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Holding out for a better deal: Brinkmanship in the Greek bailout negotiations

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Abstract

Greece and its creditors concluded negotiations over a third bailout by signing a Memorandum of Understanding on 19 August 2015. The dominant view among most economic policy analysts and commentators seems to be that the actions of the Greek government in the months before the deal had been erratic and lacked coordination. In this paper we argue instead that the decisions of the Greek leaders, including asking the voters to reject the earlier terms demanded by the creditors in a referendum, can be explained by the logic of brinkmanship. We develop a game-theoretic model to show that the actions of the Greek government are consistent with a strategy aimed at not only at getting a new bailout deal but also at improving its political terms.

JEL codes D78 · E65 · H12

Keywords Greek debt crisis · Brinkmanship · Crisis management

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1 Introduction

> How to make sense of a process in which Greek voters loudly spurn a euro-zone bail-out offer in a referendum, only to watch Alexis Tsipras, their prime minister, immediately seek a worse deal that is flatly rejected by the euro zone, which in turn presses a yet more stringent proposal to which Mr Tsipras humbly assents? Better, perhaps, not to try (The dark clouds of peace, 2015).

What to make of the third Greek bailout deal? To the Economist, an advertent observer of the Greek crisis, and many other commentators the answer is clear: "[R]ational actors would never have got this far" (The way ahead, 2015). We beg to disagree; the decisions of the key actors in the Greek bailout drama can in fact be consistently and rationally explained. Doing so just requires to understand how brinkmanship really works. In our view this is precisely where many observers of and commentators on the Greek bailout drama failed.

We argue that the key to understand the actions of the first SYRIZA/ANEL government led by Prime Minister Alexis Tsipras from January until August 2015 may be daring to assume it had a rational game plan, or rather that its behaviour can be consistently explained as that of an actor who "is playing an escalating game of brinkmanship, trying to force Europe to give ground" (Evans-Pritchard, 2015). In doing so, we clearly challenge the dominant view that the Greek government behaved in an erratic and uncoordinated fashion.

We claim that the departure of the new Greek leadership from the strategy of its predecessors towards a more confrontational approach was probably well thought out. In the previous bailout negotiations Greece was "able to combine the threat of default (which would create an unknown and potentially massive risk for the EU), a promised commitment to economic reforms that would put it on the road to self-sufficiency, and its 'too small to fail' status to gain extraordinary financial support" (Bulow and Rogoff 2015; cf. Crivelli and Staal 2012). In our interpretation of the third bailout negotiations, the Greek grand strategy was not based on the outright threat of default; it instead revolved around the indirect threat of a 'Graccident,'

viz., an accidental exit from the eurozone under the worst possible circumstances, to gain concessions that otherwise would not have been achievable. In this paper, which combines reporting on recent developments with game-theoretic analysis, we offer a political-economy perspective on this.[1] Our analysis produces some counterintuitive results that even readers who may disagree with our conclusion could find interesting.

We emphasise several themes. The first is that many observers of and commentators on the Greek bailout negotiations either had difficulties to make sense of how brinkmanship works or concluded a little too quickly that a Greek "madman at the wheel gambit" (Cook, 2015) would not make sense (cf. Finkelstein, 2015). As we see it, letting things develop towards the brink made a lot of sense once the explicit threat of default was not credible any more. The very logic of brinkmanship is indeed to *avoid* having to actually prove that one is prepared to do something irrational. Instead brinkmanship revolves around convincing the other side that one is prepared to take higher and higher risks of *accidentally* pulling everyone over the brink: "If two climbers are tied together, and one wants to intimidate the other by seeming about to fall over the edge, there has to be some uncertainty or anticipated irrationality or it won't work" (Schelling, 2008, 99).[2] As we show in Section 3, by engaging in brinkmanship, the Greek government was probably able to induce the creditors to make a bailout offer that would otherwise not have been made.

Second, choosing a brinkmanship strategy was not an irrational choice of the Tsipras government; it could work as long as Greece was, on the one hand, totally unprepared to leave the eurozone in an orderly manner and also, on the other hand, committed not to give in to the

[1] This paper reflects the state of affairs at late September 2015. Some additions were made when the paper was revised in May 2016.

[2] Whether such a strategy was actually the idea of the Greek prime minister or that of the leader of the Greek negotiating team, Yanis Varoufakis, is impossible to say. Varoufakis himself always denied he was "busily devising bluffs, stratagems and outside options, struggling to improve upon a weak hand" (Varoufakis, 2015). Yet the fact that he constantly confronted and provoked his interlocutors certainly reinforced the impression that the danger of an accidental but permanent rift between Greece and the creditors was there. Throughout the negotiations Varoufakis played this role remarkably well. We conjecture that, while Tsipras and Varoufakis agreed that they should use brinkmanship, Varoufakis was willing to bid up to strength to avoid further austerity whereas Tsipras was willing from the start to settle for a 'honourable surrender' that would secure his re-election.

demands of the creditors for as long as possible. By holding out for a better deal and committing ever more strongly to not step back from the approaching brink, the Greek government tried to build up counter-pressure in the negotiations and thus to improve its initially very weak bargaining position. In our interpretation the creditors responded rationally to this by themselves allowing things to let go somewhat out of hand, hoping the Greeks would give in first. Yet in this case, as we show in Section 3.5, high costs are being caused by both sides' attempts to hold out for a better deal.

Third, by holding a referendum the embattled Greek government did a perfectly rational thing from a game-theoretic perspective. This, too, seems not to have been grasped completely by many observers, who asked what sense it made to vote on a proposal that was already off the table. For instance, the president of the German Institute for Economic Research (DIW), Marcel Fratzscher, lambasted the referendum as a political and economic catastrophe for Greece (Fratzscher, 2015). In our view, the referendum was instead a bold tactical move, serving two purposes: It mobilized voters, further delayed the negotiations and worked as a commitment device, ensuring that the creditors would need to accommodate the fact that the terms of their proposal were unacceptable by improving its terms. Put differently, the referendum was a stratagem to hold out for a better deal. Indeed, Tsipras kept telling the voters precisely that the rejection of earlier-offered terms should not be seen as "a mandate for rupture with Europe, *but a mandate that bolsters our negotiating strength to achieve a viable deal*" (Marsden, 2015, emphasis added). The decisive 'no' vote was supposed to leave Europe with two options: Give us concessions (forgive some debt) or, worse, face the risk of a Grexit (cf. Whelan, 2015).

Fourth, the third Greek bailout should be seen as what it is: The outcome of a bargaining process between actors with great differences in bargaining power. But is it true that "Mr. Tsipras's eight-month standoff delivered next to nothing that he couldn't have achieved on his first day" (Nixon 2015, cf. Finkelstein 2015)? Our analysis suggests that such a verdict may be too one-sided. The already stricken Greeks certainly paid a heavy price for

their leaders' brinkmanship. But did the Greek negotiators achieve something better with brinkmanship than they could have achieved without? Looking at the pros and cons of the third bailout agreement, our answer is most probably yes. Certainly, the terms of the new deal were harsher than those offered by the creditors earlier. But that should surprise no-one, as the final agreement was about an entirely new and huge bailout. What is certain is that the third Greek bailout presents a mixed bag of results; apart from many unpopular measures it contains several points which can be seen as concessions to the Greeks (see Section 2). The fact that the creditors have been more flexible with the radical SYRIZA/ANEL government of Greece than with previous more moderate ones has not escaped even critical commentators (cf. Papachelas, 2016).

