Populism, Political Risk, and the Economy: Lessons from Italy

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Abstract

This paper studies the e ects of political risk shocks in Italy during the 2013-2019 period that saw the rise to power of populist parties. We identify political and policy events that have implications for debt sustainability and Euro membership, and use changes in sovereign CDS spreads around those dates as an instrument for political risk shocks. Shocks associated with populism have adverse e ects on domestic and international nancial markets. These e ects were moderated by European institutions and domestic constitutional constraints. Moreover, political risk shocks have a negative impact on the real domestic economy, although cushioned by an accommodating monetary policy.

JEL Codes: E44, G10, H62, H63

Keywords: populism, political risk, sovereign debt, nancial markets, CDS spread

1 Introduction

The Italian experience during the sovereign debt and Lehman crises is a textbook case study of the adverse effects of financial market shocks on the real economy. The events following the end of the sovereign debt crisis provide, instead, an important lesson on the economic effects of the rise of populist movements and the weakening of more traditional pro-Europe parties. These political events generate shocks to risk associated with budgetary policies, debt sustainability, and the very prospects of continued Euro membership. In this paper, we investigate empirically the economic effects of these policy and institutional risk shocks (\political risk shocks" for short) during the 2013-2019 period. Our main objective and contribution is to provide a quantitative assessment of their impact on Italy's domestic financial markets and real economy. In addition, we also provide evidence on the spillover effect on the financial markets of other euro-zone countries controlling for the common factors that determine co-movements of financial variables. While the Italian experience is interesting in its own right, the potential for such spillovers makes the analysis of the Italian case doubly important.

Even a cursory look at Italian financial market data suggests that many of the significant market fluctuations from 2013 onward { such as the upward jump of the sovereign CDS spread at the end of May 2018 and its fluctuations in the Fall of the same year { occurred as a result of important domestic political developments (see Figure 1). We build on this observation and assume that the change in the Italian sovereign CDS spread on the dates of political events (such as elections) and policy announcements is informative about the unobserved shocks to concerns associated with budgetary policies, government debt sustainability, and Euro membership in Italy. This is a very reasonable hypothesis as the sovereign CDS spread reflects the probability of the government defaulting on its debt as well as the associated expected losses for bond holders in that case. This is particularly relevant for a country like Italy with a debt-to-GDP ratio around 130% and a GDP growth rate that, despite being mildly positive during most of our sample period, was significantly below the European average.

In order to identify and quantify the effects of political developments on the economy, we adopt the methodology discussed in Stock and Watson (2018) and use the change in the CDS spread for Italian government bonds on political and policy dates as

an instrument for political risk shocks in the context of Local Projections (Jorda, 2005). We use the change in the spread for the sovereign CDS contract at each point in time as the indicator variable that is being instrumented (i.e., a unit change in political risk is associated with the unit change in the spread on impact).[1] In de ning our instrument we select dates on which general elections for the Italian and European parliaments took place, as well as the dates when the President of the Italian Republic chooses

To rule out the possibility that our results are driven by other shocks that we have not controlled for, we conduct a standard placebo test where we de ne our instrument

is one of the important results of our analysis as it makes the Italian experience relevant for other countries as well.

Finally, we discuss why shocks that increase political risk are likely to have adverse e ects on the real economy and present some evidence using the monthly Purchasing Managers Index (PMI) and other leading indicators of real activity. In evaluating the response of the economy it is important to remember that the political shocks analyzed here have occurred in the context of a large degree of monetary accommodation and the provision of ample liquidity by the European Central Bank. This has contributed to preventing Italian spreads from reaching the levels observed in 2011-2012 during the sovereign debt crisis. In addition, the strengthening of banks' balance sheets following the recapitalization exercises prompted by the European Banking Authority (EBA) stress tests and the reduction in the share of non-performing loans have allowed banks to deal with the increase in the spread in government and bank bonds and cushion their e ect on lending rates. All these factors have lessened the negative impact of the rise of populism on the Italian economy.

The structure of the paper is as follows: in Section 2 we brie y discuss the relationship of our paper with the literature. Section 3 contains a detailed description of the construction of our instrument for political risk shocks. Section 4 describes the evolution of the CDS spreads for Italy and for some other euro-zone countries. In Section 5 we review the econometric methodology. Section 6 presents the empirical results for nancial market variables, rst at a daily and then at a monthly frequency. We also analyze the spillover e ects of an Italian political risk shock to the nancial markets of other euro-zone countries. Finally, this section contains an extensive set of robustness checks and a placebo test. In Section 7 we discusstheometritdomlian po8905(p)-27(o8905(1(.)-46uc2(r

ologies (from event studies to measures based on textual analysis).[2] For instance, Kelly et al. (2016) analyze the effects of political uncertainty on the implied volatility of stock option contracts around elections and global summits in twenty different countries. They show that those options whose lives span political events tend to be more expensive. We share the event-study orientation and the focus on high-frequency financial market fluctuations, but we differ in many dimensions. First, and most importantly, while Kelly et al. (2016)'s focus is on the effect of political uncertainty on the pricing of risk, our goal is to identify the causal effect of political risk shocks associated with populism on domestic and international financial markets and on the domestic real economy. Second, we employ a different econometric strategy and use the change in the sovereign CDS spread on political and policy announcement dates as an external instrument in the context of Local Projections. Finally, while their emphasis is specifically on elections and global summits dates, we focus on a larger set of domestic political dates concerning elections, as well as government formation and budget law announcements.

Our paper is also related to those studies that analyze the effects of economic uncertainty shocks on real variables.[3] Within this vast field, our contribution is more closely related to those papers that focus on the effects of economic policy uncertainty on the economy. Baker et al. (2016) build a new economic policy uncertainty index for the US and other countries, applying textual analysis to national newspapers. They show that innovations in this index negatively correlates with current and future domestic economic activity.[4] Azzimonti (2018) also uses textual analysis to build an index of

[2] See, among others, Snowberg et al. (2007), Boutchkova et al. (2012), Julio and Yook (2012), Goodell and Vähämaa (2013), Kelly et al. (2016) and Hassan et al. (2019). Whereas most of the contributions focus on event studies, Hassan et al. (2019) construct a measure of political risk faced by US firms based on the share of their quarterly earnings conference calls that they devote to political risks. They find that firms exposed to political risk reduced hiring and investments. See also Pastor and Veronesi (2012) and Pastor and Veronesi (2013) for theoretical models of policy uncertainty and political uncertainty.

[3] Among others, see Bloom (2009), Leduc and Liu (2016), Basu and Bundick (2017), Bloom et al. (2018), and Alfaro et al. (2018). See Bloom (2014) for a survey. Moreover, Gilchrist et al. (2014) show that uncertainty shocks have an adverse effect on investment primarily through a rise in credit spreads. Finally, Fernandez-Villaverde et al. (2015) empirically estimate the effect of fiscal uncertainty in the context of DSGE and VAR models with stochastic conditional volatility, with adverse effects on the economy. See also Born and Pfeifer (2014).

[4] See also Gulen and Ion (2016) and Brogaard and Detzel (2015) on the effect of EPU on corporate investment and excess market returns, respectively. Caldara et al. (2020) focus on the effect of trade policy uncertainty on investment, employing various proxies for uncertainty, including one based on

particular, the choice of the change in the sovereign CDS spreads on political and policy announcements dates as an instrument is designed to capture shocks to domestic political risk associated with the rise of populism in Italy after 2013. The change in the sovereign CDS spread well captures concerns about the consequences of budgetary choices on the sustainability of government debt, as well as the risk associated with Italy's position vis a vis European scal rules, the Euro, and the European Union as a whole. Finally, our methodology is akin to that of papers studying the e ect of scal

by the spread of the 2003-clause CDS contract) across euro-zone countries and their correlation with sovereign bond yield or CDS spreads in the period 2014 onward. They find that Italian redenomination risk is not correlated with either the government bond yields or redenomination risk of other countries, whereas French redenomination risk is. They conclude that France has spillover effects while Italy does not. The distinguishing feature of our paper is the fact that we go beyond descriptive evidence and correlations and employ an instrumenting strategy that allows us to identify the causal effect of Italian political risk shocks on both Italy and other euro-zone countries. In addition, we focus on the effect of political risk shocks while the other two papers put the emphasis on redenomination risk and its relation with (or its importance relative to) credit/default risk.

