure fit in the respective country contexts while preserving comparability. Appendix 2 shows how the resilience dimensions were operationalized, and Table 1 and Table 2 provides detailed information on the items that we used to measure each

[1] Northern Ireland was excluded from the study as local government here was reorganised in April 2015, and as such the period under consideration was not relevant to these very recently created organisations.

dimension). The factor analysis shown in appendix 3 reveals that responses load on two different types of strategies (i.e. bouncing back and bouncing forward), which were adopted by Local Governments during the last five years. A summative variable of each strategy reported acceptable Cronbach alphas (0.7). In addition to the survey data, archival financial data and published reports were used as sources for the analysis (Aida Pa database and the website of the Ministry of Interior that publish the main financial data for Italian LGs, based on year-end financial reports, for Italy, and in the UK Statistics Wales, Local Government Finance Statistics (Scotland) and the Department for Communities and Local Government (Statistics at DCLG – England). For Germany, the database http://www.wegweiser-kommune.de/ was accessed to obtain financial data for the years 2006-2015. We included three financial indicators as control variables– average debt level, investment ratio and current ratio – covering a ten-year period (2006-2015).

RESULTS

The results of factor analyses as well as descriptive statistics are presented in Tables 1 and 2. The next sub-section provides an overview of descriptive statistics and differences emerging across countries. The following sub-section discusses the results of the test of hypotheses, based on the regression analysis.

Coping with shocks across Italian, German and UK local governments

Table 1

Responses. As shown in table 1, the descriptive results for response strategies reveal that local governments in the UK perceive slightly higher implementation levels with regard to both types of response strategies.

Shocks. Looking at the perceived importance of different types of shocks in the three countries (i.e. global financial crisis, migration, change of regulations), mean comparisons showed that the perceived impact of the different types of shocks varied substantially across countries. While the global financial crisis was considered to be a major shock in Italy and the UK, it appears to have affected German local governments' finances to a significantly lesser extent ($p < 0.001$). The latter however seem to have been more substantially affected by migration

compared to the other two countries ($p < 0.001$). This result mirrors official data on Germany as the country with the highest number of first asylum applications (around 722,000 in 2016, according to Eurostat[2]). Local governments in all three countries perceive changing regulations as being important external shocks, however the impact reaches a peak in Italy ($p < 0.001$). This reflects the important role played by central policies in affecting local services, as well as issues related to processes of devolution of tasks and administrative responsibilities to the local level, which have taken or are taking place in all three countries, but seemingly affect Italian local governments more significantly.

Vulnerability. Table 2 shows that Local governments in the UK seem to identify a significantly lower level of financial vulnerability ($p < 0.05$) compared to those in the other two countries, While Local Governments in the UK perceive a relatively high financial autonomy, low volatility of own revenue sources, modest indebtedness, as well as a sufficient level of financial reserves to absorb small shocks, German local governments perceive the highest levels of financial vulnerability, highlighting in particular a lack of power over their revenue sources, and a lower availability of slack resources to tackle small shocks in comparison to those in Italy and the UK. Surprisingly, Italian local governments perceive themselves as significantly less vulnerable than their counterparts with regards to their level of indebtedness ($p<0.001$).

Table 2

Anticipatory Capacities. Anticipatory capacities (AC) become visible through different behaviors that assist local governments in gaining understanding of their environment in order to recognize potential disruptive events. The responses load onto three subcategories for anticipatory capacities, consisting of (1) exchange of information with external actors (e.g. upper government levels, service providers); (2) monitoring activities (e.g. national policies and regulations, citizen's needs, economic and socio-demographic developments) as well as (3) providing staff with sufficient information and fostering an organisational setting that encourages problem analysis and information sharing. The summative variables for each

[2] http://ec.europa.eu/eurostat/statistics-explained/index.php/Asylum_statistics (page last accessed on 19 July 2017 and last modified on 21 June 2017)

subcategory reported acceptable alphas, reaching Cronbach alphas higher than .7 in all cases.[3] The descriptive results for the subcategories are discussed below.

