Does it pay to have the euro? Italy's troubled politics and financial markets under the lira and the euro

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Abstract

There is a broad consensus that the quality of the political system and its institutions are fundamental for a country's prosperity. The paper focuses on Italy's troubled politics over the past 35 years and asks whether the adoption of the euro in 1999 has helped insulate Italy's financial markets from the adverse consequences of its unstable political system. We find that important political events, such as collapses of governments, resignations, elections and politically motivated terrorist attacks, have exerted a statistically and economically significant effect on Italy's financial markets throughout the 1970s, 1980s and 1990s. The introduction of the euro appears to have indeed played a major role in insulating financial markets from such adverse shocks. The findings of the paper therefore suggest another important economic dimension and channel through which Italy has benefited from the adoption of the euro.

Keywords: Euro; Italy; political economy; exchange rates; asset prices; financial markets; shocks.

JEL classification: F31; F33; G14.

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"On Friday Roberto Maroni, the Italian welfare minister, said that [the euro] had proved incapable of dealing with the problems of slow growth and high unemployment. "*Isn't it perhaps better to return, temporarily at least, to a system of a dual circulation of currencies (the euro and the lira)?*" he said in an interview in La Repubblica, the Italian newspaper. "*In Europe there is a virtuous example and it's Britain, which is growing and developing, maintaining its own currency.*"" The Sunday Times, 5 June 2005.

"*(...) the Italian economy, like the leaning tower of Pisa, should have toppled over long ago. The country has a huge budget deficit, high tax rates, tightly regulated labour markets and a notoriously unstable political system.*" The Economist, The flawed Reinassance. A survey of the Italian Economy, February 1988.

1 Introduction

The euro will soon celebrate its 10th birthday. The economic benefits of the euro for its member states has been analysed and emphasised extensively, in particular the resulting increase in policy credibility, lower interest rates, more stable financial markets and ultimately higher and more robust economic performance of the economies.[1] Yet there have also been critical voices about whether the overall benefits from the euro outweigh its costs, which some link to the elimination or at least curtailment of domestic policy autonomy in areas such as monetary policy, fiscal policy and exchange rate policy.

The present paper departs from the earlier literature and focuses on key political economy aspects of the euro adoption, which have not been dealt with in previous work on the costs and benefits of the euro. The key question addressed in this study is whether the euro contributes to insulating domestic asset markets and ultimately the economy from *shocks and instability of political nature*. We conduct an empirical exercise on data from Italy, a euro area country with an inherently weak and unstable political system. "Revolving door" governments (more than 60 in the postwar period)[2], political instability, scandal, and corruption have characterized Italian politics, although the country has nevertheless managed to sustain a strong economy and reach high living standards. In the most recent decade, political stability defined in terms of government duration appears to have improved, but this is seen by many observers as illusory since governments are based on fractious coalitions of several political parties that can paralyse government action.[3] There is significant evidence

[1] See, among others, Rose (2000), Baldwin (2006), Engel and Rogers (2004), Giannone and Reichlin (2006), Issing (2005), Lane (2006), Trichet (2005). See Mongelli (2005) for an overview of the issues.

[2] As we write, Italy is without a proper government and early elections in 2008 appear imminent.

[3] For a book length analysis on the fundamental reasons and consequences of Italian political instability see Ginsborg (2003). The lack of political stability has been reflected in a traditionally

in the literature pointing to a significant negative effect of political instability on economic growth (e.g. Alesina et al 1996). Some prominent Italian policy-makers have argued that the euro is an effective "shield" against financial turbulence and geopolitical risks (e.g. Draghi, 2007). Is the euro is indeed an effective shield against Italy's own political instability, in the sense that it helps insulate financial markets from adverse shocks that have a political origin from within Italy?

It should be noted that this question is clearly distinct from the literature that concentrates on the direct economic benefits from euro adoption, such as via the integration of financial market, increased credibility from a common monetary policy and tighter fiscal rules. The paper assesses whether Italy (and potentially other countries) have benefited from Economic and Monetary Union (EMU) through a different channel, namely by insulating its economy from its inherently instable political system.

We gauge this channel by analysing the effect of political developments and events on Italy's financial markets. We focus on financial markets (interest rates, equity markets and the exchange rate) because asset prices are the most accurate available measure of expectations about future economic prospects. The main innovation of this paper is to consider a broad set of events that may capture the notion of political instability.[4] In this paper we construct a novel database of a broad and comprehensive set of important political and other events that have shaped Italy over the past four decades, spanning the period 1973-2007. Events covered include political elections, the establishment of new governments, resignations, politically-related suicides, important referenda and politically-motivated terrorist attacks. We also include a number of other important events, such as major natural catastrophies, accidents, military confrontations and Mafia attacks. We are able to determine the precise day when these events occurred and were reported in the media so that we are able to identify cleanly their financial market impact. Many of the events we consider are purely exogenous to economic developments, which solves to some extent the endogeneity problem that political events may in part reflect economic developments.

Two main results stand out from the empirical analysis. First, political events in Italy have traditionally exerted a statistically significant and economically meaningful impact on Italy's financial markets: they have tended to substantially raise short-term interest rates, lower equity returns and depreciate the effective exchange rate of the lira. These effects also tended to have a lasting effect on markets. We identify what we dub the "rollercoaster" behaviour of Italian financial markets around the frequent

inefficient public sector. For example, according to Afonso, Schuknecht and Tanzi (2003), Italy scores well below the EU and euro area average on public sector performance indicators. Perhaps most tellingly, still in 2006 Italy had a very low score in the Political Stability index, the lowest in the OECD after Poland, Turkey and Mexico.

[4]Typically, in the literature political stability is measured by either the propensity to observe government changes (executive instability) or by measuring phenomena of social unrest (e.g. Alesina and Perotti 1996).

collapses and formations of governments.[5] We find that during the weeks around government collapses short-term interest rates, on average, rise by close to 40 basis points (b.p.), Italian equity markets fall by 5% and the lira depreciates. The formation of new governments then subsequently tended to have the opposite effect, but inducing only a partial reversal of those adverse effects by lowering interest rates and raising equity returns. Moreover, we find that Italian political turmoil has not only adversely influenced the level of asset prices, but has also raised significantly financial market volatility and uncertainty, specifically in periods following the collapse of governments when the country was without a formal government in place - which in some cases lasted up to four months.

As the second main finding, Italy's adoption of the euro in 1999 appears to have insulated financial markets almost entirely from the adverse consequences of political shocks. Although it is hard to date this structural break precisely, it seems to have occurred in close proximity to the introduction of the euro in 1999. Moreover, before 1999 there appears to have been little difference in financial market responses related to Italy's participation in the European exchange rate mechanism (ERM), or lack thereof. These results are robust to various sensitivity tests and extensions, such as when including macroeconomic controls or removing outliers from the sample.

Overall, therefore, the findings of the paper suggest that the euro has indeed played an important role in insulating financial markets from Italy's troubled politics. The results thus suggest another important economic dimension and channel through which Italy has benefited from the adoption of the euro. They also suggest that the conclusions reached for Italy can plausibly be extended to other countries, especially those with a traditionally weak and unstable political system. It should be added that the insulating role of the euro may entail not only benefits but also costs, especially in terms of a reduced responsiveness of asset prices to domestic events, which may reduce the disciplining role of financial markets to some extent.

The paper is related to two strands of the literature. One strand links political economy factors to financial market outcomes. Our results confirm previous empirical findings identifying a nexus between political news and asset price movements, for example in currency markets (see, e.g., Freeman, Hays and Stix, 2000). Several of these papers focus on the effect of elections and the political cycle on exchange rates (Bachman, 1992; Blomberg and Hess, 1997; Lobo and Tufte, 1998; Siokis and Kapopoulos, 2003) as well as the two-way nexus between exchange rate movements and government popularity (Bernhard and Leblang 2006). There is also a more limited literature on the impact on exchange rates of violent acts such as terrorism and war (Eldor and Melnick, 2004; Rigobon and Sack, 2005; Guidolin and La Ferrara, 2005).[6]

[5] Since 1973 there have been a remarkable 31 government resignations and new formations, with each government turnover taking an average of 35 days, and implying that Italy has been without a formal government for more than 3 years, or close to 10% of the time since the early 1970s.

[6] Moreover, Kugler and Weder (2005) analyse the role of unexpected world geo-political events

The second strand is the extensive work that has been undertaken on identifying and measuring the costs and benefits from joining a monetary union.[7] But the present paper is fundamentally different from both strands of the literature in that it concentrates on the question whether joining a monetary union helps a member of this monetary union which has a comparably weak and unstable political system insulate its economy from the adverse consequences of its domestic political instability. To our knowledge, the present paper is the first to address this issue, and its main contribution consists in identifying this channel and showing that it can be economically important and meaningful.

The paper is organised as follows. In Section 2 we introduce our novel database and describe the political and other shocks that we consider in our analysis. Section 3 discusses identification and the empirical methodology of the paper. The presentation of the empirical findings and various robustness and sensitivity tests follows in Section 4. Section 5 concludes.

2 Political news in Italy: 1973-2007

In this Section we list a series of events whose common thread is to represent unexpected shocks which increased (on a temporarily or lasting basis) political tension and instability in Italy. Some of them are intimately linked to the long-standing weakness of the political system in Italy; in other words, their nature and impact might have been different in a country with a more stable and solid political system. We focus strictly on Italian events and therefore we do not include international political news such as, say, the fall of the Berlin Wall or 9/11.

We divide the "political news" into *six* categories: (i) the elections of the national and European Parliaments; (ii) news affecting the formation and dissolution of national governments; (iii) terrorist attacks and killings with a political connotation or ramifications; (iv) natural catastrophies and accidents; (v) national political consultations (referenda); (vi) other events. We will describe how we collect data on these six categories in turn.

2.1 Political and European elections

During the period under consideration there have been 9 elections of the national Parliament: 20 June 1976, 3 June 1979, 26 June 1983, 14 June 1987, 5 April 1992,

on the the Swiss franc. Other papers focus on the effect of this type of events on stock markets, see e.g. Chen and Siems (2004) and Zussman and Zussman (2006). Fornari et al. (2002) analyse the impact of some political news on the exchange rate of the lira and the Italian long-term interest rate over the 1994-1996 period.

[7] For the pre-EMU literature see among others Giavazzi and Torres (1993) and Frankel and Rose (1997). See, in particular, Feldstein (1997) for a pessimistic assessment of the common currency. Among post-EMU contributions see Artis (2003) and Eichengreen and Frieden (2001).

27-28 March 1994, 21 April 1996, 13 May 2001, and 9-10 April 2006. Moreover, there have been 6 elections for the European Parliament:[8] 10 June 1979, 17 June 1984, 18 June 1989, 12 June 1994, 13 June 1999, and 12 June 2004.

Table 1 – Elections for the national and European Parliament in Italy, 1973-2007

Date	**Election**	**Outcome** (a)
20 June 1976	National Parliament	4.3 (b)
3 June 1979	National Parliament	6.9
10 June 1979	European Parliament	7.9
26 June 1983	National Parliament	3
17 June 1984	European Parliament	-0.4
14 June 1987	National Parliament	7.7
18 June 1989	European Parliament	5.3
5 April 1992	National Parliament	7.9
27-28 March 1994	National Parliament	R
12 June 1994	European Parliament	R
21 April 1996	National Parliament	L
13 June 1999	European Parliament	undecided
13 May 2001	National Parliament	R
12 June 2004	European Parliament	L
9-10 April 2006	National Parliament	L

Source: Wikipedia and Ginsborg (2003).