Other papers address the issue of spillovers or contagion in the periods that precedes the ascendancy to power of populism in Italy. For instance, De Santis (2019) focuses on the difference in the spreads on the dollar- and euro-denominated 2003-clause CDS contracts (the \quanto" spread) during the sovereign debt crisis and immediately after it. He presents evidence on its effects on financial variables, such as sovereign yield spreads in the context of a (FA)VAR in which the foreign redenomination risk is placed after the local quanto spread. He concludes that Italy and Spain appear to be less affected by spillovers, while France is significantly exposed to foreign redenomination risk shocks.[9] We differ from this paper in terms of the research question, the sample period, and the identification strategy (not based, in our case, on the ordering in a Cholesky decomposition). Finally, Kelly et al. (2016), using a regression framework, find that election events in the US have a spillover effect on European equity option prices, while European summits have a spillover effect on US equity option prices.

In sum, there is mixed evidence on the existence of spillover effects across countries and no evidence supporting spillovers from Italy to the financial markets of other euro-zone countries in the more recent period. In addition, none of the contributions

[9]See also Gomez-Puig and Sosvilla-Rivero (2016) who show that Granger-Causality tests suggest the presence of bidirectional causality in sovereign yield spreads over Germany in the euro area during a sample period that includes the inception of the European Monetary System as well the Lehman and the sovereign debt crises. Moreover, Caporin et al. (2018), instead, find no evidence of contagion among euro-zone CDS spreads during the 2003{2006, November 2008{November 2011, and December 2011{December 2013 sample periods, using quantile regressions.

discussed above focuses on assessing the causal effect of domestic political risk shocks associated with populism on other countries, as we do.

3 Construction of the instrument for political risk

In this section, we describe the construction of our instrument for policy and institutional risk shocks (again, political risk shocks for short). We then explain in Section 5 how this instrument can be used to identify the effect of political risk on the economy in the context of Local Projections–Instrumental Variables (LP–IV). The construction of this instrument is based on: (i) selecting dates around which there may have been important changes in political risk; (ii) choosing a variable that best captures such changes.

We argue that the CDS spread on sovereign bonds summarizes neatly the policy and institutional risk that we want to capture. We then use the change in the closing value of the CDS spread between the day before and the day of the event as an instrument for political risk shocks.

3.1 Choice of events

We focus on political events around which new information may be revealed concerning: the general direction of fiscal policy, the relationship with the European Commission (that has the formal responsibility of passing judgment on member countries' budgetary and debt policies), Italian membership in the Euro, and its stance with respect to European institutions. The information may be noisy (but this does not prevent us from using it as an instrument; see below for details) and may contribute to either an increase or decrease in uncertainty about policies. We concentrate on the period after the sovereign debt crisis because this is the time that saw a strengthening of populist movements: indeed, in the 2013 elections the Movimento 5 Stelle gained a large share of the votes and it was just edged out by the Partito Democratico (PD) that managed to form a succession of coalition governments, led by Enrico Letta, Matteo Renzi, and Paolo Gentiloni. This all ended with the general elections in March 2018 that saw the Movimento 5 Stelle as the major winner, with the Lega in third position, and opened

the door to a coalition government between the these two populist parties that lasted until the summer of 2019.

The dates we consider are those for: 1) Italian general political elections for the House and the Senate, as well as elections for the European Parliament; 2) the appointment (*incarico*) by the President of the Republic of a designated Prime Minister (who is in most cases, but not all, later approved by Parliament); 3) the presentation of the budget law (*Documento di Economia e Finanza*, DEF) in the spring and the

ropean Union and Euro membership. The best variable to summarize these risks is the CDS spread on Italian government bonds as it is an insurance premium that re ects the probability of default, the expected loss in that case, and a risk adjustment.

As a simple illustrative example, let s_{k0} denote the spread on a CDS contract on an underlying one-period bond with one-euro notional principal, having issuer k as the reference entity (the Italian government or a bank, in our case). Assume the premium is paid at the beginning of the period.[10] Let $_{k1}$ denote the recovery value in the event of default with $_{k1}$ *2* [0*;*

considered a credit event in the 2003-clause CDS contract. It is, instead, considered a default event in the 2014-clause contract if the switch is to a new currency that is not the US dollar, the Canadian dollar, the British pound, the Japanese yen and the Swiss franc, and it results in a loss for the investors.[12] In addition, the 2014- and 2003-clause CDS contracts can either be denominated in euros or in US dollars. The dollar-denominated contract protects against the depreciation of the euro relative to the US dollar in case of default on Italian sovereign bonds. It is a more liquid contract than the euro-denominated one and the spread, for corresponding maturities, is more closely aligned with the BTP-Bund spread.

Equation 1 describes well the euro-denominated 2003-clause CDS contract (denoting the premium on that contract as $s_{k0;03}$ and the payo $c_{k1;03}$). The spread for the euro-denominated 2014-clause CDS contract, that includes redenomination as a default event, can be written as,

$$s_{k0;14} = E_0(m_1 c_{k1;14})$$

$$= \overset{d}{k0} \quad E_0 f1 \quad k_1 \text{fj]TJ/F22 11.9552 Tf 1332210 Td [( )]TJ/F( )]TJ/F22 1i-46-1.793 T}$$

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equal to the previous ones times $e_1=e_0$, where e_t is the euro per dollar exchange rate at time t, i.e., $c^{\$}_{k1;i} = c_{k1;i} \quad e_1=e_0$ with $i = 03;14$; $c_{k1;i}$ is de ned in Equations 1 and 2.

4 Evolution of CDS spreads and political events in Italy

In this section, we summarize the evolution of various CDS spreads on sovereign and bank bonds for Italy and we compare it with that of other euro-zone countries. We then discuss the political evolution in Italy and show how it is re ected in changes in the sovereign CDS spread around our selected dates, our instrument of choice for political risk shocks.

4.1 CDS spreads in Italy and in other euro-zone countries

Both 2003- and 2014-clause sovereign CDS spreads (CDSITA03 and CDSITA14, respectively) for the dollar-denominated (USD) ve-year contracts together with BTP-Bund spread for corresponding maturities are reported in Figure 1. The two CDS spread series move largely together until the latter part of the sample. The spread on the 2003-clause CDS declined substantially during 2013 and 2014 from the peak of 591 basis points reached at the height of the sovereign-debt crisis (15 November 2011, then followed by a second peak of 558 basis points, in mid-June 2012), continuing the downward movement that followed the \Whatever it Takes" speech by Mario Draghi in July 2012 and the announcement of the government bond purchasing program of countries under distress (the Outright Monetary Transactions program). CDSITA03 and CDSITA14 uctuate together between 80 and 180 basis points until the beginning of 2017, but then they begin to diverge. Both series rst decrease, reaching the lowest point in the end of April 2018 (58 and 85 basis points, respectively), although CDSITA14 starts decreasing later and it remains 30 basis points above CDSITA03. Most importantly, starting from June, the two contracts diverge very substantially, with CDSITA14 displaying much larger increases, reaching 286 basis points in mid-November 2018. CDSITA03 also increases but only to 177 basis points, with the di erence re ecting an increase in redenomination risk.[14] The BTP-bund contract uctuates together

[14]

with the CDS spreads. In the latter part of the period, the BTP-bund spread is more closely associated with CDSITA14 with an overall correlation of .966.

The spreads on the dollar-denominated CDS contracts for bank bonds with 5-year

there is a causal e ect of Italian political risk shocks on the spreads of other countries in Section 6.4.

What distinguishes Italy from the other euro-zone countries is the high debt-to-GDP ratio and a weak performance of the real economy. The debt-to-GDP ratio climbed over the crisis from 116.5% to 129.0% in 2013. It touched a peak of almost 132% in 2014 and then it stabilized around 131% until 2017, with a small increase to 132% in 2018. Moreover, the growth rate of GDP per capita was below the European average. For instance, during the period 2013-2018 the Italian growth rate was 0.45% while the average for the original 12 Euro countries was 1.58%. Moreover, the growth rate of multi-factor productivity (MFP) was essentially zero (although the disappointing

that are re ected in an increase in the spread around those dates. The loss by Renzi in the constitutional referendum in December 2016 does not generate an increase in our measure of political risk. Actually, the choice of Paolo Gentiloni as Prime Minister leads to a decrease in the CDS spread. Things remain relatively uneventful during the Gentiloni government, although the European Commission raised concerns for the insu cient progress in debt reduction and for its future evolution.

are noticeable in 2019 in correspondence of the European elections (that resulted in a success for the Lega), of the announcement of the intention to introduce MiniBOT as a way to pay debts of the Public Administration to the private sector (interpreted by the markets as a potential precursor to a new currency), and of the opening by the European Commission of a procedure for excessive debt against Italy. Following the downward adjustment to the budget de cit by the Italian Government and the decision by the Commission not to proceed, the sovereign spreads fell below 200 basis points. Even then, they remained higher than those for any other Euro country, except Greece. The decision of the Lega in early August to withdraw from the coalition government has been associated with an increase of the spread again to levels above the 200-basis point mark because markets feared an earlier election with a strong showing by the Lega.