UK local governments appear to rely *overall* on significantly stronger *anticipatory capacities* when compared to their continental European counterparts ($p<0.001$). With regards to *information exchange*, exchanging information with peers (other local governments) appears to be particularly relevant for increasing understanding about the environment across all three countries. Here, local governments in the UK seem to be the frontrunners. They also regularly exchange information with upper levels of government, an aspect that seems rather unusual for Italian local governments. In contrast, German local governments exchange information with external service providers less regularly than with professionals such as consultants/tax consultants or accountants – the latter being a group that seems to play a minor role in Italian local governments.

With regards to *monitoring* the external environment, UK local governments appear to place more emphasis on this than their counterparts in the other two countries, particularly with regards to changes to national policies and regulations. The latter however seem to be the most important areas monitored by local governments also in Germany and Italy. This is particularly interesting when contrasting this result with the results on shocks, where regulatory changes have been identified as being less significant in the UK compared to the other two countries. Similar differences between the UK and its continental neighbours are shown also with regards to socio-demographic and economic developments, with Italy monitoring the latter to an even lower extent.

Information sharing seems to be quite diffused again in the UK, where local governments in particular view it as highly important that people have the information and knowledge they need to respond to unexpected problems that arise. If the latter arise, UK local governments seem also to pass on relevant information quickly across functions and hierarchical levels. German and Italian local governments, in contrast, report lower levels of such capacities in both cases. While information seems to be shared more freely across functions and hierarchies in the UK, German and Italian local governments do not report comparable levels. Much less emphasis seems placed on encouragement of staff to conduct a complete analysis instead of providing routine solutions in case of unexpected events – respondents in Germany and Italy

[3] Appendix 2 shows the results of the factor analysis for Germany and Italy. Due to the low number of responses from UK local governments (60), no factor analysis was applied and we only consider them in the descriptive analysis based on identified categories. However, the Cronbach alphas for each subcategory exceed .8, therefore also pointing to a high internal reliability.

report similar levels. UK local governments here again show a higher level, but this aspect of information sharing seems to be the least relevant for them.

Exploring and explaining the links among shocks, vulnerabilities, anticipatory capacities, and responses

In this section and in line with the main aim of the paper, we explore whether and to what extent governmental responses to shocks and crises are driven by different types of shocks and crises, financial vulnerabilities or by internal capacities that enable organizations to better recognize potential financial shocks before they arise. Table 3 presents the multiple regression models for the antecedents of the two types of responses described above, ie, bouncing back and bouncing forward. The models offered reasonable fit for a cross-sectional design. The bouncing back explained 29 per cent of the variance, and 20 per cent in the bouncing forward model.

[Table 3]

Table 3 shows that bouncing back and bouncing forward strategies were driven by different antecedents. While it turned out that all *types of shocks* show a positive association with both types of strategies, therefore supporting the hypothesis (H1) that higher perceptions of shocks will be related with higher reliance on response strategies, their significance varies. Migration shows the strongest effect in the bouncing forward model while regulation shows the strongest effect in the bouncing back model. Although being significant, the effect of the global financial crisis turned out as comparatively low in both models, barely reaching significance in the bouncing back model.

The main enablers of bouncing-back responses are the various sources of financial vulnerability, therefore supporting the hypothesis that higher financial vulnerability will bring about bouncing back (*H2a*). The results also show that, as hypothesized (*H2b*), financial vulnerability has a negative impact on bouncing forward strategies, but its effect is much weaker. Moreover, it turns out that the different dimensions of anticipatory capacity show a positive association with bouncing forward strategies of local governments (*H34a-c*). However, the impact vary, with information exchange showing the highest and information sharing showing the lowest but still significant effect. The association disappears when looking at their relationship with bouncing back strategies (*H3e-f*).

The regression models also reveal that Italy shows significantly lower levels of bouncing back and bouncing forward strategies compared to the other two countries. The controls suggest that both strategies were negatively associated with a positive current ratio covering a ten-year period, while the two other controls turned out as being non-significant.