(a) The outcome is measured as the spread between the percentage votes for the Christian Democrats and the Communists (in the Lower House for the national elections) until 1992; after 1992, R denotes a victory of the centre-right and L of the centre-left.

The electoral system (at least for the national Parliament) was overhauled in 1993 following the outcome of a national consultation (see Section 2.6). Before 1993, the system was based on proportional representation and elections often resulted in a very fragmented political constellation in the Parliament, with however two large parties in competition with each other: the Christian Democrats and the Communists. The Christian Democrats were, until 1992, regularly the largest party with the exception of one election of the European Parliament in 1984.[9] In the empirical analysis, therefore, we make the rather crude simplifying assumption that, between 1973 and 1992, the centre-right (centre-left) wins if, in any national or European Parliament election, the spread in the Lower House between the Christian Democrats and the Communists

[8] The dates for these elections are obviously common across the European Union.

[9] This election is a kind of outlier since it followed the high-profile and unexpected death of the Communist Party's Secretary, Enrico Berlinguer, on 11 June 1984.

is above (below) the level in the previous national or European election.[10] By this standard, **Table 1** reports dates and outcomes of the elections for the national and European Parliaments in the period under consideration.[11]

After 1992, it becomes relatively straightforward to indicate the winner of the political elections: the centre-right coalition in 1994 and 2001, and the centre-left one in 1996 and 2006. The elections of the European Parliament were won by the centre-right in 1994, by the centre-left in 2004, with the 1999 election undecided.

2.2 Formation and resignation of national governments

Especially before the overhaul of the electoral system in 1993, national governments were mainly the result of fragile coalitions which often collapsed, especially in periods of economic and political stress. In the entire postwar period, there have been almost 60 different governments in Italy, namely approximately one per year. The members of the government, however, typically remained in office for considerable longer, albeit often with different roles.

Since the beginning of our sample period in 1973 there have been 32 national governments in Italy, i.e. a little less than one per year. No government has ever lasted for an entire legislature, although Prime Minister Berlusconi was in office during the entire XIV legislature, but with two different governments. **Table 2** reports the beginning and end of each government between 1973 and 2007. Note that the end date for each government is the time at which the government coalition collapses, the government resigns and consultations are started for the formation of a new government.[12] These dates are therefore those at which there is real news about the fate of a government and the need to build a new coalition for the next one. Therefore, the end period of each government does not coincide with the beginning of the subsequent one. The period between the resignation of the government and its actual demise (since the incumbent government remains in office for normal administration) has often been a period of significant instability, despite its rather frequent occurrence.

[10] We take the Lower House as more representative since the electoral base is larger (all citizens above 18 for the Lower House, above 25 for the Upper House, the Senate).

[11] Hence, we do not consider regional elections in this study. Although some of them have been important (for example, regional elections in 2000 brought down the D'Alema II government), it is difficult to argue that they have been *systematically* important.

[12] In Italy, according to the Constitution, this delicate process is the responsibility of the Head of State. On the day when the government resigns, the Prime Minister pays a visit to the Head of State and "gives back" his mandate to him.

Table 2: Formation and dissolution of national governments in Italy, 1973-2007

Government	Start	End	Government	Start	End
Andreotti II	26 June 1972	2 June 1973	Fanfani VI	17 April 1987	28 April 1987
Rumor IV	7 July 1973	3 March 1974	Goria	27 June 1987	11 March 1988
Rumor V	14 March 1974	3 October 1974	De Mita	13 April 1988	19 May 1989
Moro IV	23 November 1974	7 January 1976	Andreotti VI	22 July 1989	29 March 1991
Moro V	12 February 1976	30 April 1976	Andreotti VII	12 April 1991	24 April 1992
Andreotti III	29 July 1976	16 January 1978	Amato	28 June 1992	22 April 1993
Andreotti IV	11 March 1978	31 January 1979	Ciampi	28 April 1993	16 April 1994
Andreotti V	20 March 1979	31 March 1979	Berlusconi	10 May 1994	22 December 1994
Cossiga	4 August 1979	19 March 1980	Dini	17 January 1995	17 May 1996
Cossiga II	4 April 1980	27 September 1980	Prodi	17 May 1996	9 October 1998
Forlani	18 October 1980	26 May 1981	D'Alema	21 October 1998	18 December 1999
Spadolini	28 June 1981	6 August 1982	D'Alema II	22 December 1999	19 April 2000
Spadolini II	23 August 1982	13 November 1982	Amato II	25 April 2000	31 May 2001
Fanfani V	1 December 1982	29 April 1983	Berlusconi II	11 June 2001	20 April 2005
Craxi	4 August 1983	7 June 1986	Berlusconi III	23 April 2005	16 May 2006
Craxi II	1 August 1986	3 March 1987	Prodi II	16 May 2006	in office

Source: *Centro Studi sulla Resistenza*. Dates have been thoroughly cross checked with other sources. Note that each government is named after the name of the Prime Minister and the number of governments that this Prime Minister has presided over. For example, Andreotti II is the second government of which Mr Giulio Andreotti was Prime Minister.

2.3 Terrorism and crime with political connotation

Generally speaking there are three distinct periods in the history of terrorism in Italy. In the late 1960s and early 1970s terrorist attacks typically had a right-wing connotation, often entangled with deviant elements of the Secret Services. From the mid-1970s onwards, left-wing terrorist groups, most prominently the Red Brigades, came to the fore, although terrorist acts widely attributed to rightwing elements (often, it is argued, in connection with the Masonic lodge P2) continued. The culmination of the action of the Red Brigades came in the spring of 1978, when this armed group kidnapped and then killed Aldo Moro, then prominent politician of the Christian Democrats and five times Prime Minister. Finally, in the early 1990s a number of strikes by Mafia criminals captured the public attention, in particular the assassination of the well-known judges Giovanni Falcone and Paolo Borsellino in 1992. Over recent years, there has also been some limited resurgence of the activity of the Red Brigades, who for example killed an academic economist, Marco Biagi, in 2002. **Table 3** reports the main terrorist strikes in Italy during our sample period.

Table 3: Main terrorist attacks and crime with political connotation or ramifications

Event	Date	Presumed authors
Bomb attack in Milan police station	17 May 1973	R
Bomb attack in Piazza della Loggia	28 May 1974	R
Attack on Italicus train	4 August 1974	R
Pasolini murder	2 November 1975	-
Kidnapping of Aldo Moro	16 March 1978	L
Killing of Aldo Moro	9 May 1978	L
Murder of Mino Pecorelli	20 March 1979	R
Murder of judge Ambrosoli	12 July 1979	R
Murder of Bachelet	12 February 1980	L
Murder of Walter Tobagi	28 May 1980	R
Air disaster in Ustica	27 June 1980	?
Carnage at Bologna train station	2 August 1980	R
Publication P2 lists	20 May 1981	-
Murder/suicide of Roberto Calvi	17 June 1982	R
Murder of Dalla Chiesa	3 September 1982	M
Chinnici carnage	29 July 1983	M
Attack on train 904	23 December 1984	R
Murder of Ezio Tarantelli	27 March 1985	L
Fiumicino carnage	27 December 1985	-
Murder of Michele Sindona	20 March 1986	R
Murder of Salvo Lima	12 March 1992	M
Murder of Giovanni Falcone	23 May 1992	M
Murder of Paolo Borsellino	19 July 1992	M
Bomb attack in Via dei Georgofili, Florence	27 May 1993	M
Bomb attack in Via Palestro, Milan	27 July 1993	M
Murder of Massimo D'Antona	20 Mauy 1999	L
Murder of Marco Biagi	19 March 2002	L

Source: Wikipedia and Ginsborg (2003). For some events a precise attribution is impossible. In the last column we distinguish between leftwing terrorism (L), rightwing terrorism (R) and Mafia (M).

2.4 Accidents and natural catastrophes

During the period under consideration, there have been 9 major accidents and natural catastrophies. While these are not necessarily directly related to political news, they have been often followed by political debate and instability. The earthquake in the Southern region of Irpinia in 1981, where about 3,000 people died (up to 5,000 according to some accounts), is a very clear example of this; soon after the earthquake, accusations were raised that relief had not been properly administered, especially by

local members of the political sphere.[13] The major events and their dates are reported in **Table 4**.

Table 4 – Major natural catastrophes and accidents in Italy, 1973-2007

Event	Date	Victims (deaths)
Earthquake in Friuli	6 May 1976	965
Seveso dioxine contamination	10 July 1976	-
Earthquake in Irpinia	23 November 1980	2,914
Flooding in Stava	19 July 1985	268
Moby Prince collision	10 April 1991 (night)	140
Villafranca air crash	13 December 1995	49
Earthquake in Umbria and Marche	26 September 1997	11
Cermis accident	3 February 1998	20
Flooding in Sarno	5 May 1998	137
Fire in Monte Bianco tunnel	24 March 1999	39
Milano Linate air disaster	8 October 2001	118
Pirelli skyscraper hit by plane	18 April 2002	3
Earthquake in San Giuliano	31 October 2002	28

Source: Wikipedia, cross checked with other sources.

2.5 Other political consultations

The Italian Constitution allows the possibility to consult the public opinion on matters of general interest, with the exclusion of special topics like taxation and international Treaties and only to abrogate an existing law, not to propose a new law. This possibility has been often used in the postwar period, and a total of 63 such consultations have taken place. **Table 5** just reports the main consultations, notably those which have either been very prominent in the public debate, like the one on divorce in 1974, or affecting directly the political system, like the one in 1993 which abolished the proportional electoral system.

[13] The dioxine contamination in Seveso and the Cermis accident, where a US fighter jet accidentally severed a cable of a funicular in the Alps, killing 20 people, are also good example of accidents with significant political fallout.

Table 5 – Dates for main referenda in Italy, 1974-2007

Referendum	Date
Divorce	12 May 1974
Public order	11 June 1978
Abortion	17 May 1981
"Scala Mobile" (a)	9-10 June 1985
Electoral law and others	18-19 April 1993
Public employment and others	1 June 1995
Article 18 of Workers Statute	15 June 2003

Source: Wikipedia, cross checked with other sources.

(a) Mechanism of wage indexation to inflation, The referendum was promoted by the Communist Party.

2.6 Other events

Finally, **Table 6** below reports other events that may be characterised as important political news. Such are the resignation of the Head of State Giovanni Leone in 1978, due to a scandal; and a few topical events in the judiciary enquiry in 1992-93 on the corruption of political parties, "Tangentopoli", culminated in the suicide of two well-known industrialists, Gabriele Cagliari and Raul Gardini.

Table 6. Other important political events, 1973-2007

Event	Date
Resignation of Head of State Leone	15 June 1978
Sigonella confrontation between Italian police and US troops	10 October 1985
Lybian rockets on Lampedusa island	15 April 1986
Arrest of Mario Chiesa	17 February 1992
Mr Craxi resigns from PSI	11 February 1993
Parliament denies inquiry authorisation for Mr Craxi	29 April 1993
Suicide of Gabriele Cagliari	20 July 1993
Suicide of Raul Gardini	23 July 1993

Source: Wikipedia and Ginsborg (2003), cross checked with other sources.

3 Empirical methodology

In this section, we describe the construction of the political event database (section 3.1) and the empirical methodology (section 3.2) for our analysis.