This overall picture highlights the sensitivity of the spreads to events and actions that raise doubts about the sustainability of government debts and scal stability and that increase uncertainty about the Italian position in Europe. At the same time it points to the importance of institutional constraints such as the European Commission and the Italian Presidency that act as a break against risky scal policies and/or a repositioning of Italy with respect to the scal rules and the Euro. Finally, one needs to remember that the spreads have been a ected by the accommodating stance and provision of ample liquidity to the banking sector that has characterized the European Central Bank policy during this entire period. This has contributed, together with the institutional breaks just mentioned, to keeping the spreads for Italy from skyrocketing and reaching the levels observed during the sovereign debt crisis.

5 Econometric methodology

Our analysis relies on the Local Projections{Instrumental Variables (LP-IV) estimator to assess the e ect of policy and institutional risk on nancial markets and the real economy.[15] We opt for LP-IV instead of simply using the change in the sovereign CDS

[15]One reason why we employ LP-IV is because there is evidence in our dataset against invertibility which precludes the use of SVAR-IV. See Stock and Watson (2018), Section 2.2 and 2.3 for a discussion on invertibility. More precisely, we use the estimation strategy and apply the invertibility test discussed in Section 3 by Stock and Watson (2018) and we largely reject the null hypothesis of invertibility. See also Forni and Gambetti (2014) for a discussion on the concept of invertibility and a di erent test for it.

spread on our selected dates as a proxy in non-instrumented LP, because our measure for policy and institutional risk - most likely - captures only a part of the shock (i.e., there is relev5d027(k)-361trelevrelevour54(olicy)-360(and54(60(ins-355tional)-361(risev)560(-)-ev)thata

the elements of which will be discussed below. The requirement that Z_t be uncorrelated with future " is automatically satis ed when Z_t contains only variables realized at date t or earlier, as it follows from the de nition of shocks as unanticipated structural disturbances. The condition that Z_t be uncorrelated with past ", instead, is restrictive and it requires Z_t to be unpredictable.

Equation 4 can be rewritten as $Y^{?}_{i;t+h} = {}^{i}_{1;h} Y^{?}_{1;t} + u^{i?}_{1;t+h}$ where $x^{?}_{t} = x_t$ Proj$(x_t | W_t)$. Using conditions 1.-3., ${}^{i}_{1;h}$ can be estimated following standard IV procedures:

$$ {}^{i}_{1;h} = \frac{E(Y^{?}_{i;t+h} Z^{?}_{t})}{E(Y^{?}_{1t} Z^{?}_{t})}. \tag{5} $$

In our speci c case, Z_t represents our instrument constructed as the change in the closing value of the CDS spread between the day before the event and the day of the event controlling for a set of variables W_t. This is equivalent to use the unforecastable part of Z_t as an instrument. In addition, Y_t represents a set of outcomes variables discussed in details at the beginning of Section 6.1 and 6.2.

When we use daily data, we include sovereign and banks CDS spreads, BTP-Bund spreads, stock market returns and implied volatility, all in rst di erences. $Y_{1;t}$, our indicator variable, is the series of the sovereign CDS spread in rst di erences, so that a unit shock in nancial risk is normalized to generate a unit increase in the sovereign CDS spread. W_t is a vector of controls which includes: (1) past realizations of Z_t and Y_t; (2) contemporaneous and lagged values of the log-change in the VIX; (3) contemporaneous and lagged values of the rst principal component of the change in the CDS spreads for euro countries (excluding Greece and Italy), plus the UK. We include the last two variables to controls for global factors a ecting nancial markets.[16] One can give an intuitive interpretation of this procedure. Suppose $Y_{i;t}$ is the FTSE

[16] For instance, Longsta et al. (2011) nd that there is a high degree of commonality in sovereign credit spreads across countries suggesting that they are driven more by global market factors than by country-speci c fundamentals. The exclusion of Greece in calculating the rst principal component is due to the lack of observations of its CDS spread because its market was not operative between March 2012 and June 2013 and, even after that, it took time for the level of activity to recover. The exclusion of Italy is motivated by the fact that the change in the CDS spread appears also as a dependent variable. In any case, the inclusion of Italy (and/or Greece when the data are available) leads to similar conclusions. In addition, note that if we run a regression of the rst di erences in CDS spreads on past changes of the CDS itself and on past changes of the other nancial variables, we nd that it contains a statistically signi cant but very small predictable component. Then, since our instrument is the change of the CDS on certain dates, the inclusion of a set of lagged controls help us to satisfy the lead-lag exogeneity condition.

smaller portion of the forecast error variance of nancial and real variables.[18] This is not surprising as the CDS spread better captures the tail risk associated with threats to debt sustainability together with the possibility of an exit from the Euro. Therefore, we

four working days. This suggests that it takes time for the peak of the effect to be realized as the implications contained in the shock are decoded and the investment or risk mitigation strategies are implemented. The responses are highly significant and, moreover, one can also reject the hypothesis that the response after four days is equal to the impact response at the 5% significance level. This can be seen in Section 3 of the Online Appendix where we report the distribution of the difference between the impact and the 4th day response constructed using 2000 block-bootstrap replications. Note, moreover, that even after 21 working days the response remains above one.

The impulse response of the BTP-Bund spread on bond with five years remaining maturity also builds from 1 to 2.5 percentage points and equals approximately 2 percentage points even after three weeks (the effect on the 10-years BTP-Bund spread is slightly smaller). There is also a significant and persistent response of the CDS spread on bank bonds, although its size is somewhat smaller as it fluctuates between 0.5 and 1.5. We will discuss in Section 7 how that can be rationalized in the light of the accommodating policies of the European Central Bank and the improved balance sheets of Italian banks. Political risk shocks have also significant negative effects on stock market returns, as measured by the FTSE, at the 5% significance level.

These effects are economically significant, particularly the ones on the spreads. For instance, the adverse political risk shock associated with the results of the 2018-elections (that saw the success of the populist parties) and the announcement of the appointment of Giuseppe Conte as prime minister of a Lega-government (with the Euro-skeptic Paolo Savona as the presumed Minister of Economy and Finance), resulted, respectively, in 7 and 16 basis point change in the sovereign CDS spread. These two shocks alone would have generated a sustained change in the BTP-Bund spread of about 45 basis points.[19] Conversely, the intervention of President Mattarella that lead to a second mandate to Giuseppe Conte to form a government (with Paolo Savona in the less important position of Minister for European Affairs) was associated with an initial drop of the sovereign CDS spread of 19 basis points that reversed most of the 5-year BTP-Bund spread increase. The impulse response functions for the spreads also emphasize the substantial moderating effect of the European Commission interventions. In particular, when the European Commission accepted the revised draft budgetary plan because now

[19] Paolo Savona is also the main author of a plan of how Italy could exit the Euro (Plan B).

in line with the EU scal rules, we register a drop in the sovereign CDS spread of about 13 basis points which moderated, but did not nullify, the increase in the spreads due to the market reactions to the initial budget drafts that allowed for a larger de cit.[20] As

year). What explains this difference? Although this is not the place to fully discuss this issue, it is likely that an important role was played by the pro-European orientation of the Renzi government, its reformist agenda, and its better designed fiscal policy that was also more supply-side friendly.[21]

A more rigorous way to assess the quantitative importance of political risk shocks is to calculate the forecast error variance decomposition. We rely on Gorodnichenko and Lee (2017) and Plagborg-Møller and Wolf (2018). In particular, since we do not observe the true shock, the point estimate can be interpreted as a lower bound of the forecasted error variance explained by political risk shocks. In Figure 5 Panel b, we show the daily forecast error variance decomposition. Risk shocks explain at least a 10% of the variability of financial variables over time. Although this quantity may seem not large, there are two elements that need to be considered to correctly interpret this result. First of all, as emphasized above, this is a lower bound, and the less precise is our instrument on a daily basis the larger is the bias between the true value and our estimate. Secondly, financial variables at a daily frequency are extremely noisy and are continuously buffeted by a stream of news, while our instrument is based on selected few dates that represent only around 4% of all the total number of days used in estimation. Indeed, we will show below that at a monthly frequency political risk shocks explain up to 20% of the forecast error variance of most variables.