DISCUSSION AND CONCLUSIONS

Our analysis, looking at local governments across Germany, Italy and the UK, aimed at exploring the roles of perceptions financial vulnerability and anticipatory capacities in explaining the type of responses to shocks.

The analysis shows that the perceptions on the most important recent shocks, as well as capacities for anticipating them, financial vulnerabilities and responses vary across the three countries.

In Italy and UK, local governments perceived the global financial crisis as the main *shock*, while Germany appeared to be more affected by migration. Changing regulations represents an important shock, particularly in Italy. Perception on *financial vulnerability* is lower in local governments in UK compared to perceptions within similar organization in the other two countries, with German local governments perceiving the highest levels of financial vulnerability. Three main *anticipatory capacities* helped local governments to gain a greater understanding of their environment and identify potential shocks: exchange of information with external actors, monitoring activities, and providing staff with sufficient information and fostering an organizational setting that encourages problem analysis and information sharing. Overall, these capacities appeared to be particularly developed in UK local government.

In exploring the links between external shocks, internal conditions and responses to shocks, the analysis shows that the reliance upon bouncing back and bouncing forward strategies is explained by different factors. Bouncing back strategies will be especially found in the presence of high levels of financial vulnerability. Conversely, the adoption of bouncing forward strategies is driven by the presence of strong anticipatory capacities (especially information exchange) and hindered by high levels of financial vulnerability. In looking at these results, it is worth noticing that the global financial crisis appears to have less explanatory power than other shocks, probably because, while remaining still relevant, its effect may be now fading away in the face of the emergence of new shocks. The association between migration and bouncing forward appears to be in line with views that the former phenomenon will require an overall reconfiguration of public services, whereas changes in regulations (which are associated with bouncing back), though seen as very relevant, appear to suggest that

such changes are seen as less wide-ranging and requiring less incisive interventions, or interventions that do not put into question the configuration of public services.

Most importantly, the results highlight that perceptions of high financial vulnerability are central in explaining especially reliance on bouncing back strategies, whereas local governments will be less likely to embark on bouncing forward actions if they perceive their financial conditions as difficult. Moreover, and conversely, they show the important role played by anticipatory capacities in explaining the adoption of bouncing forward strategies, whereas they do not appear to play a relevant role in explaining bouncing back strategies. This is an important finding in that it appears to suggest that bouncing back strategies may be the result of lack of foresight and the necessity to instantly cope with unexpected shocks, or shocks that the organization was unable to forecast and anticipate. On the contrary, bouncing forward strategies appears to be based on stronger anticipatory activities, such as monitoring and exchange of information. The analysis supports previous qualitative findings, as it appears that anticipatory capacities appear to reinforce adaptive, and transformative behavior (i.e. bouncing forward), also reducing perceived financial vulnerability, while heavy exploitation of buffering capacities may crowd out the development of other capacities needed to bounce forward, resulting in higher levels of vulnerability over time (Wildavsky, 1988; Meier and O'Toole, 2009; Davoudi *et al.*, 2013).

Our study has relevant implications for managers and policy makers as the results reveal the crucial role of different anticipatory capacities in enhancing re-positioning strategies of local governments. While bouncing back is strongly linked to the associated vulnerabilities, the implementation of bouncing forward strategies when facing difficult times turns out as being mainly dependent on the capacities identified above. This emphasizes the importance of developing wider anticipatory capacities within local governments (e.g., environmental scanning) as a key elements to cope effectively under difficult conditions, and to build and nurture a financial resilience culture.

The present study contributed to further developing and operationalizing the dimensions of financial resilience, and more specifically anticipatory capacities and perceived financial vulnerability, understanding their relevance for local government response strategies. The results of the survey of local governments in Germany, Italy, and the UK shows that, although they are located in different administrative traditions, similar strategies can be identified across the three countries. However, significant differences with regard to the levels of different capacities and vulnerabilities are traced out. The dimensions identified in the framework also allows local government actors to better reflect on their own sources and levels of

vulnerabilities and also understand what anticipatory and coping capacities they need to assess, nurture, and develop in order to anticipate, absorb and react to shocks affecting their finances over time.