3.1 Classification of political and other events

Concerning the construction of the event dummies for the political and other news described in Section 2, we build a composite dummy D_t which takes value of 1 on any day when an event took place, and zero otherwise. This variable can be decomposed into 7 individual event dummies:

$$D_t = D_t^{el} + D_t^{T} + D_t^{cat} + D_t^{ref} + D_t^{sgov} + D_t^{cgov} + D_t^{o} \tag{1}$$

where D_t^{el} is a dummy variable related to elections, itself being

$$D_t^{el} = D_t^{el,R} + D_t^{el,L} \tag{2}$$

depending on whether the election was won by the centre-right (R) or the centre-left (L) (see Table 1); D_t^{T} captures terrorism and other attacks with political connotation (see Table 3), where

$$D_t^{T} = D_t^{T,P} + D_t^{T,M} + D_t^{T,u} \tag{3}$$

distinguishing between politically motivated attacks, Mafia attacks and unattributed acts; D_t^{cat} refers to natural catastrophies and accidents (see Table 4); D_t^{ref} are political referenda (Table 5); D_t^{sgov} refers to the formation of national governments, D_t^{cgov} to the collapse of governments (see Table 2); and D_t^{o} is for other important political news (Table 6).

As several of these individual types of events comprise relatively few observations, it may be difficult to extract any meaningful, statistical evidence about their effect on financial markets. One approach for reducing this small-sample problem is to group different types of events into larger categories. To do this, it is important to formulate hypotheses of how one would expect these various events to influence financial markets. More specifically, we group these seven types of events into three categories.

The first category is political events which we would expect to have a negative effect on markets (or what we will below refer to as "political events - negative"). This category comprises government collapses and other adverse political events - such as the resignation of the head of state, politically linked suicides or military confrontations. The second category captures political events for which it is ambiguous whether they should a priori have a positive or a negative effect on markets and the economy. This includes the formation of a new government, referenda and elections. Whether such events are positive or negative in terms of their market impact depends on a number of factors, which are hard to predetermine. We will therefore refer to this category as "political events - ambiguous". Finally, the third category captures other events "external " to the *direct* political sphere and influence of the Italian state ("external events"), such as terrorist attacks and natural catastrophies.

A crucial point, and one that is illustrated in this discussion, is that events should have an impact on financial markets only to the extent that either they come unexpected for market participants or they change the degree of market uncertainty. For

instance, the formation of a government could be "good" news and be reflected in a positive market reaction if investors believe that such a formation will improve the economic outlook or reduce uncertainty. But it may equally have a negative market effect if markets are sceptical, or had expected a more favourable political constellation. This point is important to keep in mind throughout the paper as it is essential for grasping why markets may react to certain events but not to others. The point is also important for understanding the classification of the seven event types into three categories. The argument applies fully to the second category of what we label "ambiguous political events", which comprises the formation of new governments, referenda and elections.[14] The timing of elections and referenda are well known in advance, markets form expectations about their outcome and hence the effect on asset prices crucially depends on how the outcome differs from those expectations. However, the argument applies much less to the first and third categories. Terrorist attacks and natural catastrophies are highly unpredictable, and even collapses of governments may not or at least not be fully anticipated by financial markets.

Hence our theoretical priors for the first and third categories is that they affect markets adversely, i.e. lead to a depreciation of the lira, a decline in the stock market and a rise in short-term interest rates, while our prior for the second category is that such events should have *no systematic* effect on financial markets - though of course individual events in this category may have an impact. In total, we have 131 events in our dataset; 39 in the first category, 52 in the second and 39 in the third.

3.2 Empirical model

Turning to the empirical model, we are interested in whether and how Italian events D_{kt} affect Italian asset returns r_t and estimate

$$r_t = \mu + \alpha r_{t-1} + \sum \beta_k D_{kt} + \sum \gamma_j z_{jt} + \varepsilon_t \tag{4}$$

with z_{jt} a vector of controls, which includes day-of-the-week effects and also other type of shocks and news such as Italian macroeconomic announcements. We focus on daily returns for three asset prices: the effective exchange rate, short-term interest rates and stock returns.[15] Our prior is $\beta_k > 0$ for interest rates and $\beta_k < 0$ for stock returns and the exchange rate, i.e. adverse shocks should raise short-term interest rates, lower stock returns and depreciate the lira. The vector of controls also includes the corresponding external asset price, i.e. the short-term interest rates in

[14] We have tried to control for expectations for elections by distinguishing the outcome of the elections from prior expectations derived from opinion polls. However, the empirical results below change little when using this unexpected component.

[15] We do not include bond yields in our analysis; partly due to the difficulty of how to interpret the response of long-term yields to shocks - which may either reflect a change in inflation expectations or in expectations about the economic outlook or in monetary policy - and partly due to the lack of a sufficiently long time series for the analysis.

German/euro area for the model for Italian interest rates; and world equity returns for the model of Italian equity returns. We decided to include these controls so as to ensure that our estimates for the effect of Italian events do not partly capture contemporaneous shocks elsewhere.

Daily asset returns exhibit heteroskedasticity, i.e. $\varepsilon_t = N(0, \sigma_t^2)$, and also skewness and kurtosis which need to be accounted for. Moreover, the events may not only affect the first moment of asset prices but also influence their conditional volatility. This conditional volatility is modelled in an ARCH framework, more precisely an exponential GARCH (EGARCH) specification following Nelson (1991). We will turn to discussing these volatility results in the robustness section 4.4.

For the construction of the empirical specification, it is important to take into account Italy's involvement and commitments in the exchange rate mechanism (ERM) of the European Monetary System (EMS). **Table 7** provides a history of Italy's exchange rate policy since the breakdown of the Bretton Woods system in the early 1970s, leading up to the adoption of the euro in January 1999. The table underlines that Italy underwent a number of changes in its exchange rate regime; most notably, it joined the EMS in March 1979, moved to a soft peg in February 1987 (and a narrower peg of +/-2.25% bands around its central parity in February 1990), then was forced to exit the ERM in September 1992, before rejoining it at wider bands in November 1996.

These changes in Italy's exchange rate regime are important because they are likely to influence how various asset prices have reacted to shocks. In particular, under a pegged exchange rate regime, the exchange rate of the lira has little room to respond to shocks, and instead short-term interest rates may have to adjust relatively more in order to maintain the peg. This has been formalised in a standard UIP setting and target zone models (e.g. Bertola and Caballero 1992). In section 4.2, we will investigate how financial market responses change depending on the exchange rate regime, and relatively to the period since Italy adopted the euro.

Moreover, another related issue is whether to analyse the response to shocks by the lira bilateral rate against the Deutsche Mark (DM) - the EMS anchor currency - or in effective terms. We decided to use the nominal effective exchange rate (NEER) of the lira for two reasons.[16] First, the overarching question of our analysis is whether Italy's adoption of the euro has made Italy's financial conditions and asset prices more immune to adverse political and other shocks emanating from within Italy. This means that we are not only interested in the bilateral lira exchange rate vis-a-vis the DM, but more generally in changes to Italy's terms of trade against all countries. Second, using the NEER enables us to take into account that Italian events may move not just the lira within the ERM, but could in some instances may move all currencies with the ERM against outside currencies such as the US dollar.[17]

[16] Note that since we are using data at the daily frequency it makes sense to use nominal, rather than real exchange rates.

[17] However, note that all of the analysis presented below has also been conducted for the bilateral

As to the financial market data, given the daily frequency of our news events, our empirical analysis is conducted using daily financial market data. The sources of the data are the BIS for the effective exchange rate and Datastream for interest rates and stock returns. Interest rates are 12-month interbank rates, and equity indices are Datastream market indices. Short-term interest rate data is available only since 1 September 1977, thus shortening the sample for this series somewhat. Quotes for all are European closing quotes. This raises the difficulty that events sometimes occur or are reported only in the evening after the closing of financial markets. Others, such as elections, usually take place on a weekend. In those cases where we could verify that events took place in the evening or on weekends, they are included in the empirical analysis on the subsequent business day. **Figure 1** plots the three series, together with German or euro area short-term interest rates in Fig. 1.A, with world stock returns in Fig. 1.B, and the bilateral lira/DM exchange rate in Fig. 1.C.

4 Results

Our main interest is to understand how Italy's political and other events have affected Italy's exchange rate and other asset prices throughout the decades; and in particular, whether there has been a change and structural break with the introduction of the euro. This section starts by presenting the benchmark results (section 4.1) before discussing dynamic effects (section 4.2), the results for the importance of the introduction of the euro (section 4.3) and concluding with various robustness tests (section 4.4).

4.1 Benchmark results

Do Italian political and other important events have a marked impact on financial markets? To get a first feeling for the characteristics of the data, **Figures 2** and **3** plot the distributions of the three asset price returns in terms of their (Gaussian) kernel densities. Figure 2 shows the kernel densities on days with events, for the composite dummy D_t for all events against the asset price returns on non-event days. Figure 3 breaks down the event days into those with adverse political events and those with external events. Overall, the figures show that event days are markedly different from non-event days. Asset returns on event days mostly have a substantial extent of fat tails (kurtosis) and tend to be skewed, i.e. event days tend to be associated more with negative equity returns, rising short-term interest rates and a depreciation of the lira. This feature seems somewhat less striking for exchange rate changes in panels 2.C and 3.C.

Turning to the empirical results for the benchmark model of equation (4), **Table 8** provides the estimates for the composite dummy D_t and thee sub-categories and

lira-DM exchange rate. These results are available upon request.

Table 9 for the individual types of events. For all events, Table 8 indicates that overall Italian political events have exerted a statistically and economically meaningful effect on Italy's financial markets. On average, a political event has raises Italy's short-term interest rates by 4.2 basis points, lowered Italian equity returns by 0.31% and led to an effective depreciation of the lira by 0.09%.

The lower panel of Table 8 and Table 9 confirm our theoretical priors formulated above in that it is collapses of governments and other political shocks ("political events - negative") and "external events" such as natural catastrophies and terrorist attacks that have exerted a substantial influence on Italian markets. Each event in these categories raised Italian short-term interest rates by about 10 basis points, lowered equity returns by 0.5-1.0% and depreciated the lira by 0.10-0.25%. By contrast, elections referenda and the formation of governments did not exert a systematic influence on Italian asset prices. As discussed above, this finding seems sensible as whether and how such events move financial markets depends on the extent to which they were anticipated and expected.

Are these financial market effects economically meaningful? One may argue that after all these contemporaneous effects are limited in size - neither a single 1% drop in equity values nor an isolated 0.1% depreciation should have a sizeable effect on Italy's economy. However, the effect shown in the tables are those that an event *individually on average* exerted on Italy's financial markets by *each* of the events we consider. Thus, the results indicate that in total the *cumulated* effect of the 131 events in the data have raised Italy's short-term interest rates by 550 basis points, lowered Italy's equity markets by more than 40% and depreciated the lira in effective terms by 12%. These numbers are indeed meaningful and substantial. One could interpret political stability as a capital stock, which is depreciated a little by each adverse shock. The impact of each individual shock may be small, but the overall impact on all shocks is to significantly depreciate the capital stock.

4.2 The rollercoaster of Italy's political cycle

A clear limitation of the analysis conducted so far is that it identifies only the contemporaneous effects of the various political and other events. As discussed in detail in section 3.1, an important caveat is that events may have an impact on financial markets beyond the day when they occur and are reported. Moreover, to the extent that they are anticipated, events may already move asset prices before they take place. As outlined above, some of the events we analyse are arguably truly unexpected, such as terrorist attacks, natural catastrophies, accidents, and possibly also some resignations and other political events. By contrast, collapses of governments and outcomes of elections may partly be anticipated and hence are likely to have dynamic effects beyond what we can capture in our empirical model.