In this paper we offer background information as well as some degree of formalism in support of our themes.[3] In doing so, we answer the question whether game theory could help explain the Greek crisis with an emphatic yes. The remainder is structured as follows: In Section 2 we recall the most important events leading to the third Greek bailout. In Section 3, after some preliminary remarks (3.1), we explore the strategic interdependence between Greece and its creditor countries/institutions by help of a sequential asymmetric-information game (3.2). We differentiate between three equilibria of the game (Sections 3.3; 3.4; 3.5), which are put in relation to what actually occurred between Greece and its creditors. We discuss our main result in Section 4. Section 5 sums up and concludes.

2 A narrative of events leading to the third Greek bailout

Five years into the debt crisis, with the country having experienced a loss of more than 25% of its GDP and a catastrophic increase in unemployment, the new Prime Minister of Greece, Alexis Tsipras, came to power in January 2015 on the ticket of having promised an exhausted

[3] For more background information and analyses of various aspects of the Greek debt crisis see e.g. Baltas (2013), Kasimati and Veraros (2013), Katsimi and Moutos (2010), Gibson et al. (2012), Hodson (2015), Mink and de Haan (2013), Oltheten et al. (2013), Potrafke and Reischmann (2016), Provopoulos (2014), Samitas and Tsakalos (2013).

electorate to undo painful economic reforms, and to insist in a write-down of the country's €320 billion ($344 billion) of debt. Initially some commentators expressed the hope that the victory of his ultra-left wing alliance SYRIZA, which ended a 40-year era of alternating rule by the socialist PASOK and the conservative New Democracy, could inspire both the Greeks to get their house in order and Europe to seriously discuss the idea of debt relief (Hope and Barber, 2015a).

Those commentators were quickly let down. The new Greek coalition government of SYRIZA and the right-wing ANEL party, mostly represented abroad and in the media by the combative finance minister Yanis Varoufakis, immediately embarked on a collision course with the very countries and institutions that had already helped Greece twice to stay afloat financially. The increasingly tumultuous events that followed were just what the media were waiting for. Populist rage in Germany focused for some time on the 'Fingergate,' as a rather absurd blame game over whether Varoufakis had once—during a conference presentation years before he entered politics—literally given Germany the middle finger, became to be known (Sauerbrey, 2015). In the end of March Tsipras visited Berlin to present his case, yet to no avail: By the end of March he failed to secure an endorsement of his list of proposed economic and structural reforms from the 'Brussels Group,' consisting of EU and IMF representatives advising the 'Euro Working Group,' which in turn directly reports to the eurogroup finance ministers. With an agreement an earlier promised €7.2 billion ($8.1 billion) of undisbursed funds from the second bailout could have been unlocked quickly, and Greece could have secured valuable breathing space. This would also have lowered the risk that Greece might be running out of cash and be forced to choose between meeting the next loan payment deadline and paying pensioners and public employees.

On 9 April 2015 the government, having apparently raided the state coffers, met an IMF loan payment deadline of €459 million ($493 million) and thus avoided at the last possible moment a credit event. However, on the very day of payment—and to the intense displeasure of not only his European partners—Prime Minister Tsipras met with Russian President

Vladimir Putin in Moscow to discuss the prospects of deeper bilateral cooperation. In a move that "could bring the euro crisis to a head" (Rachman, 2015) the Greek government had two days earlier angered particularly eurozone powerhouse Germany by floating the staggering figure of €278.7 billion ($300.6 billion) in demand for reparations from World War Two. Even the German Vice Chancellor Sigmar Gabriel, who belongs to the country's Social Democratic Party and who had expressed understanding for the social hardships austerity had brought to Greece, bluntly called the demand "stupid" (ibid.).

Months of tense negotiations—and a media-reporting firestorm—ensued. Just when all seemed to imply a compromise and an end of the prolonged deadlock the negotiations were broken off on 26 June 2015. Existing hopes of reaching a compromise solution did almost completely dissipate when Tsipras unexpectedly announced that a referendum on the creditors' demands would be held on 5 July 2015. This move not only surprised his European partners but also people in Greece and the global financial markets. Apparently the Greek leaders were completely convinced that "[i]n the months of negotiations, deadlock, and stalemate that led up to this [...] dramatic referendum vote, somewhere along the way Greece took on new significance, transforming from a peripheral member of the West that accounts for a mere 3 percent of the eurozone's GDP to a pivotal country" (Bechev, 2015). By announcing a referendum Tsipras clearly escalated the crisis: The country's on-going bailout program had expired on 30 June 2015 and the Greek authorities announced that they would not pay the equivalent of €1.6 billion ($1.74 billion) to the IMF due the same day. In order to stem the outflow of capital from the desiccating Greek banking system, a bank holiday and strict capital controls were imposed in Greece. Bank withdrawals were limited to €60 ($65) per day for ordinary depositors and €120 ($130) for pensioners. Now "[t]he question of Greece's euro-zone membership [had] been officially opened" (Gordon and Kennedy, 2015).

With Greece having effectively become "the first advanced economy to default to the fund in its 71-year history" (Donnan, 2015) the IMF now faced a dilemma: Letting Greece off the hook would, on the one hand, raise serious questions about the fund's impartiality and in-

tegrity. On the other hand, a Greek default to the IMF could trigger cross-default clauses in Greece's Master Financial Assistance Facility Agreement with the European Financial Stability Facility (EFSF), which would then give the right to Greece's European creditors to frontload payments on EFSF loans (Ruparel, 2015). An officially acknowledged default could then have wider consequences because cross-default clauses of Greek private-sector bonds might set forth a chain reaction of credit events. The European Central Bank (ECB) on its part could then sooner or later be forced to cut the only lifeline of the Greek banking sector and cancel the provision of Emergency Liquidity Assistance (ELA); it decided to keep steering a middle course and maintained ELA at the same level as the one fixed in the previous review (European Central Bank, 2015a). All this meant that some solution needed to be found until the critical deadline of 20 July 2015, when Greece needed to repay around €3.5 billion ($3.8 billion) in bond redemptions to the ECB. The time to find a solution became thus increasingly short.

The referendum in Greece was held on Sunday, 5 July 2015. The government had campaigned for a 'no' vote and opinion polls predicted a head-to-head race. In the evening of the same day it became clear that the Greeks had indeed rejected the latest proposal of the creditors with almost a 62% majority (Nationwide referendum results, 2015). In the words of one analyst, Greece had hit the self-destruct button by voting no (McArdle, 2015). The key question was how long the countdown towards self-destruction would last. Greece meanwhile officially requested an entirely new bailout from the ESM. Yet an agreement on this sensitive matter could not be simply pulled from a hat (for the following see Spiegel, 2015b): What happened next depended on the political response from the pivotal actors in the Greek bailout drama; these however did not have completely aligned interests and needed to co-ordinate far-reaching decisions in a very short period of time. First, the European Commission (EC) needed to evaluate whether risks to financial stability in the euro area were existing. Next the eurogroup needed to officially open negotiations on the conditions of the bailout, which would require votes in several parliaments, including the German Bundestag. Even if the eu-

rogroup could conclude these negotiations quickly—which seemed unlikely—the terms of the bailout would require fresh parliamentary votes. The only thing Greece could hope for in the short term was a clarification of the terms of the requested bailout.