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Figure 1: Analytical Framework

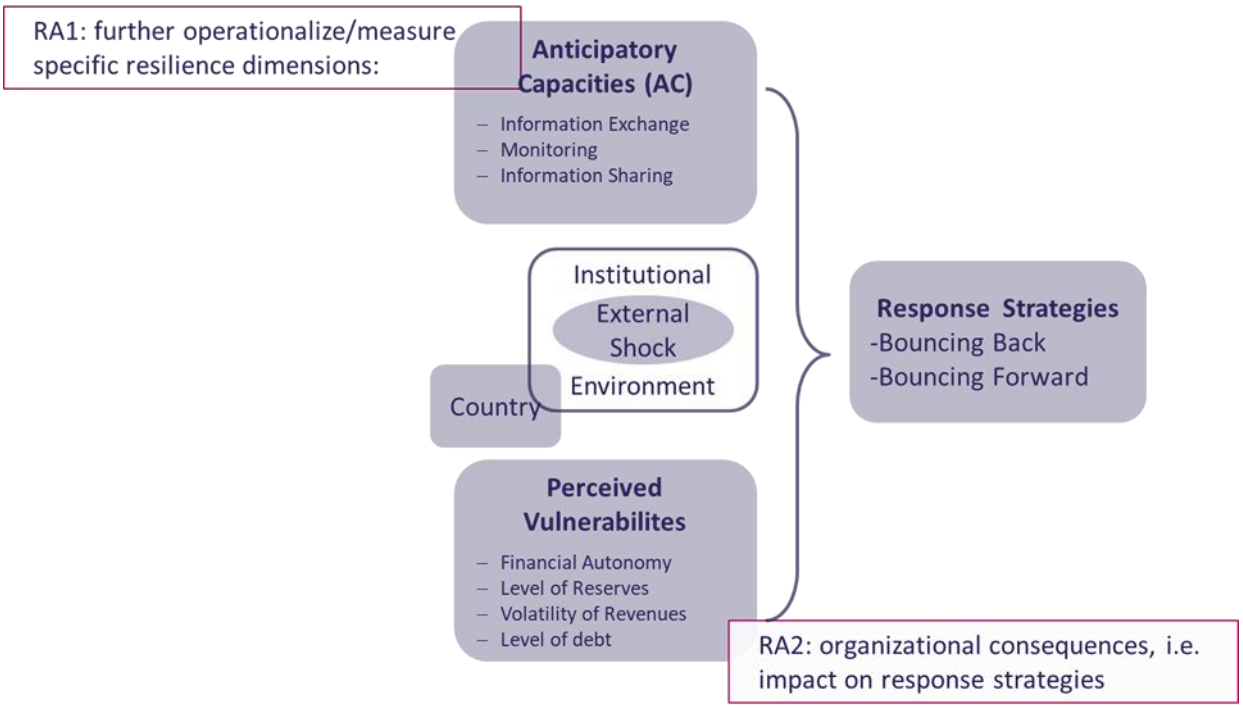

Table 2: Descriptive statistics: dependent and crisis variables

	Germany		**Italy**		**UK**	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Response Strategies						
Bouncing Forward	2.90	0.67	2.75	0.71	3.05	0.58
Bouncing Back	2.43	0.71	2.28	0.68	2.45	0.60
External Shocks						
Global Financial Crisis	2.71	1.04	3.73	0.94	3.92	1.00
Migration	2.79	0.99	2.43	1.12	2.25	0.95
Regulations (eg. changes in tax base, task devolvement)	3.29	0.93	3.82	1.01	3.23	0.96

Table 3: Vulnerability and Anticipatory Capacities, Factor Analysis and Descriptive