A compelling example of this is the collapse and formation of Italian governments. As Section 2 showed, there have been 31 government resignations and new forma-

tions since 1973. This is a remarkable number, amounting to on average almost one government per year, though the frequency of government changes has been substantially lower over the past decade. Moreover, the period in which Italy lacked a formal government was frequently quite long, in one instance more than 4 months. Each government turnover implied a period without a formal government for an average of 35 days. In total, this means that over the past 35 years Italy has been without a formal government for more than 3 years, or close to 10% of the time.[18]

To investigate the dynamic effects of such a political business cycle in Italy, **Figure 4** illustrates the behaviour of asset prices around the collapses and formations of governments. The first and second categories in the figure show the market reaction during the two weeks around government collapses; the fourth and fifth categories indicate the movements in the two weeks around government formations; and the other category shows the remaining period after the collapse and before the formation of a new government ("no government").[19]

The figure underlines quite impressively the dynamics of financial market movements around collapses and formations of governments. In the weeks before and after a collapse, interest rates rise by 24 basis points (b.p.) in cumulated terms. A similar pattern is present in stock markets and FX markets. Equity markets fall by 5.0% around government resignations; while the effective exchange rate of the lira depreciates by 1.9%. A further financial market weakening takes place during the "no-government " period, i.e. before a new government is formed.

Turning to the formation process of new governments, there is a substantial positive reaction both before and after the official inauguration of a new administration: short-term interest rates drop by 30 b.p., equity returns rise and the exchange rate stabilises in the two weeks before and after the formation, respectively.

This "rollercoaster" pattern in the behaviour of Italian financial markets appears quite impressive and the magnitude substantial and economically meaningful. It indeed shows the presence of a clear and distinct political cycle reflected in Italy's financial markets. The importance of this cycle is underscored further by the fact that Italian governments changed on average once per year since 1973.

By contrast, when we repeat such a dynamic analysis for other types of events, we find a quite different picture. **Figure 5** shows the behaviour of asset prices around external events (natural disasters, accidents and terrorist attacks). The figure indicates that financial markets react immediately after the event, but neither directly before or with a two-week delay after the event. This suggests that these types of

[18] In practice, the previous government remains in place for normal administration, but its activity and initiative are obviously severely curtailed.

[19] The usual length of the time windows for these various categories is two weeks before and two weeks after the collapse; and two weeks before and two weeks after the formation of a government. The length of the remaing period without a government ("no gov.") obviously differs across the individual episodes. In instances when the period without a government is relatively short, the post-collapse and pre-start periods may be shorter so that they do not overlap. All numbers in the figures are cumulated changes over the periods shown.

events truly come unexpected, and have a one-off, permanent effect.

For the empirical analysis, it is hard to conduct a meaningful empirical test of this political cycle around the fall and rise of governments. Financial market reactions to collapses and starts of governments vary substantially, partly due to the fact that some may have been anticipated better than others and partly due to the fact that some were considered more favourable or desirable than others. We cannot, however, measure those expectations in any meaningfully and accurate way in order to include them in the empirical analysis. Moreover, including leads and lags around resignations and formations of governments in the empirical framework of equation (4) does not prove fruitful given that asset prices tend to fluctuate substantially over time. Some statistical evidence, however, is present when looking at the volatility of asset prices, a point to which we turn in the next section. We conclude by emphasising that the contemporaneous effects of political events, which we are able to identify and presented in the previous section, are not only economically meaningful, but they are also likely to constitute the lower bound of the overall effects of such events when taking into account their dynamic effects.

4.3 Has the euro changed anything?

We now turn to the question whether the euro has helped insulate Italy's financial markets from the negative effects of adverse political developments in Italy. There is a large and growing literature that the introduction of the euro has played a key role for financial integration in Europe (e.g. Baele et al. 2004, Ehrmann et al. 2007). Hence, for instance, short-term interest rates faced by Italian investors are no longer determined by developments specific to Italy but to the euro area as a whole. Likewise, equity returns of Italian firms are increasingly influenced and dominated by developments elsewhere in the world. Moreover, with the introduction of the euro the exchange rate for Italian firms and investors is no longer the lira but the euro, the common currency for the euro area countries. All these elements suggest that events specific to Italy should have less of an impact on asset prices relevant for Italian investors and firms.

To test this hypothesis, we try to understand how the sensitivity of asset prices has evolved over time and estimate the model of equation (4) using 10-year rolling windows. **Figure 6** shows this evolution over time of the point estimates for the composite dummy D_t for each of the three asset prices. What is striking from the figure is that there has been a marked reduction in the reaction of Italian asset prices to Italy's political shocks over time. By the late 1990s, around the introduction of the euro, convergence had essentially taken place and asset prices no longer reacted significantly to political shocks. This convergence, however, mainly took place for money markets and equity markets, with no significant reaction of time variations for exchange rates.[20]

[20] Confidence intervals are not shown in order to make the figure more tractable. For short-term

Next, we distinguish in the sample between the pre-1999 period and a post-1999 period, by estimating a modified version of model (4):

$$r_t = \mu + \alpha r_{t-1} + \sum [\beta_k^1 D_{kt}(1 - EMU_t) + \beta_k^2 D_{kt} EMU_t] + \sum \gamma_j z_{jt} + \varepsilon_t \qquad (5)$$

with $EMU_t = 1$ after 1999 and $EMU_t = 0$ before 1999. **Tables 10 and 11** provide the point estimates for the composite dummies and the dummies for the individual types of events, respectively. Overall, the results confirm that there is a striking difference between the pre-1999 and post-1999 periods. Italian asset prices reacted strongly and significantly to many types of political and other shocks before 1999, but did not seem to matter after 1999.

Two notes of caution are in order here. The first one is that breaking down the sample into sub-categories and into sub-periods reduces the number of observations for each point estimate significantly. This is particularly serious for those types of events which have few observations even for the full sample period. Accordingly, the tests that the coefficients in the pre-1999 and post-1999 periods are different - shown in the three right-most columns in Tables 10 and 11 - do not always exhibit statistical significance. Moreover, one ideally would like to conduct a formal test whether 1999 and the introduction of the euro indeed constituted a structural break. However, conducting a formal Andrews-Ploberger break-point test is inconclusive, again owing to the small sample size. A second point is that a greater insulation of Italian investors to Italian shocks with the introduction of the euro may of course also mean that development elsewhere in Europe or globally may have become more important for asset prices and financing conditions faced by Italian investors and firms. Addressing this issue obviously goes beyond the scope of this paper, but it needs to be kept in mind as a limitation.

Finally, we conduct a finer break-down by testing whether changes in the exchange rate regime have mattered for the transmission of political shocks to asset markets. In particular, it may be that asset prices are less responsive to shocks under a pegged exchange rate regime, if the peg is sufficiently credible. Similarly, it may be that other asset prices respond differently under alternative exchange rate regimes. As discussed in Section 3, a shock may primarily affect short-term interest rates, and not exchange rates, under a credible peg, but have the opposite effect under a floating regime. Taking the regime changes for Italy as reported in Table 7, we distinguish between a floating regime of the lira (for the periods with a lira de jure float, $FLOAT_t = 1$ and 0 otherwise), a pegged regime ($FIX_t = 1$)and a euro regime ($EURO_t = 1$).

$$r_t = \mu + \alpha r_{t-1} + \sum [\beta_k^1 D_{kt} FLOAT_t + \beta_k^2 D_{kt} FIX_t + \beta_k^3 D_{kt} EURO_t] + \sum \gamma_j z_{jt} + \varepsilon_t \quad (6)$$

interest rates and equity returns, the effects of political and external events become statistically insignificant after 1995. For exchange rates, the shocks are not statistically significant for any of the sample periods.

Table 12 shows that again asset prices have largely been insulated from Italy's political shocks under the euro, and they also show that there does not seem to have been a marked difference in the response patterns between pegged and floating regime periods.

In summary, the section so far has shown that Italian asset prices are highly responsive to political shocks, and that there has been a structural break with the euro. Italy's adoption of the euro has helped Italian firms and investors to be largely insulated from Italy's adverse political shocks. We next turn to checking the robustness of these results.

4.4 Robustness

How robust are our results? We conduct a number of tests to verify how sensitive the results are to alternative specifications. A first test is to ask whether political events affect not only the level of Italian asset prices, but also their volatility. Based on an EGARCH specification discussed in Section 3, **Table 13** shows the coefficients for the impact of the three event categories on the conditional volatility of Italian interest rates, equity returns and exchange rates. Moreover, the table also shows estimates for the effect of what we call "no-government period". This is the period after the collapse of a government and until the formation of a new government, i.e. when Italy did not formally have a government in place. Table 13 confirms that financial market volatility has indeed been significantly higher during these periods without a formal government, in particular for money markets and equity markets.

As a second robustness check, there are of course many factors that influence Italian asset prices, and the political events which we investigate are only a small, albeit important set of events that may affect them. It is therefore useful to check whether the results are robust to the inclusion of other important market drivers. We hence use a broad set of Italian macroeconomic announcement surprises, such as for GDP, industrial production, M2 growth, CPI and PPI inflation, unemployment, the trade balance and so on. But we also include macroeconomic news from Germany/the euro area and the United States as a measure of foreign factors influencing Italian asset prices.[21] **Table 14** indicates that the inclusion of such important macroeconomic announcements does not alter the effect of political events on Italian asset prices. In fact, the coefficients for the composite dummy D_t in Table 14 are very similar to those of the benchmark model of Table 8, and this in spite of the fact that several of macroeconomic news indeed do exert a significant influence on asset prices. Interestingly and importantly, Italian asset prices do respond not only to Italian shocks but

[21] Macroeconomic news are the surprise components of the data releases, measured as the difference between the anouncement and the market expectations. Data for the announcements and the expectations stem from MMS International and Bloomberg. One caveat is that this data is mostly available only from the early 1990s onwards. See Ehrmann et al. (2007) for a more detailed account of the data.

also to foreign shocks.

Third, we have stressed throughout the paper that the number of events (131 in total) is relatively limited. This means that the precision of the empirical estimates may suffer from such a limited sample size. But it also means that we cannot rule out that a few important events drive the empirical findings. To check for the sensitivity to outliers, we therefore remove from the estimation the 10 events (i.e. almost 10% of the whole sample) for each asset price that had the largest daily impact on each asset price. **Table 15** indicates that the effect of political events for this reduced sample continue to exert a statistically and economically sizeable effect on asset prices, although of course the point estimates are somewhat smaller.

Moreover, a further potential caveat is that political conditions in Italy have become somewhat more stable over time, which may partly be reflected in the absence of financial market responses to political shocks since 1999. Nevertheless, the same argument also applies to the early and mid-1990s; however, financial markets still responded substantially to political shocks during that period. Finally, financial integration and the adoption of the euro may, on the one hand, imply the absence of a market reaction to Italian shocks, but on the other hand, make Italy's markets more responsive to external shocks - positive as well as negative - occurring elsewhere in Europe or the world. Using the analysis of Table 14, we do not find evidence that Italy's financial markets systematically respond more to foreign macroeconomic news since 1999 than before. This finding is consistent with that of the literature, though a more detailed analysis of this issue is beyond the scope of the present paper and has been done elsewhere.[22]

In summary, these different pieces of evidence underline that the findings are robust to various extensions and sensitivity analyses.