6.2 Main results: monthly data

It is interesting to compare our instrument for political risk, meant to capture concerns regarding budgetary policy, government debt sustainability, and Euro membership with the well-known economic policy uncertainty (EPU) index developed by Baker et al. (2016) for Italy.

We first obtain the unanticipated component of the change in the EPU index by regressing it on one lag of itself, of the log of the Purchasing Manufacturing Index (PMI), of the log of a stock price index (FTSE MIB), and of the EONIA (the European Overnight Index Swap) as a proxy for monetary policy. We then calculate its correlation with our instrument. The correlation over the entire period January 2013 - August 2019 is about 0.1 and it is not significant at conventional levels. However, if we focus on the period after September 2014 the correlation is above 0.2 and it is significant at about the 10% level. Its value increases to more than 35% (with a p-value of around 3%) when we consider the sample starting after the middle of 2016. Both our political risk shocks and the shocks to the EPU index are plotted in Figure 8. We observe that many, but not all of the spikes in the latter period tend to coincide, whereas in the first period innovations in the EPU index have greater variance. The overall impression is that there is a common component that affects both indexes. However, our index is more driven by concerns about the sustainability of debt in Italy and about a possible exit from the Euro, which become acute in the second period because of the ascendancy of populist parties. The EPU index shocks in the first part of the sample period capture also other and more general sources of uncertainty.

6.3 Redenomination spread and quanto spread

We have described how CDS contracts differ by what is classified as a default event and by the currency of denomination. Focusing on the first dimension, let us consider the information contained in the difference between the CDS spread of the 2014- and the 2003-clause contract. Using Equations 1 and 2 we can write

$$\begin{aligned} s_{k0;14} - s_{k0;03} &= \mathrm{E}_0[m_1(c_{k0;14} - c_{k0;03})] \\ &= \frac{r_{k0} - \mathrm{E}_0[1 - \ _{k1} j \ _{k1} < 1]}{1 + r_0} + \ _{k0}^{r}\mathrm{Cov}_0[m_1; (1 - \ _{k1}) j \ _{k1} < 1]: \end{aligned} \tag{6}$$

Therefore, the di erence between these two spreads captures the probability of redenomination, the expected losses to the depreciation of the new currency relative to the euro, and a risk adjustment term equal to the conditional covariance between the stochastic discount factor and the losses under redenomination.[22] This di erence is called as the \ISDA basis" and we will use it as our measure of redenomination risk.

Let us focus now on the currency of denomination of the CDS contract (with premium $s_{k0;03;e}$). Consider for simplicity the 2003-clause contract. The spread on the euro denominated CDS contract is described by Equation 1. The dollar-denominated contract has instead a payo equal to $c_{k0;03;\$} = (1 \quad {}_{k1})e_1=e_0$, where e_t is euro-per-dollar exchange rate at time t, to cover for a (likely) depreciation of the euro in case of default. The premium can therefore be written as $s_{k0;03;\$} = f \; {}^{d}_{k0}\, \mathrm{E}_0[(1 \quad {}_{k1})e_1=e_0 j \; {}_{k1} < 1]g=(1 + r_0) + \mathrm{Cov}(m_1; c_{k0;03;\$})$. The di erence in premia on the CDS denominated in di erent currency is called the quanto spread and can be written as,

$$\begin{aligned} s_{k0;03;\$} \quad s_{k0;03;e} &= \mathrm{E}_0[m_1(c_{k0;03;\$} \quad c_{k0;03;e})] \\ &= {}^{d}_{k0} \quad \frac{\mathrm{E}_0[(1 \quad {}_{k1})(1 \quad e_1=e_0) j \; {}_{k1} < 1]}{1 + r_0} \\ &+ \; {}^{d}_{k0}\mathrm{Cov}_0[m_1; (1 \quad {}_{k1})(1 \quad e_1=e_0) j \; {}_{k1} < 1]: \end{aligned} \tag{7}$$

Therefore, the quanto spread re ects the probability of default and the expected depreciation of the euro relative to the dollar, together with a risk adjustment. For the more complex 2014-clause contract it would also re ect the probability of redenomination and the expected devaluation of the new currency with respect to the euro.

The redenomination spread (ISDA basis) and the quanto spread for Italy are shown in Figure 9. The impulse responses to a political risk shock of the redenomination spread and the quanto spread at a daily frequency are, instead, reported in Figure 10, together with the proportion of the forecast error variance explained by the same disturbances over the period September 2014{August 2019. We continue using the change in dollar-denominated CDSITA14 on our selected dates as an instrument. Adding changes in CDSITA03 as an additional instrument brings no new information and results remain unchanged as we have already discussed. They also remain very similar if we use only

[22] We could also have written the redenomination spread in terms of risk adjusted expectations, $E(\,)$. In that case, $s_{k0;14} \quad s_{k0;03} = \frac{\mathrm{E}_0[c_{k0;14} \quad c_{k0;03}]}{1+r_0} = \frac{\sim^{r}_{k0} \quad \mathrm{E}_0[1 \quad {}_{k1} j \; {}_{k1}<1]}{1+r_0}$ where $\sim^{r}_{k0}$ is the risk-adjusted probability of redenomination.

the change in CDSITA03 as an instrument. As displayed in the first row of Figure 10, political risk shocks have a significant impact effect on both the redenomination spread and the quanto spread. Nevertheless, the effect is quantitatively larger and more persistent for the redenomination spread for which it remains significant even after 6 working days while that is not the case for the response of the quanto spread. The variance explained, over the same period, is closed to a fifth for the redenomination spread.

Figure 11 shows the monthly counter-part of Figure 10. The results obtained at a daily frequency are fully preserved at a monthly level for the redenomination spread and become stronger and more significant for the quanto spread.[23] Again, political risk shocks explain an important fraction of the variance of the two dependent variables. Specifically, political risk shocks explain more than 20% and 15% of the forecast error variance of redenomination spread and quanto spread, respectively, after a few months.

6.4 Spillover effects to other euro-zone countries

In this section we test whether political risk shocks in Italy impact the financial markets of other euro-zone countries (France, Germany, Ireland, Portugal, and Spain) and provide a quantitative assessment of such effects. We employ the same econometric strategy described in Section 5 with financial variables of other European countries as dependent variables. In essence, we test for spillovers from Italy to other euro-zone countries by regressing the change in country CDS spreads on changes in the Italian CDS spreads, instrumented with the change of the spread on our selected dates.[24] In order to be cautious, in the construction of the instrument we exclude the dates of European elections and the dates in which Italy submitted a draft budget to the European Commission (eight dates in total) as it may be close to the time when other countries do so as well. We have done this to avoid overlapping events and to make sure that on our selected dates no important news about other countries or Europe in general are revealed. Moreover, recall that, in addition to the log-change of the VIX, we control for

[23] For the monthly results we use the change in dollar-denominated CDSITA03 as an instrument, as

PC CDS14 to account for common global and European-wide factors that drive the CDS spreads.

We show the response of foreign CDS contracts to a political risk shock at a daily frequency in Figure 12. We focus on French, German, Irish, Portuguese, and Spanish 2014-clause CDS contracts denominated in dollars. Again, the indicator variable is CDSITA14 denominated in dollars and in all the Local Projection regressions we control for four lags of the instrument, of the indicator variable, and of all the dependent variables, together with the current value and three lags of the log-change in the VIX, as a proxy for international volatility, and of PC CDS14 as a proxy for general European risk. In calculating the first principal component we exclude also the country under examination as the CDS spread also appears as a dependent variable. Interestingly, Italian political risk shocks have a positive and significant effect on many of the countries considered either on impact or with few lags. In particular, Portugal and Spain display a pronounced response which is significant at the 5% level and dies out only after 5 and 7 working days, respectively. They are significant at the 10% level for France and Germany, but they are much smaller. The spread on CDS contracts for Ireland does not respond significantly.[25]

An analogous message is delivered by Figure 13, where we focus on the daily-frequency impulse responses of the 10-year government bond yield for France, Ireland, Portugal, and Spain in deviation from the 10-year German Bund yield. The responses for Spain, Ireland, and France are positive and significant at the 5% level with some lags. As before, Portugal displays responses similar to Spain in size but significant only at the 10% level.