In the limited time available to find a solution several things could have happened that would have led to an unprepared and involuntary Greek exit from the eurozone—a so-called 'Graccident' (for this and the following see Dabrowski, 2015): If the ECB would have reduced or cancelled ELA altogether the Greek banks would have become insolvent and would have closed immediately. This would have imposed considerable additional hardship on the cash-based Greek economy, destroy trust and certainly further reduce prospects of future growth. Perhaps the economy could have staggered on for a while with banks closed. Yet sooner or later the government would have needed to choose between reverting to a national currency, by converting existing euro-denominated bank accounts into the new currency, or forcing the Bank of Greece (BoG) to provide Greek banks with unauthorised euro-denominated liquidity.[4] Such a hostile takeover of the BoG—which was apparently exactly what the so-called Left Platform of communist hardliners within SYRIZA wanted (cf. Hope and Barber, 2015b)—would certainly have led to a rupture with the ECB. Another possibility was that the Greek government might run out of cash. Capital flight and uncertainty had already negatively affected the growth prospects of the Greek economy (European Commission sharply cuts Greek growth, primary surplus forecasts, 2015). As a result, the government was not enjoying a primary surplus any more, which meant that it did not even have a choice between paying pensions or salaries and honouring its financial obligations: Already Greece could do neither of these two things.

[4]Interestingly, it seems that Greece's finance minister Varoufakis had devised an alternative route to secure transactions could be conducted in euro as part of a clandestine contingency plan, as he revealed in a teleconference with private investors on 16 July 2015. This plan seems to have involved the creation of reserve accounts secretly attached to every taxpayer's ID that could be used to make payments to other taxpayers outside of the 'official' banking system. According to Varoufakis, "[t]hat would have created a parallel banking system while the banks were shut as a result of the ECB's aggressive action, to give us some breathing space" (Spiegel and Hope, 2015). The plan apparently also entailed that "at the drop of a hat it could be converted to a new drachma" (Babington, 2015). An intriguing option might have been to design the new drachma as a purely electronic currency, which would then work as a powerful antidote against the notoriously big Greek shadow economy (for more on the latter see Berger et al., 2014).

With analysts putting a 50% chance of a chaotic Greek exit from the eurozone, leaders gathered in Brussels for last-ditch negotiations on 12 July 2015—"the most critical moment in the history of the EU" (The way ahead, 2015, 11) according to the president of the European Council, Donald Tusk. After arduous talks behind closed doors—and apparently some pretty nasty political manoeuvring—Tusk was reported to have announced tongue-in-cheek on the morning of 13 July 2015 "we have an a-Greek-ment" (Pain without end, 2015, 8). The deal thrashed out over 17 hours would avert a Grexit and a Graccident for the time being, address Greece's refinancing needs with a promised package of €82 billion - €86 billion ($90 billion - $94 billion), including a buffer of €10 billion - €25 billion ($11 billion-$27 billion) for bank recapitalisation and resolution costs, promised a short-term EU Commission investment plan in the magnitude of €35 billion ($38 billion) and provided for a bridge financing package of €7 billion ($7.7 billion) (European Council 2015b, 2ff., European Council 2015a).

The political costs of the deal for the Greek government were huge (for this and the following see What Greece must do to receive a new bail-out, 2015). On 15 July 2015—exactly two days after the euro summit—the Hellenic Parliament had to pass legislation on pension cuts, value-added tax reform, collective wage bargaining and the establishment of quasi-automatic public spending constraints. One week later, on 22 July, a second set of reform laws, including the adoption of the EU Bank Resolution and Recovery Directive, needed to be enacted. As if all this were not enough, Greece will have to, among other things, reform its pension system and labour markets, open hitherto closed professions, 'de-politicise' her administration—and do all this under scrutiny from observers that will represent the institutions formerly known as the troika. From now on Greece would be drip-fed bailout funds only in return for enacting reform legislation. Most humiliatingly however, the Greek authorities were required to deposit "valuable Greek assets" with an independent privatisation fund that is supposed to raise €50 billion ($55 billion).

Apart from harsh conditions and painful austerity the deal however contained concessions to the Greeks. First of all, the deal secured the refinancing of the new (radical) Greek

government, which was not sustainable without external assistance. Indeed, one cannot avoid the impression that the creditors gradually accommodated the quickly increasing financial needs of Greece in the months before the third bailout agreement. To start with, according to media reports, there was in December 2014 "already broad agreement on the scope of the aid. Greece is expected to be granted around €10 billion, and the [European Stability Mechanism (ESM)] will not be required to raise any additional funds for it" (Pauly et al., 2014). After the election of Tsipras the creditors had apparently offered Greece loans of around €15.5 billion ($17.6 billion) in return for a five-month extension of the existing financial assistance agreement. Greece, in contrast and despite of all the talk about a rejection of austerity, did ask for considerably more money and a new bailout. Then, in January 2015, reports spoke of behind-the-scenes talks over a third bailout "amounting to €30 billion" (Steinbock, 2015). One month later, it was reported that "a third Greek bailout could run as much as €37.8 billion if Varoufakis' plans are adopted in full" (Spiegel, 2015a). In March 2015 "Spain's economy minister said euro zone countries were discussing a new rescue plan for the country worth between €30-50 billion [...] but European Union (EU) officials said there were no such talks" (Ellyatt, 2015). Clearly, the promised amount of further financial assistance increased over time. Yet it also became clear at the same time that the creditors wanted to see that political cost would be paid (Strupczewski, 2015).

Another point Tsipras could sell his voters is that the third bailout is covered by the ESM (for legal details see Megliani, 2014, 586), since it can be argued that the ESM facilitates, due to its inclusion of standardised and identical collective action clauses (CAC), an orderly restructuring of government debt (Stephanou and Gortsos, 2012, 24). Tsipras could definitely also cite in his favour to have secured the five-year "Juncker investment plan," the magnitude of which (€35 billion ($38 billion)) actually exceeded the fiscal savings Greece is required to realise in the same period. Under the terms of the third Greek bailout, the primary surplus targets were also reduced, which amounts to an easing worth €20 billion ($22 billion). The perhaps most important achievement of all, yet certainly not something the Greek leadership

was prepared to tell the public, was that the fiscal bill of the third bailout would not immediately be picked up by the Greek voters but could be delayed until the next election—which was duly announced immediately after the bailout deal was signed. As we see it, securing a grace period, during which elections could be held before austerity would kick back in, may very well have been an important objective of the Greek leadership's grand strategy.

However, the Greek negotiators did obviously not secure the most important prize: A formal commitment of the creditors to provide debt relief. Exactly this is what would have made the deal "viable." Of course, that would also have given Tsipras a huge boost in popularity. On the other hand, he did at least secure the endorsement of debt relief by the International Monetary Fund (IMF) and public promises of European leaders that some restructuring of the debt would be considered in the near future.