5 Conclusions

In this paper we have attempted to measure and assess the impact of the instability of Italy's political system, as measured through a broad range of Italian political events, on Italian financial markets (the short-term interest rate, the stock market, and the effective exchange rate). The key question we have addressed is whether the euro has helped insulate Italian asset prices from adverse political shocks originating from within Italy.

Our main result is that a sub-set of the events we consider has had a statistically and economically significant adverse impact on Italian financial markets in the period before the introduction of the euro. This is particularly the case for the collapse of governments and politically motivated terrorist attacks, events that have unfortu-

[22] For instance, Ehrmann et al. (2007) show that bond yields of individual euro area countries - including Italy - have started to respond in a more similar and homogenous manner but not always necessarily more strongly to foreign shocks since the introduction of the euro.

nately been rather frequent in postwar Italy. We find evidence of a structural break around the introduction of the euro, whereby the impact of political events becomes much more subdued or non-existent. Moreover, these results are robust to a number of extensions and sensitivity tests.

The main implication of our study is that, to the extent that Italy remains a politically unstable country (at least in comparison with other advanced countries), the euro may be protecting Italy from the fallout of its own political instability, and that this should be ascribed as an important positive contribution of the introduction of the euro in Italy. Although one may interpret the insulating role of the euro also as having costs - as for instance a lower responsiveness of asset prices to domestic events may reduce the disciplining role of financial markets - we interpret the findings as suggesting that the euro has brought about important benefits in terms of financial stability for Italy. The results thus stress another important economic dimension and channel for countries with a comparably weak political system to benefit from monetary union.

References

[1] Alesina, A., Ozler, A., Roubini, N. and P. Swagel (1996): "Political instability and economic growth", Journal of Economic Growth, 1, 2, pp. 189-211.

[2] Alesina, A. and R. Perotti (1996): "Income distribution, political instability, and investment," European Economic Review, Elsevier, 40, 6, pp. 1203-12.

[3] Afonso, A., Schuknecht, L. and V. Tanzi (2003): "Public sector efficiency: an international comparison", ECB Working Paper No. 242.

[4] Artis, M. (2003): "Reflections on the optimal currency area (OCA) criterion in the light of EMU", International Journal of Finance and Economics, pp. 297-307.

[5] Bachman, D. (1992): "The effect of political risk on the forward exchange bias: the case of elections", Journal of International Money and Finance, 11, 2, pp. 208-219.

[6] Baldwin, A. (2006): "The euro's trade effects", ECB Working Paper n. 594.

[7] Baele, L., A. Ferrando, P. Hördahl, E. Krylova and C. Monnet (2004): "Measuring financial integration in the euro area," ECB Occasional Paper No. 14, May 2004.

[8] Bertola, G. and R. Caballero (1992): "Target Zones and Realignments", American Economic Review 82:3, pp.520-536.

[9] Bernhard, W. and D. Leblang (2006): "Polls and pounds: public opinion and exchange rate behaviour in Britain", Quarterly Journal of Political Science, 1, pp. 25-47.

[10] Blomberg, S. B. and G. Hess (1997): "Politics and exchange rate forecasts", Journal of International Economics, 43, 1-2, pp. 189-205.

[11] Cappiello, L., P. Hördahl, A. Kadareja and S. Manganelli (2005): "What effects is EMU having on the euro area and its member countries?", ECB Working Paper No. 598.

[12] Chen, A. H. and T. F. Siems (2004): "The effects of terrorism on global capital markets", European Journal of Political Economy, 20, pp. 349-366.

[13] Draghi, M. (2007): "Riccardo Faini: un economista al servizio delle istituzioni", speech at the University of Brescia, Italy, 12 September.

[14] Eichengreen, B. and J. Frieden eds. (2001): *The political economy of European Monetary Unification*, Westview Press, Boulder.

[15] Ederington, L. and J. H. Lee (1993): "How markets process information: news releases and volatility", Journal of Finance, 48, pp. 1161-1191.

[16] Ehrmann, M., M. Fratzscher, R. Gürkaynak and E. Swanson (2007): "Convergence and anchoring of yield curves in the euro area," CEPR Discussion Paper No. 6456, September 2007.

[17] Ehrmann, M., M. Fratzscher, R. Rigobon (2005): "Stocks, bonds, money markets and exchange rates: Measuring international financial transmission," NBER Working Paper 11166.

[18] Eldor, R. and R. Melnick (2004): "Financial markets and terrorism", European Journal of Political Economy, 20, 2, pp. 367-386.

[19] Engel, C. and J. Rogers (2004): "European product market integration after the euro", Economic Policy, July, pp. 347-384.

[20] Feldstein, M. (1997): "The political economy of the European Economic and Monetary Union: political sources of an economic liability", Journal of Economic Perspectives, 11, 4, pp. 23-42.

[21] Fornari, F., Monticelli, C., Pericoli, M. and M. Tivegna (2002): "The impact of news on the exchange rate of the lira and long-term interest rates", Economic Modelling, pp. 611-639.

[22] Frankel, J. and A. Rose (1997): "Is EMU more justifiable ex post than ex ante?", European Economic Review, 41, pp. 753-760.

[23] Freeman, J. R., Hays, J. C. and H. Stix (2000): "Democracy and markets: the case of exchange rates", American Journal of Political Science, 44, 3, pp. 449-468.

[24] Garofalo, P. (2005): "Exchange rate regimes and economic performance: the Italian experience", Quaderni dell'Ufficio Ricerche Storiche N. 10.

[25] Giannone, D. and L. Reichlin (2006): "Trends and cycles in the euro area: how much heterogeneity and should we worry about it?", ECB Working Paper n. 595.

[26] Giavazzi, F. and F. Torres eds. (1993): *Adjustment and growth in the European Monetary Union*, Cambridge: Cambridge University Press.

[27] Ginsborg, P. (2003). *Italy and Its Discontents: Family, Civil Society, State* (1980-2001), New York and Houndsmills, Basingstoke, Hampshire, England: Palgrave Macmillan.

[28] Issing, O. (2005): "One size fits all! A single monetary policy for the euro area", speech at the International Research Forum, Frankfurt am Main, 20 May.

[29] Kaufmann, D., Kraay, A. and M. Mastruzzi (2007): "Governance matters VI: Governance indicators for 1996-2006", World Bank Policy Research Working Paper No. 4280.

[30] Kugler, P. and B. Weder (2005): "Why are returns on Swiss franc assets so low? Rare events solve the puzzle", CEPR Discussion Paper, No. 5181.

[31] Lane, P. (2006): "The real effects of EMU", CEPR Discussion Paper No. 5536.

[32] Lobo, B. and D. Tufte (1998): "Exchange rate volatility: does politics matter?", Journal of Macroeconomics, 20, 2, pp. 351-365.

[33] Mongelli, F. (2005): "What is EMU telling us about the Optimum Currency Area properties?", Journal of Common Market Studies, 43, 3, pp. 607-635.

[34] Nelson, D. (1991): "Conditional Heteroskedasticity in Asset Returns: A New Approach," Econometrica 59:2, 347-70.

[35] Ramcharan, R. (2007): "Does the exchange rate regime matter for real shocks? Evidence from windstorms and earthquakes", Journal of International Economics, 73, pp. 31-47.

[36] Rigobon, R. and B. Sack (2005): "The effects of war risk on US financial markets", Journal of Banking and Finance, 29, pp. 1769-1789.

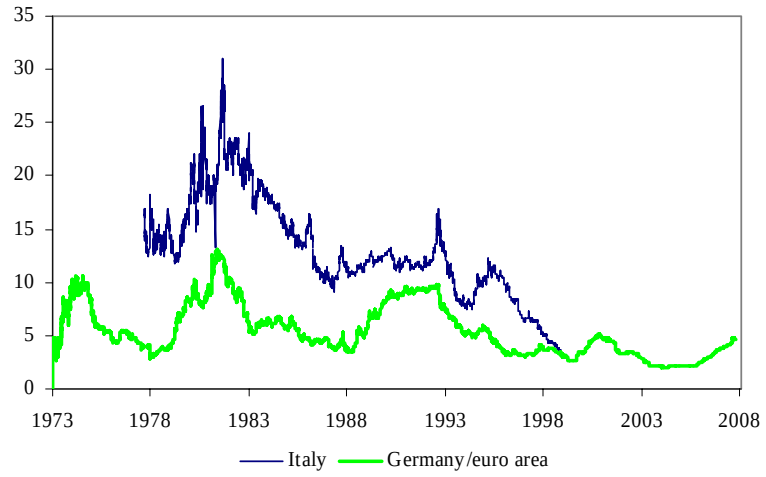
[37] Rose, A. K. (2000): "One money, one market: estimating the effect of common currencies on trade", Economic Policy, 30.

[38] Siokis, F. and P. Kapopoulos (2003): "Electoral management, political risk and exchange rate dynamics: the Greek experience", Applied Financial Economics, 13, 4, pp. 279-285.

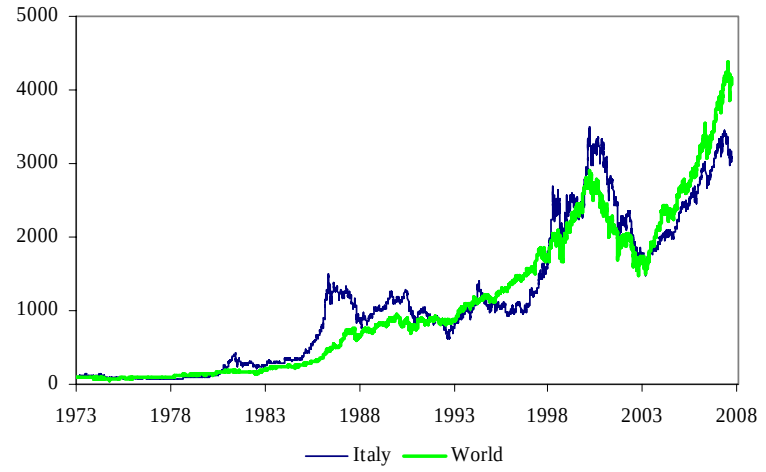
[39] Zussman, A. and N. Zussman (2006): "Assassinations: evaluating the effectiveness of an Israeli counter-terrorism policy using stock market data", Journal of Economic Perspectives 20, pp. 193-206.