Rotated Component Matrix					Germany (n=295)		Italy (n=270)		UK (n=64)	
	1	2	3	4	Mean	Std.Dev.	Mean	Std. Dev.	Mean	Std. Dev.
V Debt level				0.797	2.67	1.40	2.15	1.25	2.44	1.11
V Volatility of own-revenue sources				0.548	3.11	1.05	2.93	0.91	2.78	0.90
V Level of reserves				0.805	3.28	1.20	3.00	1.04	2.05	0.84
V Autonomy				0.680	3.32	1.11	3.04	1.08	2.81	1.10
AC Information exchange with other local governments			0.623		3.61	0.88	3.62	0.84	4.08	0.76
AC Information exchange with upper levels of government			0.745		3.21	0.87	2.96	0.90	3.78	0.79
AC Information exchange with external service providers			0.683		2.74	0.86	3.00	0.92	3.58	0.77
AC regularly approach professional service providers			0.614		3.03	0.99	2.67	0.96	3.36	0.91
AC Monitoring changing national policies and regulations		0.649			3.70	0.93	3.65	0.82	4.27	0.51
AC Monitoring changing citizen's needs		0.689			3.51	0.84	3.31	0.82	3.84	0.62
AC Monitoring economic developments		0.847			3.51	0.91	3.08	0.86	4.00	0.62
AC Monitoring socio-demographic developments		0.843			3.53	0.93	3.20	0.88	3.95	0.63
AC people have the information and knowledge they need	0.753				3.42	1.04	3.61	0.82	4.00	0.40
AC Information is shared freely	0.857				3.30	1.09	3.37	0.87	3.83	0.72
AC relevant information is passed on quickly	0.837				3.58	1.07	3.45	0.90	3.94	0.71
AC people are encouraged to conduct complete analysis of problems	0.762				3.10	1.03	3.08	0.99	3.55	0.80
Explained variance	32.684	12.325	9.580	7.033						
Eigenfaktor	5.229	1.972	1.533	1.125						

Table 4: Results of regression analysis for response strategies (update)

	Response Strategies	
	Bouncing Back	**Bouncing Forward**
External Shocks		
Global Financial Crisis	.078*	.102**
Migration	.080*	.159***
Regulations (eg. changes in tax base, task devolvement)	.146**	.113***
Anticipatory Capacities		
Monitoring	-.024	.117**
Information Exchange	-.005	.172***
Information Sharing	-.017	.081*
Financial vulnerability		
High level of (perceived) financial vulnerability	.374***	-.129***
Controls		
Debt Ratio	-.007	.022
Investing Ratio	-.55	-.006
Current Ratio	-.132***	-.078**
Dummy UK	.052	-.083
Dummy Italy	-0.105**	-.166***
R2	.294	.201
Adjusted R2	.278	0.185
F	17.827	10.661

Note * p<0.1, ** p<0.05 and *** p<0.01 levels, respectively.

Appendix 1 – Germany, Italy and UK: Main features

	Germany	Italy	UK
Population in mio. 2013	80,523,746	59,685,227	63,905,297
GDP per capita in Euro 2013	34884,1	26958,1	31562,3
Administrative tradition	Continental European federal model	Contintental European Napoleonic/Southern Model	Anglo-Saxon Model
Level of decentralization	Federal	Unitary ("Quasi")	Unitary
General debt level in % of GDP 2013	82.4	145.5	105.4
General Fiscal balance 2013 as % of GDP	0.2	-2.95	-5.74
Financial vulnerability 2006 / 2012 (Lodge/Hood,2012)	Medium / Medium	High / Medium	Low / High
Local debt level in % of GDP (2013)	5.30%	12.30%	9.80%
Local debt level in % of Total Public Debt (2007/2013)	7.8/6.5	10.3/8.5	17.7/9.3
Local government profiles	North Middle European Group	Franco Group	Anglo-Group
No. of local governments (LAU 2 2013)	11,116	8,092	419
under 5000	8,236	5,681	
5001-15000	1,919	1,674	
15001-50000	779	590	18
above 50001	182	147	401
Sample	1,921	1,574	419
Local government expenditure in % of total government expenditure (2013)	16.3%	28.6%	25.1%
Local government expenditure by function in % of total local government expenditure			
General Public Services	18.1%	13.1%	8.0%
Public Order and Safety	3.4%	1.7%	9.2%
Economic Affairs	12.9%	14.2%	8.0%
Environmental Protection	4.4%	5.3%	4.2%
Housing and community ammenities	3.6%	4.3%	4.7% *
Health	1.7%	47.0%	1.1%
Recreation. Culture and Religion	6.7%	2.5%	2.6%
Education	15.9%	6.8%	29.1%
Social Protection	33.2%	5.0%	33.0%
Local government capital expenditure in % of total government capital expenditure (2013)	34.3%	58.9%	35.9%