As a robustness exercise for both the CDS spread and the 10-year bond yield spread relative to the Bund, we have also been more drastic in reducing the list of dates used in constructing our instrument. More specifically, we removed other seven dates, in addition to the eight already eliminated for the base results, if they fall in a 2-sided window of seven days on each side, centered on election dates of other euro countries (47 events in total), the Brexit referendum, and other key events in the Brexit process

[25] In all the cases, we do not to show the variance explained by Italian political risk shocks because the lower bound is close to zero for most countries. As explained in Section 6.1, this result is not surprising because financial variables at a daily frequency are extremely noisy and are continuously buffeted by a stream of news while our instrument is based on few selected dates that represents only around 4% of all the total number of days used in estimation.

(32 additional events). Our conclusions remain unaltered (see the Online Appendix, Section 1).

The economic and statistical signi cance of the e ects of Italian political risk shocks on the domestic economy is a very important result on its own. However, the existence of spillovers on other euro-zone countries makes the analysis of the Italian case especially important.

6.5 Robustness checks

The baseline results are robust to several variations in the experiment design and the main message on the empirical importance of political risk shocks remains unchanged. These additional exercises are reported in the Online Appendix, Section 1.

The domestic and international results at a daily frequency are robust to using

7 Real effects

Results of the previous section highlight the importance of political risk shocks for financial variable fluctuations. We now discuss how risk shocks may be transmitted to the real economy and present some evidence on their effect on real variables.

7.1 Why political risk matters

Political risk shocks can have an adverse effect on the economy through several channels. First, a rise in the sovereign CDS spread on bonds is associated with an increase in the cost of funding for the Italian government putting further stress on public finances and requiring a higher primary surplus to comply with the European fiscal rules. It may also generate an adverse self-reinforcing loop whereby higher deficits (inclusive of debt costs) lead to increases in the debt-to-GDP ratio, and further increases in the deficit.

Second, the rise in sovereign CDS spreads can have a negative effect on banks' balance sheets as they hold substantial amounts of sovereign debt in their portfolios.[27] A fall in the value of government bonds has multiple effects on a bank's balance sheet. A capital loss on sovereign bonds may have an adverse impact on a bank's profit and losses and/or on book equity. This depends on whether sovereign bonds are marked to market (which, in turn, depends upon whether they are classified as trading securities, securities available for sale, or securities held to maturity) and upon the changing accounting treatment of each category.[28] Regardless of the exact way losses are accounted for, investors may incorporate information about the worsening quality of a bank's security portfolio in its financial market valuations and cost of funding. Moreover, if access to non-deposit funding is conditional on the posting of collateral (as in the repo market), the decrease in value of government bonds may affect access to such sources. The

[27] Italian banks in 2013 had the highest share of domestic government bonds over total assets compared to all other Euro countries (9%) and had the second highest home bias (97% of total government bonds held were issued by the Italian government).

[28] The securities in the "held to maturity" (now "held to collect") portfolio are not marked to market. Those for which the Fair Value Option is chosen (loosely, those in the "trading" book) are marked to market and a capital loss would impact immediately the profit and loss account (and hence shareholder equity). A fall in value of those held as "available for sale" would impact firms' equity (but not profit and losses). However, until recently, this change could be sterilized and would not affect the Tier1 Capital Ratio. After January 2018, this sterilization is no longer allowed for any bank, and losses negatively affect the regulatory capital ratios. Over time there has been a transfer of assets by banks towards the "held to maturity" portfolio, which insulates the balance sheet from fluctuations in the market value of government bonds but at the cost of greater balance sheet rigidity.

7.2 Results on real e ects

In order to test whether policy and institutional risk a ects real variables we use the same LP-IV procedure presented so far. As we did before, we normalize impulse responses so that a unit change in political risk has a unit impact on sovereign CDS spreads. In line with the monthly analysis of nancial variables, we build the instrument for political risk using the spread on the dollar-denominated 2003-clause sovereign CDS contract. Again, we opt for this contract so as to maximize the number of observations in our analysis, 78 in our case from January 2013 to June 2019. That said, 78 monthly observations do not constitute a very large sample and this ought to be considered in interpreting the real results and their precision.

As endogenous variables we use i) the log-transformation of the Markit Purchasing Managers' Index (PMI) in the manufacturing sector; ii) the log-deviation of the Italian PMI manufacturing to the Global PMI manufacturing (hereafter relative PMI); iii) Composite Leading Indicator (CLI) provided by OECD database; iv) a survey of rms' con dence provided by the Italian National Institute of Statistics (ISTAT).

Di erently from the nancial measures presented above, these real variables are not a uni0yimp0y -0y-0ycon (8(Te)-0y)nge

Considering the limited number of observations and of political events, these results constitute interesting evidence that political and institutional risk does not only a ect nancial variables but may also propagate to the real economy. However, quantitatively speaking, results are not particularly large. Variance decomposition analysis indicates a lower-bound of 5% after a couple of months. A possible explanation as to why the negative e ects on the real economy were not large is that the bank cost-of-funding transmission channel was muted during this period because of the stance of monetary policy and the improvement in banks' balance sheet position.

Our sample period has been characterized by an overall accommodating stance of monetary policy with low and even negative policy rates, with the provision of ample liquidity to the banking sector, and with a continuation of the asset purchase program.[30] In particular, the various versions of the long-term re nancing operations (LTROs and TLTROs) that have provided access to cheap liquidity for the banking sector and have tied the conditions to the lending policy of the banks (TLTROs). Moreover, the announcement of TLTRO III, starting in September 2019, has cushioned banks from the potential adverse consequences of the coming to an end of TLTRO II in 2020.

The transmission of political risk shocks on lending rates also depends upon the overall strength of banks' balance sheets. The latter has been improving also because of recapitalization exercises following the European Banking Authority (EBA) stress tests and the reduction in the share of non-performing loans due to the positive, albeit less than spectacular, growth rates of real GDP from the beginning of 2015 until the middle of 2018 (see the Online Appendix, Table 1) as well as to the action of previous center-left governments and to the intervention of the supervisory authorities.[31] All this suggests that the cost-of-funding channel was weak in the period we are examining. This is

[30] More precisely, in October 2018 the ECB Governing Council announced the intention to end the net asset purchases at the end of December and this is con rmed at the December meeting. However, the Governing Council announced that it intended \to continue reinvesting, in full, the principal payments from maturing securities purchased under the asset purchase program [.. pa-27wo160ea(.)-364tpaymennetc

An important feature of the Italian experience is that the rise and electoral success of populism has occurred in the context of a high level of debt and weak performance

Boutchkova, M., H. Doshi, A. Durnev, and A. Molchanov (2012). Precarious politics and return volatility. *The Review of Financial Studies 25*

Giavazzi, F. and M. Pagano (1995). Non-keynesian e ects of scal policy changes: International evidence and the Swedish experience. *NBER Working Paper 5332*.

Gilchrist, S., J. W. Sim, and E. Zakrajsek (2014). Uncertainty, nancial frictions, and investment dynamics. *NBER Working Paper 20038*.

Gomez-Puig, M. and S. Sosvilla-Rivero (2016). Causes and hazards of the euro area sovereign debt crisis: Pure and fundamentals-based contagion. *Economic Modelling 56*, 133{147.

Goodell, J. W. and S. Vähämaa (2013). US presidential elections and implied volatility: The role of political uncertainty. *Journal of Banking & Finance 37*(3), 1108{1117.

Gorodnichenko, Y. and B. Lee (2017). A note on variance decomposition with local projections. *NBER Working Paper 23998*.

Gros, D. (2018). Italian risk spread: Fiscal versus redenomination risk. *VoxEU*, 29 August.

Kuttner, K. N. (2001). Monetary policy surprises and interest rates: Evidence from the Fed funds futures market. *Journal of Monetary Economics 47*(3), 523{544.

Romer, C. D. and D. H. Romer (2010). The macroeconomic e ects of tax changes: Estimates based on a new measure of scal shocks. *American Economic Review 100* (3), 763{801.

Snowberg, E., J. Wolfers, and E. Zitzewitz (2007). Partisan impacts on the economy: Evidence from prediction markets and close elections. *Quarterly Journal of Economics 122* (2), 807{829.

Staiger, D. and J. H. Stock (1997). Instrumental variables with weak instruments. *Econometrica 65* (3), 557{586.

Stock, J. H. and M. W. Watson (2012). Disentangling the channels of the 2007-2009 recession. *Brookings Papers on Economic Activity*, 81{135.