Figure 1: Italian asset prices, 1973-2007

1.A Short-term interest rates



1.B Equity indices



1.C Exchange rates

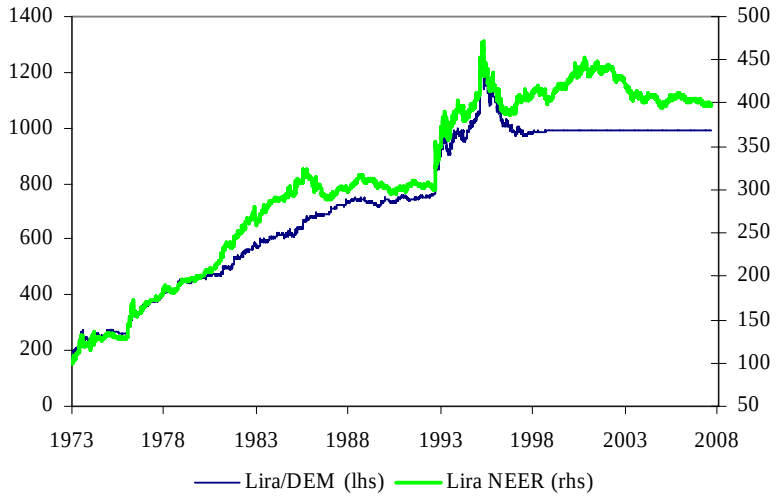
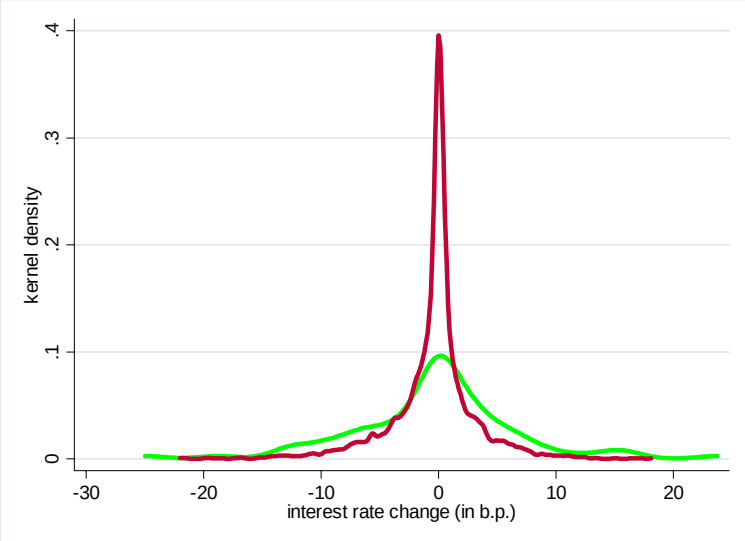
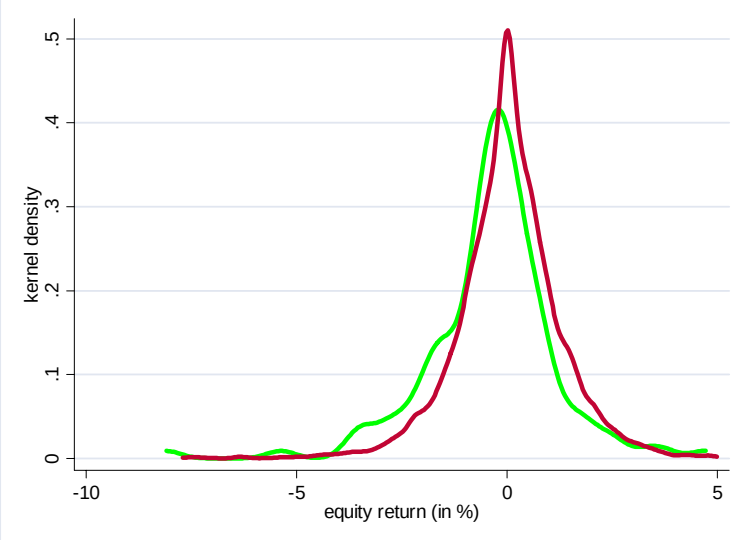


Figure 2: Kernel densities on event days and non-event days, 1973-2007

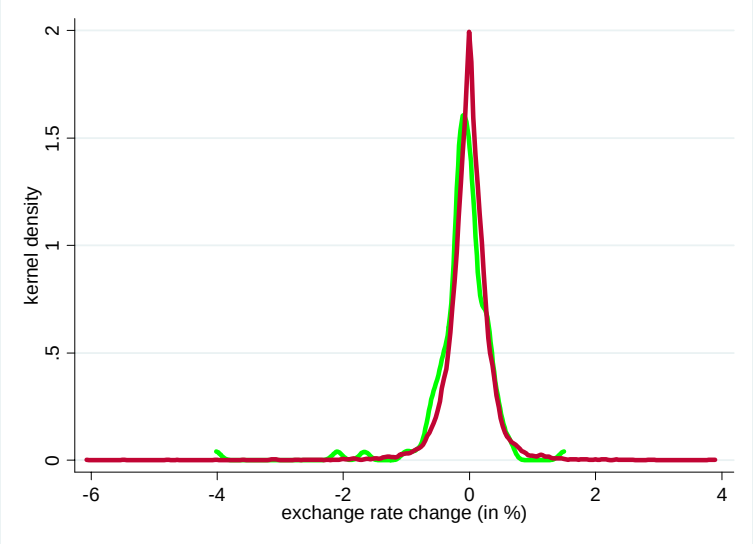
2.A Short-term interest rates



2.B Equity indices



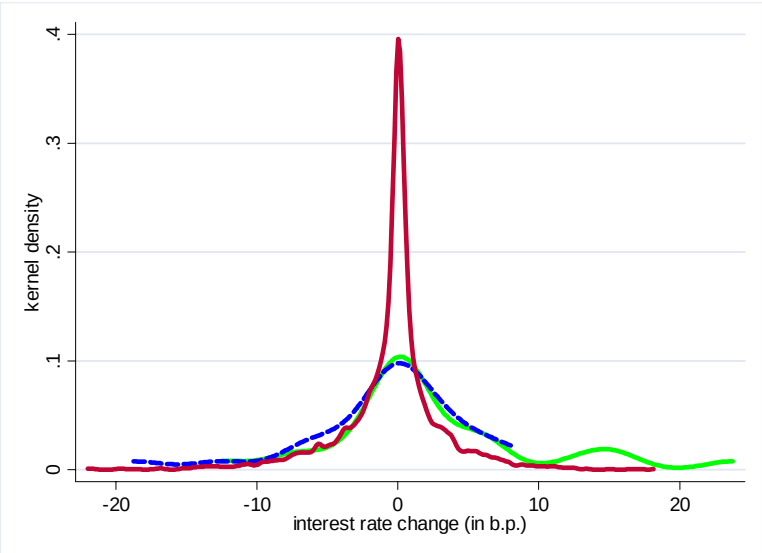
2.C Exchange rates



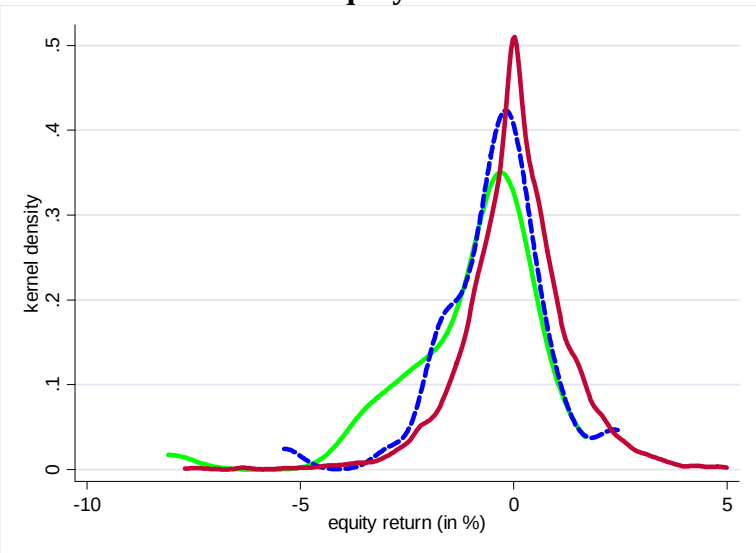
non-event days **event days**

Figure 3: Kernel densities, event days and non-event days <u>by event type</u>, 1973-07

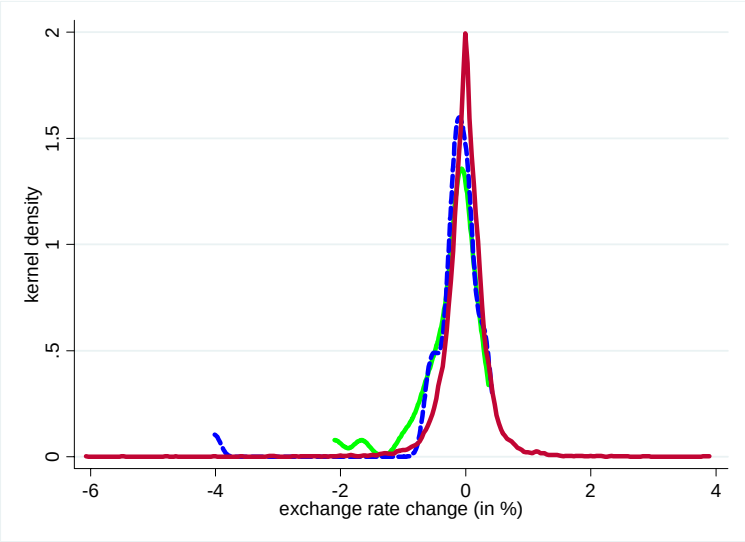
3.A Short-term interest rates



3.B Equity indices



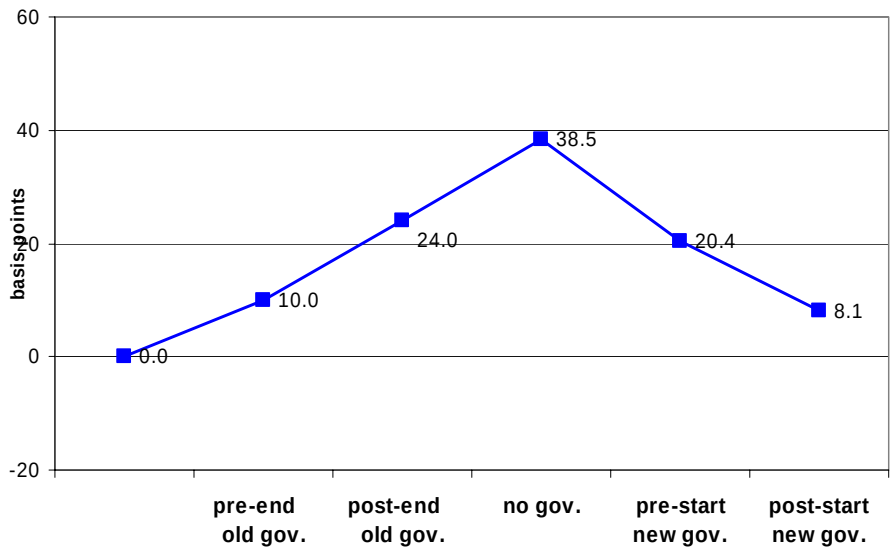
3.C Exchange rates



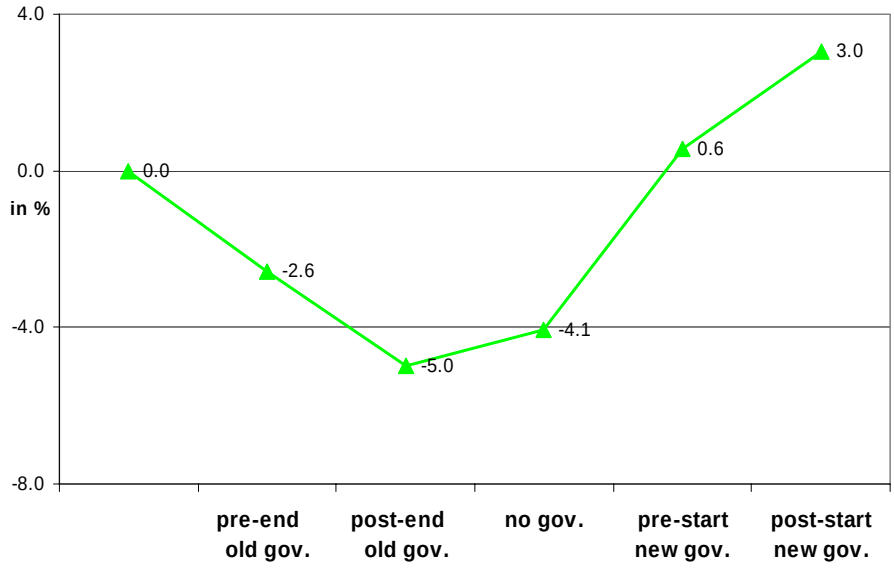
non-event days **days neg. political events** **days external events**