The new Memorandum of Understanding (MoU) was signed on 19 August 2015. The very next day, eight months after he came to power for the first time, Tsipras stepped down to trigger elections. In the evening of election day on 20 September 2015 the exit polls showed Tsipras had won by a significantly bigger margin than expected. Thus, while Tsipras was obviously not able to put an end to austerity, it seems that his brinkmanship strategy had worked at least insofar as to ensuring his re-election. But was the new deal a good deal for Greece as well? In the damning words of the former Greek Finance Minister Yanis Varoufakis, who seems to have sincerely believed that austerity could be negotiated away, the third Greek bailout was doomed to fail and will "go down in history as the greatest disaster of macroeconomic management ever" (Greece debt crisis: Reforms 'will fail' - Varoufakis, 2015).

A comprehensive appraisal of the third Greek bailout is beyond the scope of this paper. Brinkmanship certainly burdened Greece's storm-tossed economy with huge costs. What the Greeks got in return was not an end of the crisis but even more debt and, thus, even more austerity. Yet despite all this the more optimistic observers see at least some merits: According to Schmieding (2015), the deal "is a good deal, warts and all" since it keeps reform pressure up and "actually offers a slight if probably backloaded fiscal stimulus for Greece over time, with a

sensible redirection of funds from public consumption to public investment". Especially the moderate fiscal stimulus can have positive medium-term macroeconomic effects (cf. Weisbrot et al., 2015). Also some form of debt relief may eventually come. On balance one can thus say that the deal could have been a worse one.

Yanis Varoufakis, who most probably devised the brinkmanship strategy, for his part does not seem to be content with the result. In his view a much better compromise could have been achieved had Prime Minister Tsipras not given in for political reasons. A better deal would however have required the Greek government to commit to continuing brinkmanship: "My view was we don't swerve. We just commit. We just shut our eyes and go, let anything they want to do take place" (Spiegel, 2016). Whether or not this is true will of course remain a matter of speculation. Yet, as we will show in the next section, it can be argued from a game-theoretic perspective that the brinkmanship strategy had indeed some merits. By holding out in the face of adversity, and announcing a referendum to deliberately increase the political costs of reforms, the Greek government most probably improved its initially very weak bargaining position. In what follows we outline how we reach this counter-intuitive result.

3 Brinkmanship in the Greek bailout negotiations

3.1 Preliminary remarks

> A central feature of all crises is a sense of urgency, and in many cases urgency becomes the most compelling crisis characteristic. Situations change so dramatically and so rapidly that no one seems to be able to predict the chain of events or the possible outcomes. An important aspect of such crisis situations is the dynamics that evolve during days, hours, and even minutes. [...] Leaders and decision-makers are often caught by surprises after surprises produced by many forces (Farazmand, 2001, 3-4).

In this section we interpret the negotiations between Greece and its creditors as a game of

reciprocal "'coercive diplomacy," where the objective of the coercer is to induce behavioural change in the coerced; pressure is applied by communicating the own willingness to face disaster. Put differently, we contend that an escalation may serve as a deliberate risk-generation mechanism with ultimately strategic aims (cf. Schelling, 2008, 101). Alexander George defines coercive diplomacy, in a militarized-diplomacy context, as "efforts to persuade an opponent to stop and/or undo an action he is already embarked upon" (George, 1997, 5). It is a response to an encroachment already undertaken and thus different from deterrence, which aims at making sure that an opponent will not undertake an encroachment in the future. In other words, the objective of coercive diplomacy is to persuade the opponent to change course by threatening or actually using some form of force, *viz.*, capability to inflict pain, not to trigger a catastrophic event.

We can most probably safely assume that both the new Greek government and its creditors understand that cohesion of the euro area is both in the collective as well as in the national interest: "Every member of the euro area has a vital interest in ensuring that its partners are meeting the membership requirements—and not just at the point of entry, but continuously" (European Central Bank, 2015b). At the same time, in order to ensure that a country stays in the euro, both the eurozone as well as the country in question need to be at least not worse off in the union: "If there are parts of the euro area that are worse off inside the Union, doubts may grow about whether they might ultimately have to leave" (European Central Bank, 2014). Certainly, if the euro area were a full-fledged economic and fiscal union, it would be much more capable of absorbing asymmetric shocks than it is in its current shape. Yet as things stand, the very incompleteness of the monetary union in conjunction with great differences in national shock-absorption capabilities challenge the notion that the euro is irrevocable in all member states (cf. Fidrmuc, 2015).

Seen from a game-theoretic perspective, the ambiguity surrounding the permanence of euro membership means that both a coordinated as well as an unplanned and thus potentially disastrous exit from the euro is a possibility rational actors should take into account.

This in turn means that countries with better shock absorption capabilities as well as less capable countries in need of support can strategically employ the explicit or implicit threat of a euro exit as long as they share a political interest in keeping the eurozone intact. Yet whereas the announcement of a euro exit means the initiation of *certain* disaster, a country, or group of countries, can also try to increase the own bargaining power by exposing everyone to a moderate *risk* of a mutual disaster. According to Schelling one can initiate such risk "if the other party's compliance is feasible within a short enough period to keep the cumulative risk within tolerable bounds" (Schelling, 2008, 91, with emphasis).

We now contend, first, that deliberately running a moderate but increasing risk of an accidental euro exit can be interpreted as a key component of the new Greek leadership's strategy. In our interpretation the Greek government deliberately led the country into a phase of uncertainty regarding its future in the eurozone by remaining obstinate when capital was fleeing the country and a slow-motion bank run was taking place. Instead of soothing spirits it further unnerved creditors, investors and other concerned actors by signalising its willingness to let things develop further into what almost everyone saw as the wrong direction. Early remarks of the Greek ex-Finance Minister Yanis Varoufakis indeed seem to imply that this was right from the start of the negotiations the Greek negotiators' game plan:

> The only thing you can really do is negotiate with the rest of Europe [...]. But to negotiate, to be taken seriously, you have to have a credible threat. *You have to be prepared to blow the whole thing up, simply by being intransigent if you are not taken seriously.* So, this is my recommendation: Prepare for a very tough, very painful, potentially explosive negotiation (Nasiripour, 2015, emphasis added).

The credible threat in this case was not to exit the eurozone in an orderly fashion but the risk of not being able to change course before going over the brink.

We contend, second, that brinkmanship generated a credible threat, despite the fact that Greece did most probably not constitute a systemic risk to the eurozone, but because a Graccident could have painful *political* consequences; its fallout could negatively affect European

governments by further increasing political polarization. The importance national and international media gave to the negotiations and their outcomes was certainly not something the creditors liked. We suspect that especially the German grand coalition was quite sensitive to unforeseen voter shifts towards both the left and the right end of the political spectrum.