Appendix A: data description

Variable list

Variable name	De nition
CDSITA14 USD	$-denominated 5-year CDS spread on Italian sovereign bonds, Markit, 2014 ISDA clause, daily frequency.
CDSITA03 USD	$-denominated 5-year CDS spread on Italian sovereign bonds, Markit, 2003 ISDA clause, daily frequency.
CDSBANK14 USD	CDS index for Italian banks based on $-denominated 5-year CDS spread on Italian banks' bonds (see next section), Markit, 2014 ISDA clause, daily frequency.
CDSBANK03 USD	CDS index for Italian banks based on $-denominated 5-year CDS spread on Italian banks' bonds (see next section), Markit, 2003 ISDA clause, daily frequency.

Construction of bank CDS spread variables

Since the CDS contract is related to the speci c issuer, an individual bank in this case, we construct an index by weighing the bank speci c CDS spread for the relative size of the reference entity (measured in terms of bank's total assets). Notice that, because we want to avoid jumps in the indices that are solely induced by the availability of CDS spreads (for some banks, CDS started being priced in the middle of our period of interest and other instruments ceased being available), we focus on the subsample of banks with complete CDS data in the 2013-2019 time span (Unicredit, Intesa Sanpaolo, Monte dei Paschi di Siena, and Mediobanca). Note that we have included the largest banking groups and that the CDS of the excluded banks still tend to comove with those of the included nancial institutions. In addition, it is worth noting, that we have included the largest banking groups and that the CDS of the excluded banks still tend to comove with those of the included banks.

Details on real variables

based on a set of time series that exhibit leading relationship with the GDP at turning points. The component series for each country are selected based on various criteria such as economic signi cance, cyclical behavior, data quality, timeliness, and availability. For Italy, these series are: i) consumer con dence indicator, ii) manufacturing order books, iii) de ated orders for total manufactured goods, iv) future tendency of manufacturing production, v) CPI, and iv) imports from Germany. For more information, see https://data.oecd.org/leadind/composite-leading-indicator-cli.htm.

ISTAT economic sentiment indicator, a general index of con dence of manufacturing companies based on a survey carried out by the Italian National Institute of Statistics (*Clima di ducia delle imprese manifatturiere*). The sample is composed of a panel of about 4000 rms with ve or more employees, strati ed by economic sector, geographic partition, and rm size. The survey collects qualitative data on current and expected cyclical situation of manufacturing rms, providing assessments and expectations on i) rm's order books, ii) production, iii) liquidity conditions, iv) assessment on stocks of nished products, v) expectation on rm's employment, vi) expectation on rm's selling prices, and vii) expectations on the Italian general economic situation. For more details, see http://siqual.istat.it/SIQual/visualizza.do?id=8888945&refresh=true&language=EN.

Appendix B: block bootstrap

Following Kilian and Kim (2011) we estimate con dence interval using the block bootstrap procedure. As emphasized by Kilian and Kim (2011), we opt for this approach because the error term in the Local Projection regressions is most likely serially correlated. The LP impulse response estimator for horizon h depends on the tuple,

$$T_h = [y_{t+h} \quad "_t \quad "_{t\ 1} \quad ::: \quad "_{t\ J} \quad x_{t\ 1} \quad ::: \quad x_{t\ I}] \tag{8}$$

where y_t is the dependent variable, $"_t$ our instrument for political risk shocks and x_t a series of controls. To preserve the correlation in the data, build the set of all T_h tuples for $h = 0;1;::::;H$. For each tuple T_h, employ the following procedure:

1. De ne $g = T \quad I + 1$ overlapping blocks of T_h of length I.[34]

2.

Table 1: Choice of dates

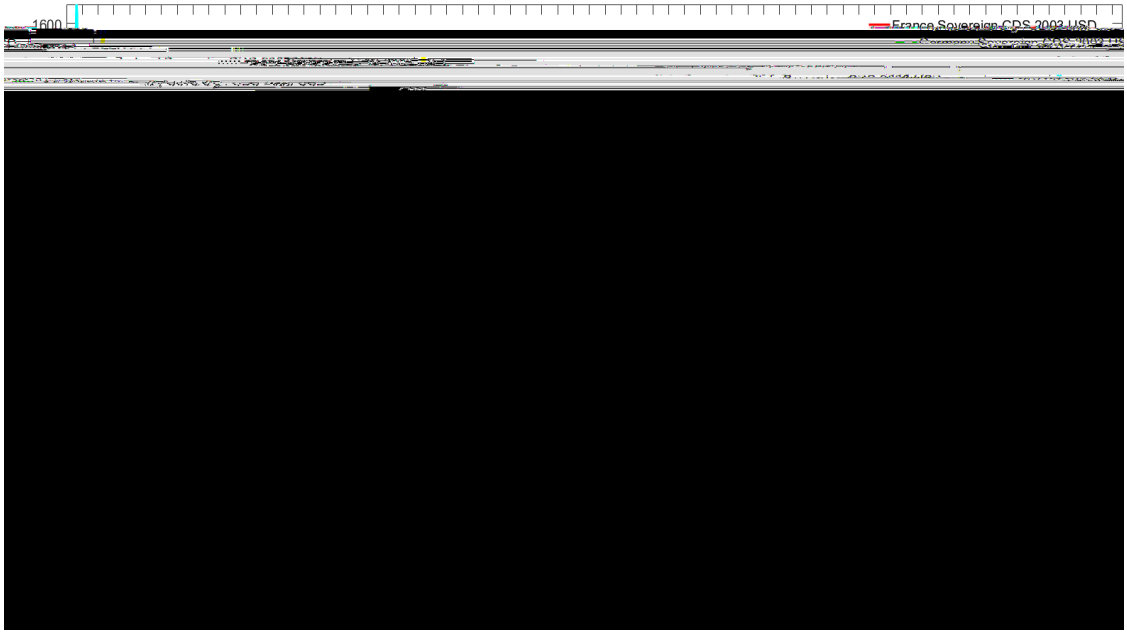
Dates	Event Description
25 February, 2013	Italian General Elections
10 April, 2013	D.E.F.
24 April, 2013	Letta Incarico
20 September, 2013	N.A. D.E.F.
15 October, 2013	Draft Budgetary Plan
15 November, 2013	European Commission Opinion on Draft Budgetary Plan
17 February, 2014	Renzi Incarico
8 April, 2014	D.E.F.
5 may, 2014	European Elections
30 September, 2014	N.A. D.E.F.
15 October, 2014	Draft Budgetary Plan
21 November, 2014	Italy sends letter to European Commission
28 November, 2014	European Commission Opinion on Draft Budgetary Plan
10 April, 2015	D.E.F.
18 September, 2015	N.A. D.E.F.
15 October, 2015	

Figure 1: Sovereign CDS spreads and BTP-Bund spread

The dotted red line is the sovereign CDS spread of the 2003-clause contract (CDSITA03). The solid black line is the