Figure 4: The Italian "rollercoaster" – asset price movements around collapses and formations of Italian governments, 1973-2007

4.A Interest rates



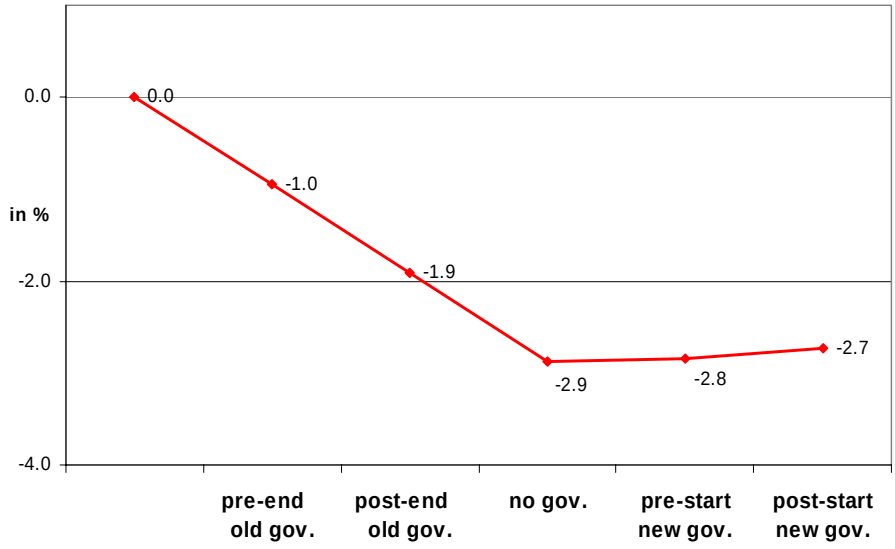
4.B Equity returns



cont. …

Figure 4: …cont.

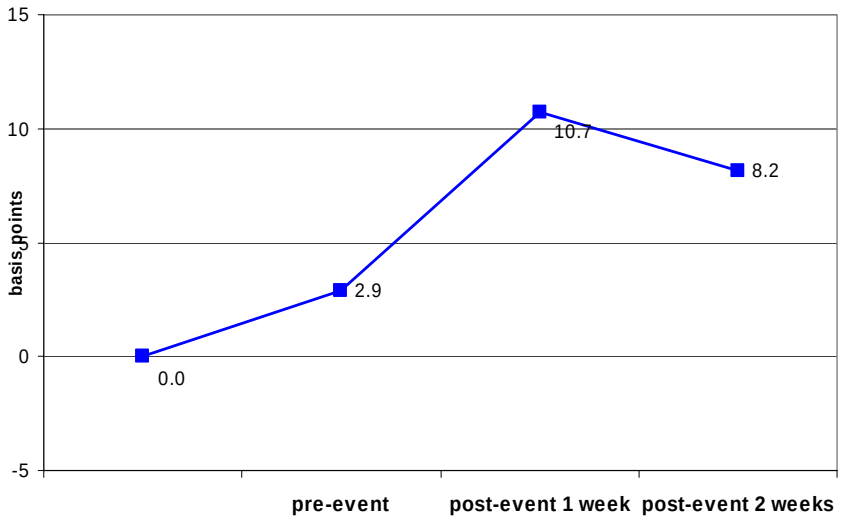
4.C Exchange rates



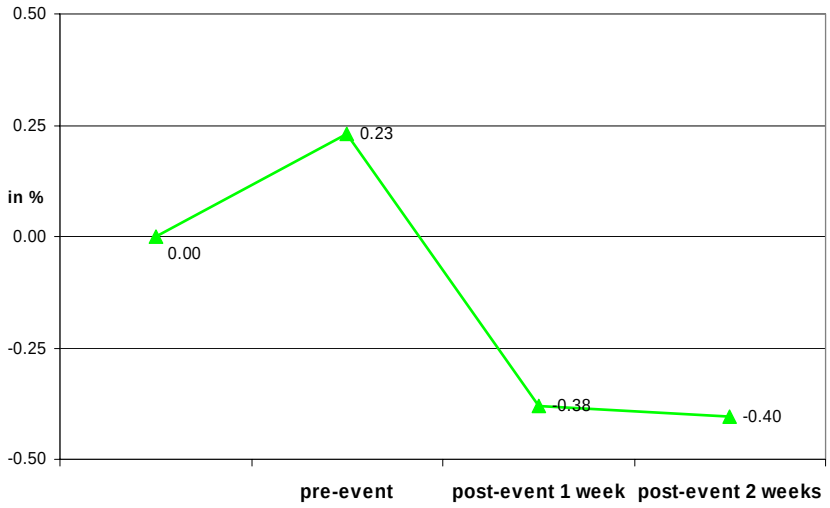
Notes: The figures show the cumulated reaction of asset prices during periods around the collapses and the formations of governments: "pre-end old gov." for the two weeks before and "post-end old gov." for the day of and the two weeks after the collapse of a government; "pre-start new gov." for the two weeks before and "post-stat new gov." for the day of and the two weeks after the start of a new government. "no gov." is for the remaining period after the collapse and before the formation of a new government. All numbers are cumulated changes in basis points (for interest rates) or in percent (for equity returns and exchange rates). In total there were 32 governments in 1973-2007; see section 2 for details.

Figure 5: The Italian "rollercoaster" – asset price movements around external events (natural disasters, accidents and terrorist attacks), 1973-2007

5.A Interest rates



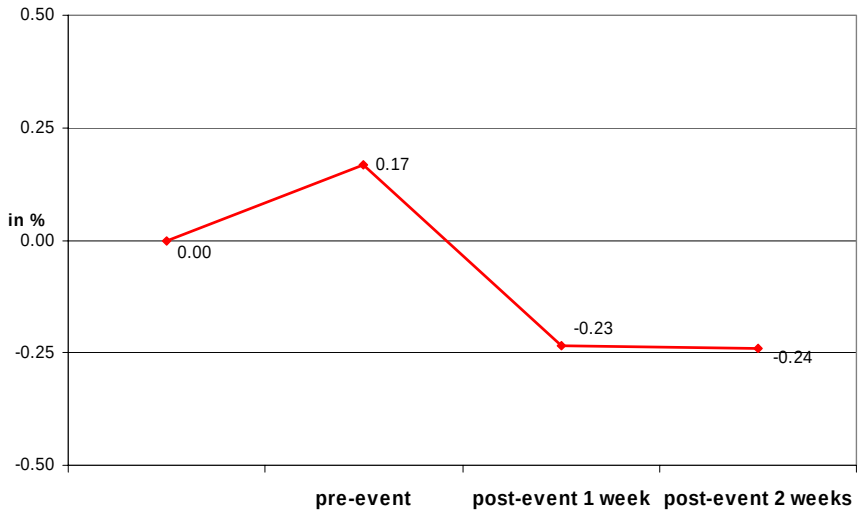
5.B Equity returns



cont. …

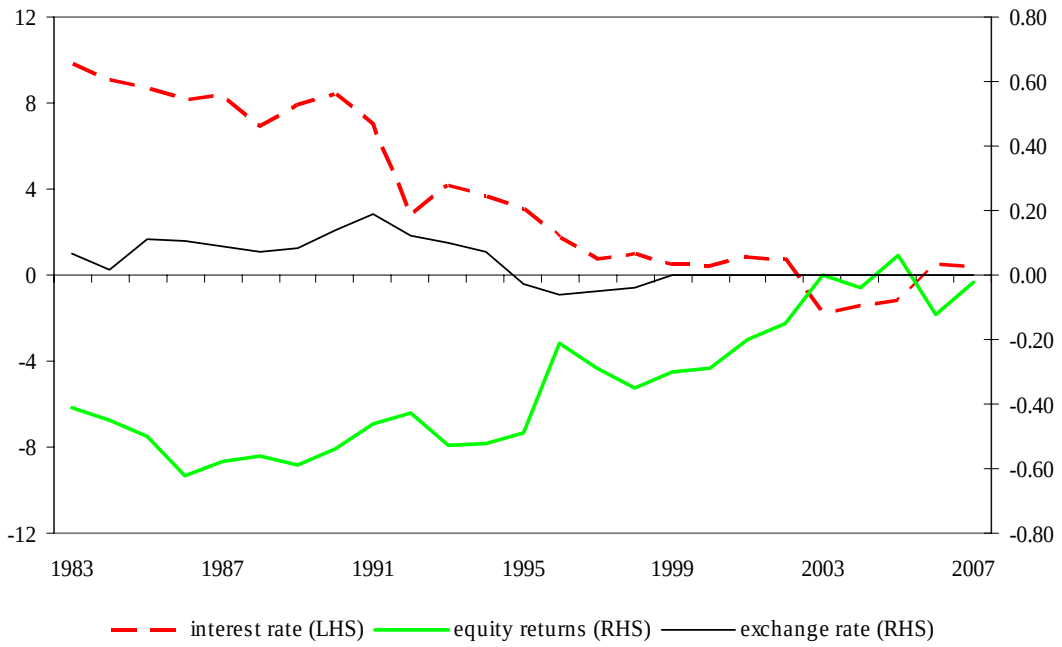
Figure 5: …cont.

5.C Exchange rates



Notes: The figures show the cumulated reaction of asset prices during periods around external events (natural disasters, accidents and terrorist attacks): "pre-event" shows the movement for the week before, "post-event 1 week" for the first week after, and "post-event 2 weeks" for the second week after the event. All numbers are cumulated changes in basis points (for interest rates) or in percent (for equity returns and exchange rates). In total there were 25 of such external events in 1973-2007; see section 2 for details.

Figure 6: Time variations – 10-year rolling estimates for effect of political and external events on Italian asset prices, 1973-2007



Notes: The figure shows the estimates of equation (4), using rolling 10-year windows, with the year in the figure indicating the last year of the window (e.g. the numbers for 1983 provide the parameter estimates for the window 1974-1983). Confidence intervals are not shown in order to make the figure more tractable. For short-term interest rates and equity returns, the effects of political and external events become statistically insignificant after 1995. For exchange rates, the shocks are not statistically significant for any of the sample periods.