We contend, third, that the commitment of Greece's new government to its radical course may well have been more tactical than ideological. Whereas Varoufakis seems to have devised the brinkmanship strategy in order to negotiate austerity away, and while it is true that Tsipras had promised to put an end to austerity in his 2014/5 election campaign as well as to cancel unpopular measures like the consolidated tax on property ownership (ENFIA), one should not discount *a priori* that Tsipras was not prepared to soft-pedal after becoming prime minister. Yet, in order to cut down on his promises, he would need to come back to Greece from the bailout negotiations with a package deal having in it enough to show to the voters in return. In any case, during the negotiations the grandiose campaign pledges worked as a commitment device: Every deviation by the Greek leadership from them would be perceived as a humiliation; in a deal the Greek leadership would then demand some form of compensation, for instance lower budget surplus targets, a stimulus package from the EU commission or—ideally—debt relief.

In what follows we argue that one can both consistently interpret the course of events summarized in the previous section in line with the theme that the strategic calculus of the Greek negotiators combined running the risk of a Graccident with a strategy of increasing the political costs of reforms in order to force the creditors to offer whatever concessions could be realized. We thus militate against the view held by some that the Greek government did *not* have a strategy; the fact that "[t]he Greek red lines—the points of principle on which this government refuses to budge—on labour rights, against cuts in poverty-level pensions and fire-sale privatizations—have been in plain view from day one" (Galbraith, 2015) does not at all mean that the Greek leadership was not prepared to compromise. Yet the claim to have unmovable red lines needs to be backed up with something real—perhaps a referendum?—if

it is to be credible, otherwise it is just cheap talk.

We also militate against the view that the Greek negotiators came to a gunfight armed only with a knife—that is to say they had the wrong strategy for the right purpose. Observers of the negotiations holding this view argue that Greece did in fact play the brinkmanship card yet did not, for some reason, understand that the game was over before it began, since it could only credibly threaten with a default as long as it had a large enough primary surplus to pay for domestic public expenditures (Kaletsky, 2015). We argue that there is a difference between threatening openly to default and running the deliberate risk of an accidental euro exit, with all the disastrous (political) consequences this would entail for all sides.

Last but not least we are completely unconvinced that the Greek government not only had a rational strategy but in fact enjoyed an extremely strong bargaining position because it had the "diabolical plan B" (Bershidsky, 2015) of "escalating tensions between the country and its creditors" for the purpose of "driving up the costs [...] for the other side, by allowing capital flight by its citizens" in order to maximise euro-denominated TARGET2 claims vis-à-vis the BoG. According to some observers, Greece, having this ace up its sleeve, was allegedly be able "to secure a far more favourable outcome—including increased financial assistance and reduced reform requirements—than it could have gained at any point in the past" (Sinn, 2015; cf. Moro, 2014, S19ff.).[5] We instead share the view of Karl Whelan that, even if the exact effects of a hypothetical euro breakup for European central banks are still open to dispute, the risks for German citizens due to the TARGET2 balance were most probably low (Whelan, 2014).

In our interpretation both sides tried to coerce the other to change course. From the onset of the negotiations the eurozone creditors, on the one hand, clearly perceived that the SYRIZA/ANEL government was back-pedalling on reforms and wanted to make the them change course on this. They also did definitely not want to reward populist campaign pledges with their taxpayers' money. The SYRIZA/ANEL government, on the other hand,—most prob-

[5]TARGET stands for Trans-European Automated Real-time Gross Settlement Express Transfer System.

ably having already the next elections in mind—needed to get some politically valuable concessions. To reach their objective, they employed the tactic of deliberately increasing the reform costs (as a commitment device) coupled with brinkmanship, *viz.*, "the tactic of deliberately letting the situation get somewhat out of hand," (Schelling, 1980, 200) in order to make it more intolerable to the other side and force its accommodation: "It means harassing and intimidating an adversary by exposing him to a shared risk, or deterring him by showing that if he makes a contrary move he may disturb us so that we slip over the brink whether we want to or not, carrying him with us" (ibid.).

3.2 The game

In this subsection we explore this theme by help of a sequential asymmetric-information game with two players, the creditor countries and institutions (henceforth the eurozone player), on the one side, versus the Greek government (henceforth Greece player) on the other side. Of course this model is not supposed to fully reflect the complexity of the bargaining situation during the Greek bailout negotiations, but it can still offer some insights into how the actors' grand strategies perhaps looked like. Table 1 shows the variables; the sets of players, strategies and payoffs are self-explanatory. The game tree, decomposed in two halves for the convenience of the reader, is shown in Figures 1 and 2. We are searching for subgame-perfect Nash equilibria.

The game tree tells the following story: The eurozone player E and the Greece player G face negotiations about a bailout for the latter. For G, implementing economic and structural reforms, exiting in an orderly fashion from the eurozone to avoid reforms, crashing out of the eurozone in a chaotic fashion and holding out to deliberately generate the risk of an accident are all painful options. Yet running the risk of a Graccident allows G to hold out for a better deal by rejecting the terms of an initial bailout. The game begins by E choosing between offering G a package deal (financial assistance combined with conditionality). If E chooses not to offer G a bailout, and the latter does not hold out for a better deal, G must conclude

the game by choosing between either exiting the eurozone, which is costly to both players, or implementing reforms that will enable it to stand on the own feet financially. In this case G must bear the (political-economic) costs of structural and public sector reforms; the latter are politically especially costly.[6] This choice is the same for G if a bailout offer was made but rejected and G does not hold out. If a bailout offer was made and immediately accepted, G gets a positive payoff in the form of politically relevant benefits—think of increased popularity for having secured concessions—like credible promises of future debt relief, which can be exploited domestically. However, the benefits of a bailout will invariably be reduced by the political costs of the structural and public sector reforms, R, demanded in return. In accordance with the dictum that "[r]elations between the euro zone and Greece are defined in terms of the "concessions" each has screwed out of the other" (My big fact Greek divorce, 2015), we assume that any concessions to G (V_1 at this stage of the game) are being perceived as politically costly by the eurozone player.

If G chooses to hold out a different subgame develops. Holding out means that a later reform may become much more costly. To reflect this, we introduce a variable D that expresses the severity of the negative consequences caused by delaying a resolution of the impasse—think of capital flight and closed banks, reduced short-term growth prospects, etc.—, which of course translate into political costs for G but also increase the amount of resources that need to be redistributed from E to G in case of a bailout agreement. Holding out does moreover mean that implementing reforms may become even more costly if the population rejects them. In order to reflect this, we introduce a move by nature which determines whether reforms are politically feasibly and thus not costly ($L = 0$ with a probability h), or rejected by the population ($L > C_G^X - R$ with the probability $1 - h$). The first outcome is meant to capture the effect of the Greek leadership losing the referendum in the model, the second outcome is

[6]Although discontent with the public sector is widespread in Greece, "Greek people also have a tradition of opposing reforms, even mild ones" (OECD, 2010, 19). At least a part of the explanation is that public sector recruitment has long been a way to satisfy clients and to scoop up voters in Greece. For more on clientelism and public sector reform see Spanou (2008).

meant to capture the effect of winning the referendum.[7]