Figure 3: Sovereign CDS spread for Euro countries

(a) 2003-clause contract

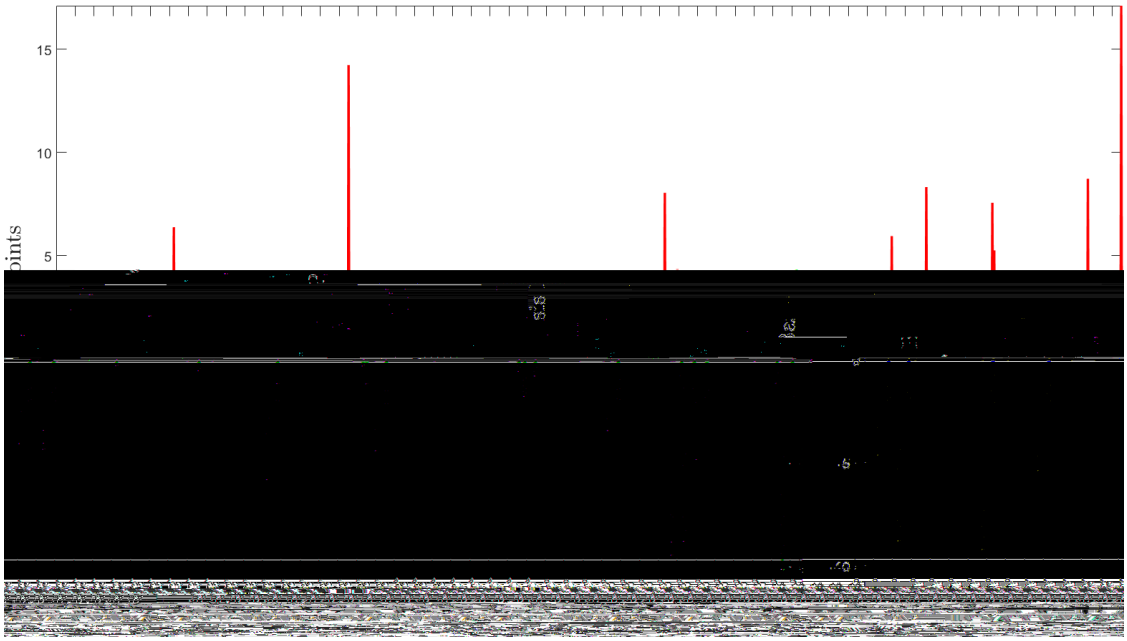


(b) 2014-clause contract

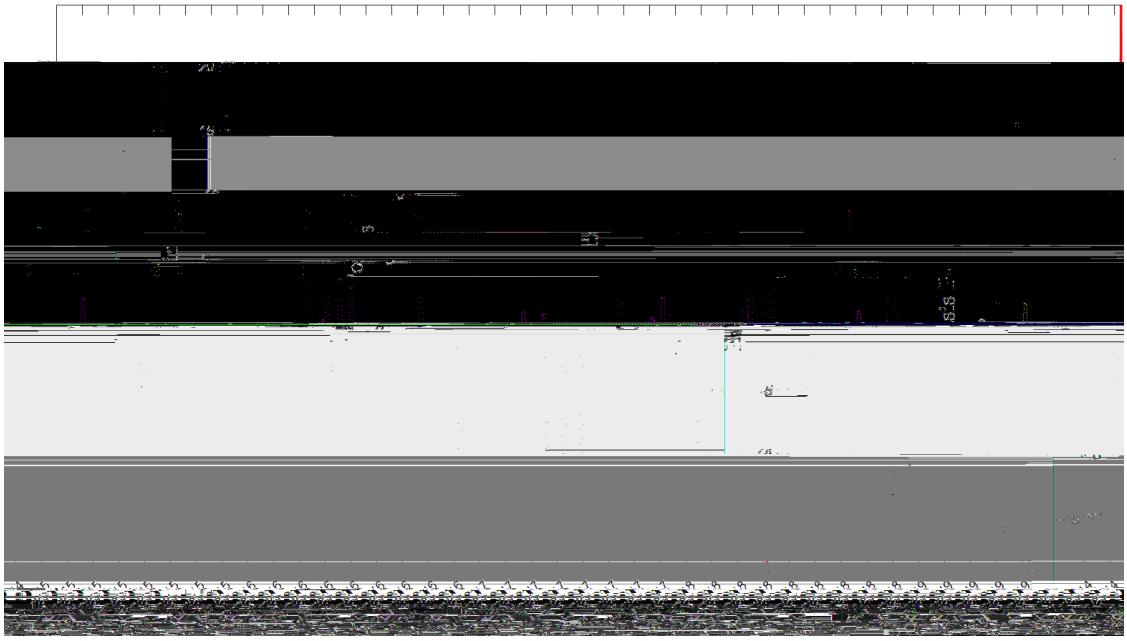
Panel a reports the spread for the dollar-denominated 2003-clause sovereign CDS contracts for France, Germany, Ireland, Italy, Portugal, and Spain with a 5-year maturity for the period January 2013 - August 2019. Panel b reports the spread for the dollar-denominated 2014-clause sovereign CDS contracts for France, Germany, Ireland, Italy, Portugal, and Spain with a 5-year maturity on the period after September 2014.

Figure 4: Sovereign CDS spread around political events

(a) using the 2003-clause contract



(b) using the 2014-clause contract

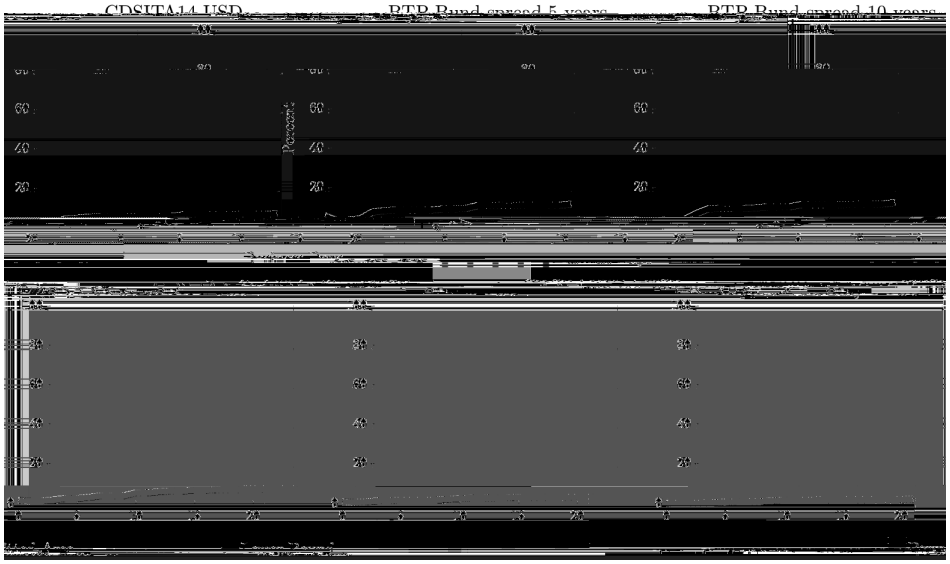


Panel a reports changes in the CDS spread of the Italian sovereign 2003-clause contract denominated in dollars around dates presented in Table 1. Panel b reports changes in the CDS spread of the Italian sovereign 2014-clause contract denominated in dollars around the same selected dates presented in Table 1. Changes are de ned as the closing price of the event day minus the closing price of the previous day.

Figure 5: Financial variables at a daily frequency

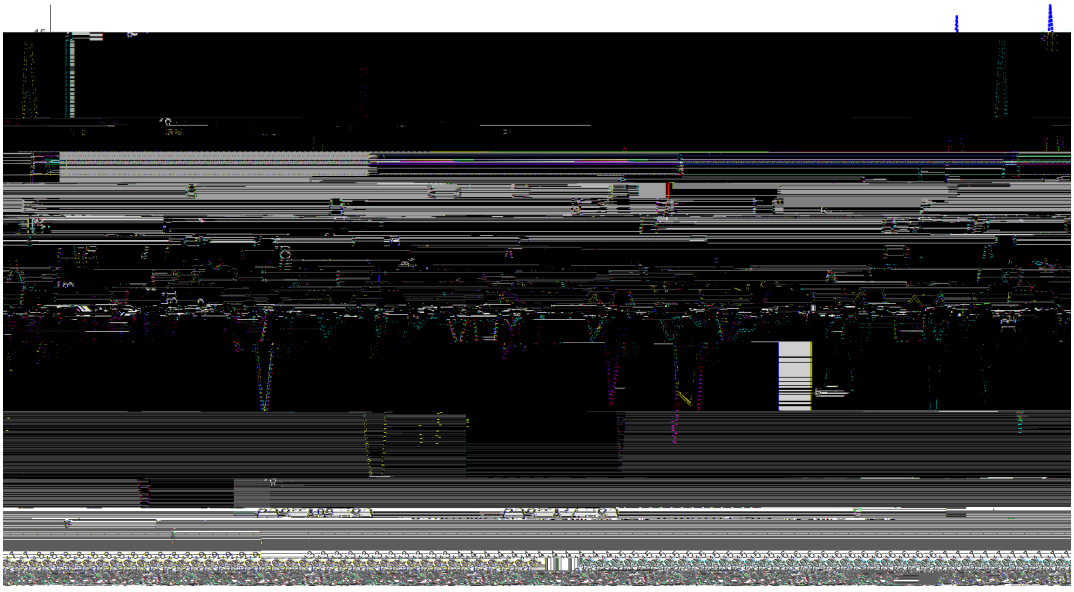
(a) Impulse response functions

(b) Variance decomposition



Panel a reports impulse response functions of un.-469(8ilyf)-469(u)-308cSl aolsitc-469(8itdlse)-0 G isi7.f 7r7G isi7.7(a)-470mpodlfr14unn