Appendix 2 – The resilience dimension and their operationalisation

Dimension and definition	Operationalisation	Methods details and references
Shocks/ Environmental Conditions Environmental conditions comprise the institutional, economic, and social environment in which local governments operate. The focus of this study is on external shocks that disrupt the environmental conditions of local governments thereby impacting their financial condition.	– Global Financial Crisis – Migration – Regulations (e.g. changes in tax base, task	--
Vulnerability The extent of exposure to financial shocks and disturbances that may affect local government finances	– Level of indebtedness – Financial autonomy – Volatility of own revenues sources (e.g. taxes) – Level of financial reserves (fiscal slack)	Hendrick 2011, Maher and Deller 2011, McManus et al. 2007
Anticipatory capacities The availability of tools and capabilities that enable local governments to better identify and manage their vulnerabilities and to recognize potential financial shocks before they arise, as well as their nature, likelihood, timing, scale and potential impacts. In this regard, anticipatory capacity is not limited to the presence of systems in place to plan, control, and manage risks, but also related to situation awareness and sense-making.	– External information exchange – Monitoring – Internal information sharing	Amniattalab and Ansari 2016, Boin et al. 2010, Cohen and Levinthal 1990, Jansen et. al. 2005, Jaworsky and Kohli 1993, Jones 2105, Lee et al. 2013, Lengnick-Hall and Beck 2005, Linnenluecke and Griffiths 2013, McManus et al. 2007, Mott 1972, Paliokaite and Pacesa 2015, Ray et al. 2011, Somers 2009, Stephenson 2011, Weick and Sutcliffe 2001, Weick and Sutcliffe 2006, Whitman et al. 2013, Wicker et al. 2013, Youndt et. al. 2004
Response strategies The ability to deal with the impact of shocks and disturbances, becoming visible in times of disruption (shock) through strategies, reflecting, on the one hand, the capability to bounce back to an original state or, on the other hand, the ability to, bounce forward through the enhancement of, or development of new, capabilities emphasizing the capacity to reorganize as a response to, or in anticipation of, disturbances, alter or reinvent their strategies	– Bouncing back – Bouncing forward	Andrews 2010, 2011, Jimenez 2012, Overmans/Arnold 2014, Steccolini et. al. 2017, Barbera et. al. 2017, Meyer, 1982; Somers, 2009, Boin, Comfort, and Demchak 2010: 8; Linnenluecke 2017: 6; Meyer 1982)

Appendix 3: Exploratory factor analysis response strategies (ok)

All items were prefixed with: During the last 5 years, my local government….(1 = not at all; 5 = to a great extent)	Mean	St. Dev.	Rotated Component Matrix 1	2
Bouncing forward	**2.85**	**0.68**		
changed the way it delivers services	3.02	0.887	0.743	
changed the priorities of traditional activities	2.88	0.920	0.709	
changed its internal structure	3.07	1.079	0.544	
extended its existing services	2.66	1.040	0.739	
established new services	2.60	0.955	0.750	
Bouncing back	**2.37**	**0.69**		
reduced existing services	2.14	0.997		0.707
deferred/reduced investments	2.95	1.235		0.563
increased fees and charges for its services	2.69	1.005		0.654
liquidated assets in order to raise capital	2.21	1.062		0.542
eliminated some services	1.89	0.888		0.783
Eigenvalue			2.730	2.192
Explained Variance			27.298	21.921