In each of these two cases the game continues with the commitment subgame. The first move here is made by N who decides with a probability q the type of G: The tough type of G is firm in its commitment; if this is so, G can deliberately run the risk of a Graccident in order to extract concessions from E. The probability q is known to both players; yet the type of G is private information and only known to the Greece player. The true state of the world after the initial act of nature is thus unknown to the eurozone player, who has to move next and decide on whether it offers G a bailout or not. Commitment to brinkmanship works the following way: It rules out the option for the Greece player to respond to the move of E by avoiding the risk of a Graccident. The game thus reflects the strategic case that "when both parties abhor collision the advantage goes often to the one who arranges the status quo in his favour and leaves to the other side the "last clear chance" to stop or turn aside" (Schelling, 2008, 44).[8]

If no bailout is being offered by E, a committed Greece player cannot but run the risk of a Graccident. If that event occurs, both players will be burdened with the costs of a chaotic Greek exit. If no such thing occurs, G can choose to implement those painful economic and structural reforms needed in order to enable it to live within the own means; the reform costs are given by R; yet these costs are increased by two factors: The costs D of holding out, which definitely accrue to G if it enters the negotiation game, plus the political fallout from the referendum. The Greece player can alternatively opt for an orderly exit from the monetary union, which would mean certain costs for both players. In contrast to this, a noncommitted

[7]We of course assume in our game that the common knowledge assumption holds, that is, that the eurozone player knows the possible moves of the Greece player, one of which is the referendum. Given that such a move was from early on deliberated by the Greek government (see e.g. Barker and Hope, 2015), this assumption is certainly not unrealistic.

[8]Schelling actually illustrates this case with an example from ancient Greek history: "Xenophon understood the principle when, threatened by an attack he had not sought, he placed his Greeks with their backs against an impassable ravine. "I should like the enemy to think it is easy-going in every direction for *him* to retreat." [...] The "last chance" to clear out was left to the enemy when Xenophon had to take the initiative, but denied to himself when he wanted to deter attack, leaving his enemy the choice to attack or retire" (Schelling, 2008, 45). The quote appears to be apocryphal. Schelling is perhaps referring to Xenophon, *Anabasis*, 4.2.11 (Xenophon, 1922, 271).

Greece player can choose between the Graccident risk and playing safe; this means then the choice between reform and Grexit.

Table 1: Variables

Variables	Description
$i = G, E$	Players: Greece (G), eurozone (E)
R	Costs for G of economic reforms ($R > 0$)
D	Costs for G of holding out ($D > 0$)
L	Cost increase for G in terms of political fallout from referendum ($L > 0$)
C_i^X	Costs for player i of an ordered Greek exit from the eurozone (Grexit) $\left(C_i^X > 0\right)$
C_i^A	Costs for player i of a chaotic Greek exit from the eurozone (Graccident) $\left(C_i^A > 0\right)$
p	Probability of a Graccident ($0 < p < 1$)
q	Probability of a successful commitment ($0 < q < 1$)
h	Probability of significant costs of delayed reforms ($0 < h < 1$)
V_1	Payoff of initial bailout offer in terms of concessions that can be exploited domestically ($V_1 > 0$)
V_2	Payoff of improved bailout offer in terms of concessions that can be exploited domestically ($V_2 > 0$)

In what follows we explore different equilibrium solutions of the model. The conditions (1), (2) and (3) define solutions of the commitment game, which are being anticipated by the Greece player in its solution of the negotiation game. Since a complete solution of the game would be beyond the scope of this paper, we confine the analysis to three cases: The good, the bad and the ugly, as seen from the perspective of the Greece player. We will not only show that non-empty sets of equilibrium parameters exist, but also that these cases are not unrealistic. Put differently, we show that the actions of the Greek government can be explained by assuming that it followed a strategy aimed at holding out for a better deal.

We restrict the parameter space to such constellations that fulfil certain conditions: First of all, we assume $R + L > C_G^X > R$, which simply means for the Greece player delayed reforms are worse than an immediate Grexit and the latter worse than immediate reforms. We also assume $V_2 - R - L > -C_G^X$, which means that an improved bailout offer by E must ensure that G remains in the eurozone, even given the negative effects of holding out for the improved

Figure 1: Game tree of the negotiation game

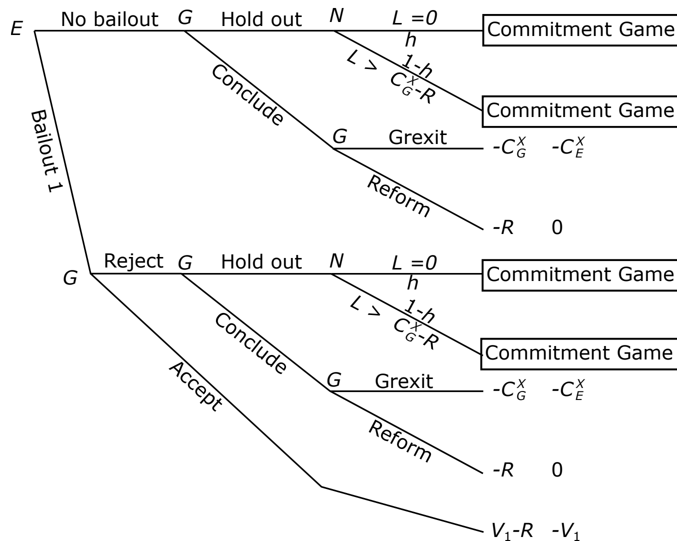
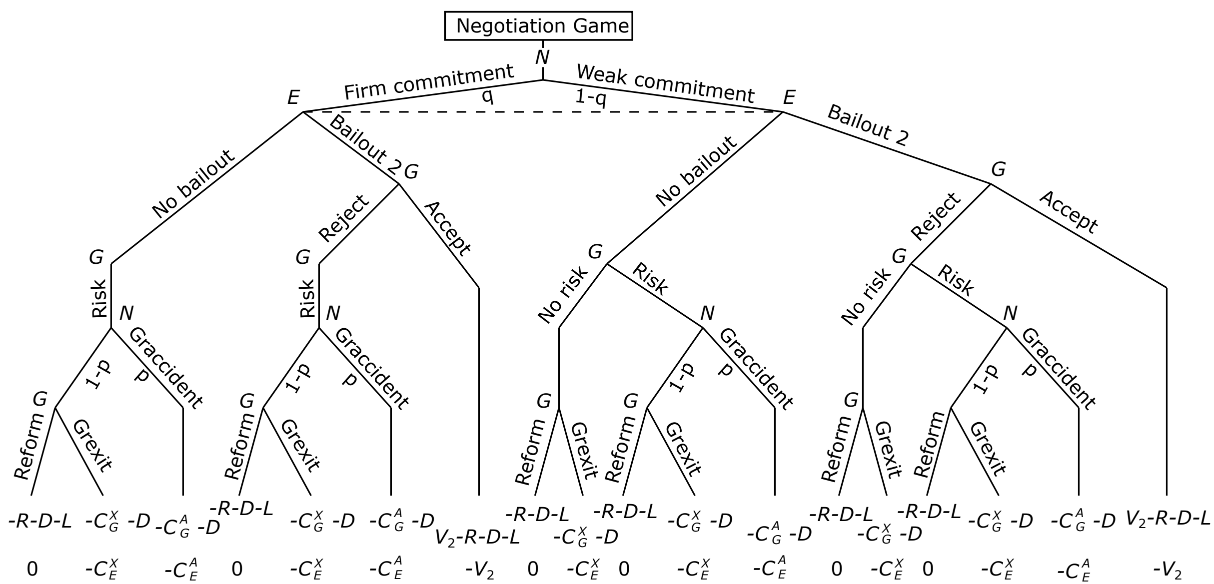