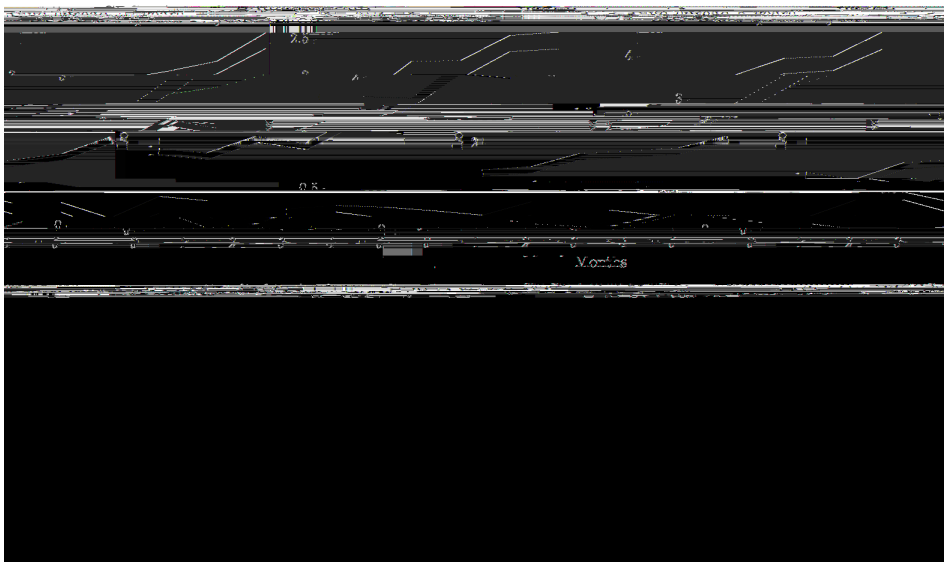
Figure 6: Political risk shock instrument at a monthly frequency



Instrument for political risk shocks at a monthly frequency. The solid red line is the monthly version of the variable presented in Figure 4 Panel a. The blue dotted line is the monthly version of the variable presented in Figure 4 Panel b. The daily changes are projected on the same set of controls used to obtain the results presented in Figure 5. The residuals from these regressions are the relevant variables to be cumulated on a monthly basis to obtain the gure above.

Figure 7: Financial variables at a monthly frequency

(a) Impulse response functions



(b) Variance decomposition

Panel a reports impulse response functions of nancial variables to a political risk shock at a monthly frequency. The solid black line is estimated via Local Projections - Instrumental Variables where the instrument is the change in the CDS spread for the 2003-clause contract (CDSITA03) on the selected dates and the indicator variable is CDSITA03, denominated in dollars at a daily frequency (with the controls used for Figure 5) and then cumulated at a monthly basis. The endogenous variables are the monthly counterpart { de ned as the last daily observation of the month { of the daily variables presented in Figure 5. In each regression, we control for one lag of the endogenous variable under consideration and one lag of the instrument. All the variables enters in the LP-IV regressions in rst di erences. The estimated responses are then cumulated in the graph above. Con dence bands are estimated with 2000 block-bootstrapped simulations. Panel b reports lower bound of the variance of daily nancial variables explained by political risk shocks. Results are derived from the impulse responses shown in Panel a using the same procedure suggested by

Figure 8: EPU index shocks and political risk shock instrument

The black line with circles is the monthly innovation in the EPU index by Baker et al. (2016) which refers to the left y-axis. The orange line with crosses is the monthly instrument for political risk shocks (shown in Figure 6) which refers to the right y-axis.

Figure 9: Redenomination spread and quanto spread

The solid red line is the redenomination spread (ISDA basis) de ned as the di erence between the sovereign CDS spreads for the 2014- and 2003-clause contracts (CDSITA14 and CDSITA03). Both contracts are denominated in dollars. The dashed blue line is the quanto spread, de ned as the di erence between CDSITA14 denominated in dollars and CDSITA14 denominated in euro.

Figure 10: Redenomination spread and quanto spread; impulses responses and variance decomposition at a daily frequency

The first row shows impulse responses of redenomination spread and quanto spread to a political risk shock at a daily frequency. The solid black line is estimated via Local Projections - Instrumental Variables where the instrument is the change in the CDS spread for the 2014-clause contract (CDSITA14) on the selected dates and the indicator variable is CDSITA14, denominated in dollars. In line with Figure 5, in each regression, we control for 4 lags of the instrument and all the endogenous variables and for the present value and 3 lags of the log-change in the VIX and of PC CDS14. Redenomination spread is defined as the difference between the sovereign CDS spreads for the 2014- and 2003-clause contracts (CDSITA14 and CDSITA03). Both contracts are denominated in dollars. The quanto spread is defined as the difference between CDSITA14 denominated in dollars and CDSITA14 denominated in euro. Confidence bands are estimated with 2000 block-bootstrapped simulations. The second row shows the lower bound of the variance of redenomination spread and quanto spread explained by political risk shocks. Results are derived from the impulse responses in the first row using the same procedure suggested by Gorodnichenko and Lee (2017). As shown by both Gorodnichenko and Lee (2017) and Plagborg-Møller and Wolf (2018), the variance explained by the instrument is a lower bound for the variance explained by the shock itself.

Figure 11: Redenomination spread and quanto spread; impulse responses and variance decomposition at a monthly frequency

The first row shows impulse responses of redenomination spread and quanto spread to a political risk shock at a monthly frequency. The solid black line is estimated via Local Projections–Instrumental Variables where the instrument is the change in the CDS spread for the 2003-clause contract (CDSITA03) on the selected dates and the indicator variable is CDSITA03, denominated in dollars. Redenomination spread is defined as the difference between the sovereign CDS spreads for the 2014- and 2003-clause contracts (CDSITA14 and CDSITA03). Both contracts are denominated in dollars. The quanto spread is defined as the difference between CDSITA03 denominated in dollars and CDSITA03 denominated in euro. In each regression, we control for one lag of the endogenous variable under consideration and one lag of the instrument. Confidence bands are estimated with 2000 block-bootstrapped simulations. The second row shows the lower bound of the variance of redenomination spread and quanto spread explained by political risk shocks. Results are derived from the impulse responses in the first row using the same procedure suggested by Gorodnichenko and Lee (2017). As shown by both Gorodnichenko and Lee (2017) and Plagborg-Møller and Wolf (2018), the variance explained by the instrument is a lower bound for the variance explained by the shock itself.

Figure 12: Spillover e ects on sovereign CDS spreads for euro-zone countries; impulse responses at a daily frequency

Impulse response functions of euro-zone country sovereign CDS spreads to a political risk shock at a daily frequency. All CDS contracts are denominated in dollars and use the 2014 clause. The solid black line is estimated via Local Projections {Instrumental Variables where the instrument is the change in the CDS spread for the 2014-clause contract (CDSITA14) on the selected dates and the indicator variable is CDSITA14, denominated in dollars. The estimated responses are then cumulated in the graph above. In each regression, we control for 4 lags of the instrument and all the endogenous variables and for the present value and 3 lags of the log-change in the VIX and of PC CDS14 (the country under examination is excluded when calculating PC CDS14). All the variables enters in the LP-IV regressions in rst di erences. Con dence bands are estimated with 2000 block-bootstrapped simulations.

Figure 13: Spillover e ects on gov. bonds yields relative to the Bund for euro-zone countries; impulses responses at a daily frequency

Impulse response functions of the 10-year yield spread over the bund for various euro-zone countries at a daily frequency. The solid black line is estimated via Local Projections-Instrumental Variables where the instrument is the change in the CDS spread for the 2014-clause contract (CDSITA14) on the selected dates and the indicator variable is CDSITA14, denominated in dollars. All variables enter the LP-IV regressions in rst di erences. The estimated responses are then cumulated in the graph above. In each regression, we control for 4 lags of 0iE49a dfor 41(one)sa0(177(41428(coy483d [(denominated)-3-300(s(der

Figure 14: Real variables: impulse responses at a monthly frequency

Impulse response functions of real variables to a political risk shock at a monthly frequency. The solid black line is estimated via Local Projections{Instrumental Variables where the instrument is the change in the CDS spread for the 2003-clause contract (CDSITA03) on the selected dates and the indicator variable is CDSITA03, denominated in dollars. The endogenous variables are the log-transformation of the Purchasing Manager Index of the manufacturing sector (PMI Manufacturing), the log-di erence between the Italian PMI Manufacturing and the Global PMI Manufacturing, the level of the Composite Leading Indicator from OECD database (OECD CLI), and the log-trasformation of a survey of rms' con dence (Firm Con dence). For the sources and de nitions of those variables see Appendix A. In each regression, we control for one lag of the endogenous variable under consideration and one lag of the instrument. Results are shown using di erent detrending techniques: (i) *BP Filter* is the High Pass lter removing periodicities above 24 frequencies; (ii) *Quadratic Trend* is a standard time quadratic trend; (iii) *Level* is variables without being treated and controlling for the past value of the dependent variable in each regression. Con dence bands are estimated with 2000 block-bootstrapped simulations.