Table 7: Exchange rate regimes for Italy, 1973-2007

Period	*De facto regime*	*De jure regime*
Feb. 1973 – Mar. 1976	Managed float	Float
Apr. 1976 – Feb. 1979	Crawling peg	Float
Mar. 1979 – Jan. 1987	Crawling peg	Peg to DM
Feb. 1987 – Jan. 1990	Soft peg	Peg to DM
Feb. 1990 – Aug. 1992	Soft peg	Peg to DM
Sep. 1992 – Mar. 1993	Float	Float
Apr. 1993 – Apr. 1996	Managed float	Float
May 1996 – Oct. 1996	Soft peg	Float
Nov. 1996 – Dec. 1998	Soft peg	Peg to DM
Since Jan. 1999	Euro	Euro

Source: Garofalo (2005)

Table 8: Benchmark results: Effect of political and external events on Italian asset prices, 1973-2007

	Full sample 1973-2007		
	interest rate	equity return	exchange rate
All events	4.198**	-0.314**	-0.092**
	1.737	*0.128*	*0.046*
Political events I - negative	8.892***	-0.912***	-0.229***
	3.012	*0.249*	*0.078*
Political events II - ambiguous	-2.259	0.2	0.074
	2.908	*0.19*	*0.047*
External events	7.997***	-0.398**	-0.172
	2.398	*0.194*	*0.105*
Controls:			
German interest rate	0.114		
	0.099		
World equity returns		0.553***	
		0.018	
Monday dummy	0.198	-0.054	-0.009
	0.98	*0.035*	*0.013*
Friday dummy	0.98	0.063**	-0.003
	1.016	*0.03*	*0.01*
Constant	-0.466	0.017	-0.014***
	0.467	*0.016*	*0.005*
# observations	7836	9054	9054

Notes: The table shows the estimates of equation (4) for event categories. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Breakdown by type of event: Effect of political and external events on Italian asset prices, 1973-2007

	Full sample 1973-2007		
	interest rate	equity return	exchange rate
Political events I - negative			
Collapse of government	7.306**	-0.902***	-0.221**
	3.637	*0.298*	*0.092*
Other political events	14.040***	-0.947**	-0.259**
	4.416	*0.37*	*0.125*
Political events II - ambiguous			
Elections	-4.099	0.692	0.154
	4.484	*0.455*	*0.107*
Referendum	15.545	0.776	0.046
	9.793	*0.501*	*0.134*
Start of government	-4.682	-0.146	0.04
	3.594	*0.185*	*0.053*
External events			
Natural disasters & accidents	3.083	-0.461*	-0.323
	2.169	*0.24*	*0.3*
Terrorist & Mafia attacks	10.345***	-0.367	-0.100*
	3.256	*0.263*	*0.052*
Further disaggregation of two of the above event types:			
Elections			
Elections - Left victory	-12.124	1.338	0.344
	8.628	*0.881*	*0.273*
Elections - Right victory	0.259	0.376	0.061
	4.32	*0.489*	*0.065*
Terrorist & Mafia attacks			
Mafia attacks	3.583*	-0.577	-0.136
	1.843	*0.619*	*0.101*
Politically motivated attacks	13.250***	-0.288	-0.085
	4.397	*0.28*	*0.06*
Controls	Yes	Yes	Yes
# observations	7836	9054	9054

Notes: The table shows the estimates of equation (4) for the various event types. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10: Pre-euro vs. post-euro period breakdown: Effect of political and external events on Italian asset prices

	Pre-1999			Post-1999			significance pre-1999 vs post-1999		
	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate
All events	4.976**	-0.387***	-0.100*	0.576	0.09	-0.048	0.033**	0.068*	0.443
	2.083	*0.145*	*0.053*	*0.503*	*0.218*	*0.041*			
Political events I - negative	10.344***	-0.973***	-0.247***	0.475	-0.492	-0.104	0.005***	0.319	0.239
	3.455	*0.278*	*0.088*	*0.576*	*0.395*	*0.084*			
Political events II - ambiguous	-3	0.12	0.105*	0.698	0.583**	-0.079	0.301	0.207	0.019**
	3.6	*0.219*	*0.055*	*0.693*	*0.295*	*0.057*			
External events	9.626***	-0.440**	-0.211*	0.4	-0.16	0.046	0.001***	0.477	0.059*
	2.807	*0.221*	*0.122*	*0.437*	*0.325*	*0.062*			
Controls	Yes	Yes	Yes	Yes	Yes	Yes			
# observations	5565	6783	6782	2271	2271	2271			

Notes: The table shows the estimates of equation (5), pre-1999 vs. post-1999. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. “Significance” provides the p-values of a t-test for equality of respective point estimates for the pre-1999 vs. post-1999 sub-periods.

Table 11: Pre-euro vs. post-euro period breakdown by type of events: Effect of political and external events on Italian asset prices

	Pre-1999			Post-1999			significance pre-1999 vs post-1999		
	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate
Political events I - negative									
Collapse of government	8.934**	-0.981***	-0.243**	0.48	-0.491	-0.104	0.057*	0.350	0.309
	4.425	*0.346*	*0.108*	*0.576*	*0.394*	*0.084*			
Other political events	14.037***	-0.947**	-0.259**	--	--	--	--	--	--
	4.417	*0.37*	*0.125*						
Political events II - ambiguous									
Elections	-6.015	0.823	0.211	0.683	0.333	-0.005	0.269	0.520	0.184
	6.117	*0.589*	*0.138*	*0.889*	*0.484*	*0.087*			
Referendum	15.543	0.776	0.047	--	--	--	--	--	--
	9.796	*0.502*	*0.134*						
Start of government	-5.969	-0.325*	0.075	0.724	0.787**	-0.138**	0.131	0.004***	0.015**
	4.394	*0.191*	*0.059*	*0.76*	*0.337*	*0.064*			
External events									
Natural disasters & accidents	4.581	-0.682***	-0.5	0.463	0.037	0.074	0.204	0.150	0.178
	3.247	*0.257*	*0.418*	*0.452*	*0.428*	*0.082*			
Terrorist & Mafia attacks	11.305***	-0.353	-0.107*	0.282	-0.554*	-0.011	0.002***	0.638	0.277
	3.492	*0.283*	*0.055*	*0.484*	*0.322*	*0.069*			
Further disaggregation of two of the above event types:									
Elections									
Elections - Left victory	-30.941**	3.437***	0.828*	0.424	-0.062	0.02	0.015**	0.000***	0.10*
	12.882	*0.849*	*0.492*	*0.88*	*0.448*	*0.113*			
Elections - Right victory	0.141	0.247	0.076	1.209	1.542***	-0.073***	0.823	0.014**	0.031**
	4.84	*0.526*	*0.07*	*0.854*	*0.044*	*0.012*			
Terrorist & Mafia attacks									
Mafia attacks	3.586*	-0.577	-0.136	--	--	--	--	--	--
	1.843	*0.619*	*0.101*						
Politically motivated attacks	15.106***	-0.258	-0.093	0.254	-0.551*	-0.01	0.003***	0.548	0.379
	4.82	*0.308*	*0.066*	*0.482*	*0.322*	*0.069*			
Controls	Yes	Yes	Yes	Yes	Yes	Yes			
# observations	5565	6783	6782	2271	2271	2271			

Notes: The table shows the estimates of equation (5), pre-1999 vs. post-1999 for the various event types. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. “Significance” provides the p-values of a t-test for equality of respective point estimates for the pre-1999 vs. post-1999 sub-periods.

Table 12: Breakdown by exchange rate regime:
Effect of political and external events on Italian asset prices

	(1) float			(2) peg			(3) euro			significance								
	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate	interest rate	equity return	exchange rate	interest r. 1-2	1-3	2-3	equity ret. 1-2	1-3	2-3	exchange r. 1-2	1-3	2-3
All events	3.597	-0.149	-0.08	5.541**	-0.550***	-0.113	0.576	0.09	-0.048			Y			Y			
	3.444	*0.235*	*0.071*	*2.551*	*0.18*	*0.075*	*0.503*	*0.218*	*0.041*									
Political events I - negative	11.259**	-0.642**	-0.288**	9.786**	-1.268***	-0.211*	0.475	-0.491	-0.104		Y	Y			Y			
	4.448	*0.315*	*0.127*	*4.839*	*0.434*	*0.121*	*0.576*	*0.395*	*0.084*									
Political events II - ambiguous	-6.515	0.478	0.163	-1.451	-0.137	0.064	0.699	0.583**	-0.079								Y	Y
	5.648	*0.427*	*0.107*	*4.496*	*0.203*	*0.052*	*0.693*	*0.295*	*0.057*									
External events	8.941**	-0.453	-0.175***	9.775***	-0.433	-0.228	0.4	-0.16	0.046		Y	Y					Y	
	4.184	*0.351*	*0.065*	*3.282*	*0.279*	*0.177*	*0.437*	*0.325*	*0.062*									
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes									
# observations	3545	4763	4762	2020	2020	2020	2271	2271	2271									

Notes: The table shows the estimates of equation (6) for each exchange rate regime. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. A “Y” under “significance” indicates that the t-test for equality of respective point estimates across exchange rate regimes is significant at the 10% level.

Table 13: Robustness I: Effect of political and external events on <u>conditional volatility</u> of Italian asset prices, 1973-2007

	Full sample 1973-2007		
	interest rate	equity return	exchange rate
No-government period	0.211 ***	0.058 *	0.045
	0.071	*0.033*	*0.055*
Political events I - negative	-0.265	0.304	0.299
	0.357	*0.316*	*0.321*
Political events II - ambiguous	-0.890 **	0.406 **	-0.179
	0.275	*0.206*	*0.217*
External events	-0.303	0.004	0.299
	0.533	*0.172*	*0.415*
Controls	Yes	Yes	Yes
# observations	7836	9054	9054

Notes: The table shows the estimates of the conditional volatility equation of the EGARCH model. "No-government period" is the period between the collapse of the previous government and the start of the next one, which as shown in Table 5 has in many instances taken several months. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 14: Robustness II: Effects on Italian asset prices - controlling for Italian, German/euro area and US macroeconomic news

	Full sample 1973-2007		
	interest rate	equity return	exchange rate
All events	4.240**	-0.317**	-0.091***
	1.756	0.129	0.046
Italian macro news:			
GDP growth	2.124**	0.507**	0.014
Industrial orders	0.752	-0.071	0.022
Industrial production	0.145	0.029	-0.024
M2 growth	1.349	-0.312***	-0.787***
CPI inflation	0.038	0.087	0.061**
PPI inflation	0.995**	-0.203*	0.032
Retail sales	0.061	-0.098	0.033
Trade balance	0.79	-0.122	-0.060**
Unemployment rate	-1.183	0.142	-0.092
Wage changes	-0.347	0.135	0.022
German/euro area macro news:			
GDP growth	-0.107	0.818**	-0.285
IFO business confidence	1.125	0.022	-0.417***
Industrial production	-0.338	0.068	0.022
M3 growth	9.105**	0.222	0.141**
CPI inflation	0.011	0.006	-0.071**
PPI inflation	1.085	-0.046	-0.007
Retail sales	-0.578	-0.054	0.041
Trade balance	0.087	-0.015	-0.03
Unemployment rate	-0.466	0.018	-0.036
US macro news:			
GDP growth	1.246	0.579**	-0.132
ISM / NAPM	1.53	0.2	-0.195***
Non-farm payrolls	1.123	0.400***	-0.092***
Consumer confidence	0.21	0.466	-0.212**
Industrial production	0.125	0.133	-0.054*
CPI inflation	-1.979	-0.146	0.010
PPI inflation	0.857	0.054	-0.002
Retail sales	2.187	0.154	-0.075
Trade balance	2.737	1.102*	-0.620***
Unemployment rate	-3.745	-0.239	0.320**
Workweek	0.837	0.095	-0.101
# observations	7836	9054	9053

Notes: The table shows the estimates of equation (4), which controls in addition for the most relevant Italian, German/euro area and US macroeconomic news. Standard errors are not shown for brevity reasons. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 15: Robustness III: Removing large market-moving events

	Full sample 1973-2007		
	interest rate	equity return	exchange rate
All events	2.588**	-0.239**	-0.074**
	1.138	*0.098*	*0.032*
Controls	Yes	Yes	Yes
# events removed	10	10	8
# observations	7826	9044	9045

Notes: The table shows the estimates of equation (4), which excludes the 10% largest market-moving events from the sample. The small numbers in Italics show robust standard errors. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.