Figure 2: Game tree of the commitment game



bailout package V_2.[9]

3.3 Case I: The good

This is the case of high risk costs that the Greece player is firmly committed, relative to bailout costs V_2. It is defined by the equilibrium condition

$$V_2 < pqC_E^A < C_E^X + pq\left(C_E^A - C_E^X\right). \tag{1}$$

The term pqC_E^A expresses the expected costs caused by the risk that the Greece player could be firmly committed and that therefore a Graccident is likely. The term $C_E^X + pq\left(C_E^A - C_E^X\right)$ expresses the expected costs for E if it encounters the Greece player for which $L > C_G^X - R$ in the commitment game. Note that in this case (and the other two cases) if $L = 0$ the Greece player would prefer implementing reforms over Grexit. It would then never get a second-round offer V_2 as long as the costs associated with this for the eurozone player exceed the risk costs.

In case I the Graccident risk is so high relative to the value V_2 of improved bailout terms that E would definitely offer them in the commitment game, independently of the value of L; this will of course be anticipated by the Greece player. G, solving the game backwards, will choose its strategy by comparing the payoffs of different courses of action. If G chooses to hold out for a better deal the payoff will be

$$\pi_G^D = (1-h)(V_2 - R - D) + h(V_2 - D - L - R).$$

If G opts against brinkmanship and does not enter the commitment stage, it would immedi-

[9]We also assume $V_2 > D$; $V_2 > L$; $V_2 - L > D$; $C_G^A > R + D + L$ and $C_G^A > V_2 + R$ to ensure the outcomes of the game are not illogical. For example, the last assumption ensures that for the Greece player a Graccident is the worst possible outcome.

ately implement reforms and realize the payoff

$$\pi_G^{nD} = -R.$$

For comparison, if G does not hold out and E would have made an offer V_1 in the negotiation game, the payoff would be $\pi_G^{ac} = V_1 - R$. Since we have assumed $V_2 > D + L$, holding out is dominant. In this case G would accept any bailout offer that fulfils

$$V_1 > V_2 - D - hL.$$

At the same time, as long as $V_1 < V_2$ the eurozone player would already make an initial bailout offer in the negotiation game. This would be the ideal outcome for the Greece player: E would make an adequate initial bailout offer, which G would accept; there would be no need for brinkmanship and the costs for all actors would be minimal. Such a nice outcome depends of course on the parameters of the game; with different parameters the outcome may change considerably, which leads us to the next case.

3.4 Case II: The bad

This is the case of low risk costs that the Greece player is firmly committed, relative to bailout costs V_2. It is defined by the equilibrium condition

$$pqC_E^A < C_E^X + pq\left(C_E^A - C_E^X\right) < V_2. \tag{2}$$

In this case the Greece player is under increased pressure and will shy away from brinkmanship. Regardless of whether G is willing to implement reforms, the eurozone player would never make an second bailout offer in the commitment game and also no initial bailout offer

in the negotiation game. In that case G's payoff amounts to

$$\pi_G^D = (1-h)\left\{q\left(p\left(-C_G^A - D\right) + (1-p)(-R-D)\right) + (1-q)(-R-D)\right\}$$
$$+h\left\{q\left[p\left(-C_G^A - D\right) + (1-p)\left(-C_G^X - D\right)\right] + (1-q)\left(-C_G^X - D\right)\right\}$$

if it nevertheless holds out, and

$$\pi_G^{nD} = -R$$

if it opts to comply by choosing reform in the negotiation game. Interestingly, G would never opt to hold out since it cannot induce E to make an offer and would choose reform anyway. Such an offer would only make sense to E if $V_1 < 0$, which is excluded by our assumptions. If that were possible, we would have an equilibrium in which actually the Greece player would have to transfer resources to the eurozone player in order to avoid being forced out of the eurozone.

In our view this scenario provides a valuable lesson for how the strategy of Greece's creditors may have looked like. Obviously the tactic of increasing the political costs of giving further support to an unruly Greek government, or taking the position that the fallout from a Graccident would be manageable, is a rational thing to do in the negotiation stage of the game: The Greek leadership would be forced to bow to the inevitable and implement reforms without further ado. Perhaps the expectation that an outcome like this could be achieved induced the eurozone to take a hard line. But it seems the game played out much more messily, as in the next case.

3.5 Case III: The ugly

This is the case where the costs of the second bailout V_2 are higher than the costs of the risk that the Greece player could stumble into a Graccident, yet lower than the costs E faces when nature reveals that reforms are especially costly for G, which was exactly what happened in the Greek referendum. Under these circumstances things get really ugly. Case III is defined

by the equilibrium condition

$$pqC_E^A < V_2 < C_E^X + pq\left(C_E^A - C_E^X\right). \tag{3}$$

In this case the equilibrium of the game is that G holds out for a better deal and E does not make an adequate initial offer V_1, despite the fact that both players would be better off by finding an agreement during the negotiation game and thus avoiding the commitment stage altogether. The intuition behind this result is that both players bet on the value of L: The Greece player, on the one hand, makes a wager that L will be high, that is, that the implementation of reforms will be even harder after holding out, which should of course be taken into account by a rational eurozone player; the eurozone player, on the other hand, makes a wager that L will be low and that therefore no need to accommodate the demands of G will arise.

In Case III, if $L = 0$ (*viz.*, the Greek leadership loses the referendum), which happens with the probability h, E would not make an offer V_2. The reason for this is that, due to the condition $R + L > C_G^X > R$, the Greece player would then prefer to implement reforms over exiting the eurozone. If however L turns out as high (*viz.*, the Greek leadership wins the referendum), which happens with the probability $1 - h$, E would come up with a better deal. Since, by assumption, $V_2 > R + L - C_G^X$ this offer would definitely be accepted by G.

Faced with the choice between holding out or not G will compare the payoffs of both strategies, solving the game by backwards induction. If G choses to hold out for V_2 the payoff is

$$\pi_G^D = (1-h)\left\{q\left[p\left(-C_G^A - D\right) + (1-p)(-D-R)\right] + (1-q)(-D-R)\right\} + h(V_2 - D - L - R).$$

If G choses not to hold out for V_2 the payoff is

$$\pi_G^{nD} = -R.$$

For comparison, if the eurozone player made an offer V_1 and G accepted immediately its payoff would be given by

$$\pi_G^{ac} = V_1 - R.$$

G will only hold out for a better deal (if it did not receive an initial offer V_1) as long as $\pi_G^D > \pi_G^{nD}$. Whether the Greece player prefers the strategy of holding out, thus running the risk to go over the brink, depends on the probabilities of losing the referendum (h), the probability that G is definitely committed to risk a Graccident (q) and the risk associated with it (p). The strategy of holding out is preferred if h lies either in the interval

$$\frac{D}{V_2 - L} < h < \frac{C_G^A + D - R}{C_G^A - L - R + V_2} \tag{4}$$

and p and q lie in the intervals

$$0 < q \leq \frac{h(L - V_2) + D}{(h-1)\left(C_G^A - R\right)} \qquad \text{with} \qquad 0 < p < 1 \tag{5}$$

or

$$\frac{D - h(V_2 - L)}{(h-1)\left(C_G^A - R\right)} < q < 1 \qquad \text{with} \qquad 0 < p < \frac{D - h(V_2 - L)}{q(h-1)\left(C_G^A - R\right)}, \tag{6}$$

or h lies in the interval

$$\frac{C_G^A + D - R}{C_G^A - L - R + V_2} < h < 1 \qquad \text{with} \qquad 0 < q < 1 \qquad \text{and} \qquad 0 < p < 1. \tag{7}$$

Even if the conditions (4)/(5), (4)/(6) or (7) hold, G would immediately accept a first bailout offer V_1 if $\pi_G^{ac} > \pi_G^D$. For this to happen, the first offer basically has to be high enough as to compensate the Greece player for refraining from brinkmanship and thus forgoing a potentially better offer V_2. All parameter values

$$V_1 > h\left[pq\left(C_G^A - R\right) - L + V_2\right] + pq\left(R - C_G^A\right) - D \tag{8}$$

meet this condition. Interestingly, even if (8) holds and a mutually acceptable first bailout deal V_1 could be struck by the players, there are equilibria where E still does not make a such an offer. This happens if

$$C_E^A < \frac{V_1 - hV_2}{(1-h)pq},$$

which means that the Graccident costs for the eurozone player are too low to deter it from entering the commitment stage. This is an important result: Here unnecessarily high costs are being caused by both players' attempts to screw concessions out of the other side. Although the eurozone player has a sufficient willingness to compensate the Greece player for relinquishing brinkmanship, it does not offer an early deal but prefers instead to enter the commitment game, betting that $L = 0$, that is, that the referendum shows that G will prefer reform over Grexit.

4 Discussion

In this game the probability of a Graccident, p, and the probability of successful commitment, q, play a crucial role: The higher these probabilities the better is the Greece player's bargaining position; the more p and q increase, the greater are the chances that the eurozone player makes bailout offers that would otherwise not be made. Of course in the game p and q are both exogenously given and not choice variables of the Greece player. This notwithstanding a valuable lesson can be drawn: The Greece player has an incentive to act in a manner that p and q are high because this increases his bargaining power whereas the eurozone player has an incentive to keep both probabilities low.

In our interpretation, the actions of the creditors and Greek government in the months before the new bailout deal of July 2015 are consistent with this pattern. The Greek government, on the one side, by deliberately delaying to introduce capital controls and thus exposing the banking system to the risk of a sudden stop, tried to force the creditors' hand on making an acceptable third bailout offer; the creditor countries and the European Commis-

sion, on the other side, by maintaining that a rejection of the creditors' demands in the Greek referendum would be tantamount to a 'no' vote on eurozone membership, tried to increase the chances that the Greek government would lose the referendum, end up with a weak commitment and thus a weak bargaining position.

A key question is whether the threats of the Greek government were (and are) something the creditors should take seriously at all.[10] In our model the brinkmanship strategy works not so much by producing a direct threat to the creditors but by taking an option away from the Greece player: Firmly committed, the Greece player cannot decide to avoid the Graccident risk; he remains on a path towards an outcome that could well prove to be more expensive to everyone than the alternative. In our view one should not too quickly exclude that at least some of Greece's creditors were susceptible to this- Voters are, after all, fickle and the political consequences of a Graccident, causing even more fiscal transfers and bitter acrimony for years to come, were less imponderable than the consequences of bailing out Greece yet again.

As we see it, the ugly case III equilibrium of the game as described in Section 3.5 is very similar to what transpired in the months and weeks prior to the bailout: Probably an agreement may well have been possible as early as March. However, the eurozone representatives, probably trusting in the solidity of the firewalls constructed for the purpose of containing financial contagion originating from a débâcle, apparently decided that the negative consequences of a Graccident could be dealt with. The Greek negotiators, realising that early concession were off the table since the scenario of Greece leaving the eurozone did not instil terror any more, decided to hold out and to take their chances with the referendum, the result of which made unmistakably clear that the Greek government was committed to remain on the brink. As a result of risk-taking on both sides, the deal struck between the two actors became more costly for everybody. The result thus resembles the outcome of a classical prisoners' dilemma: If both sides had anticipated the negative consequences of a confrontation right from the start, a better deal for all would probably have been feasible. Instead both sides

[10]We thank an anonymous reviewer for raising this question.

decided to trump the other and, by doing so, ended up with a much worse deal.

5 Summary and conclusion

In this paper we offered a game-theoretic explanation of the actions of the Greek government in the months before the agreement on a third bailout for the country, and particularly of the decision to conduct a referendum on the creditors' demands. In contrast to many other observers we conclude that the actions of the Greek leadership appear to be consistent with a clear strategic calculus. We develop a game-theoretic model to show that the actions of the Greek government can be understood as an attempt to get a bailout package where the political costs caused by painful reforms are being sweetened as much as possible. We contend that this interpretation is very much compatible with the political economy of government behaviour.

In our sequential asymmetric-information game we reproduced three equilibria, the good, the bad and the ugly, which perhaps help to better understand what transpired between Greece and its creditors. Especially the ugly case III is informative: Here an early agreement is possible, yet the eurozone player decides that the negative consequences of a Graccident can be dealt with. The Greece player in turn decides to hold out and to take its chances in form of the referendum, which increases the political costs of a deal. Because of risk-taking on both sides the outcome for the two actors is clearly suboptimal while at the same time individually rational.

Our article emphasised several themes. First of all, we underlined that, by engaging in brinkmanship, it is well possible that the Greek government was able to induce the creditors to make a bailout offer that they would otherwise not have made. Second, the tactical set up of the Greek brinkmanship strategy appears not been understood well by many observers. The Greek leadership did not directly threaten with default or Grexit but instead remained obstinate in the face of rapidly increasing risks of an accidental euro exit. Of course capital

flight from Greece and the imposition of capital controls made things much worse for the Greek economy, but they also meant that the government was hell-bent on falling off the cliff if necessary. We emphasised, third, that holding a referendum was a stratagem designed to increase the political costs of having to accept exactly those terms the voters had already rejected. This, too, seems to have been completely misunderstood by many observers. The referendum was a tactical move to enable the government to hold out for a hopefully better deal. Of course the country would pay a high price for the government's obstinacy, yet the referendum definitely played into Tsipras' hands in the final phase of the negotiations. Fourth and last, we argued that what made the final deal better in the eyes of the Greek leadership was that it could be sold better to the own electorate than what had been on the table until then. As we see it, Tsipras' rather unexpected re-election in September 2015 shows that there must have been enough in the deal that could be sold those Greek voters that could be mobilised. For these concessions, however, a high price had to be paid: Had the new Greek government and the eurozone acted in the common interest right from the start, they could certainly have reached a better deal—that is, an agreement less demanding to the European taxpayer and less reliant on harsh austerity—much earlier. Instead both sides, reacting rationally to the existing incentives, decided to put the other on his mettle and thus ended up with an unsatisfactory compromise.

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