

# Pay or Play: The Varoufakis Negotiations from a Game-Theoretical Perspective

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## Introduction

In February of 2015, the newly-elected finance minister of Greece, Yanis Varoufakis, made an official visit to Berlin to renegotiate his country's bailout programme. Years of austerity policies had not led to economic recovery in Greece, but instead resulted in mass demonstrations and growing debt. Varoufakis describes the first meeting with his German counterpart, Wolfgang Schäuble, as being like a High-Noon standoff from a classic Western: 'The elevator door opened up onto a long, cold corridor at the end of which awaited the great man in his famous wheelchair.'<sup>1</sup> As Varoufakis approached Schäuble, his extended hand was refused.

The shunned hand dramatically illustrated the Eurozone split between Northern surplus countries and Southern deficit countries, with the former group of countries demanding strict austerity rules.<sup>2</sup> Moreover, the politicians were separated by personal and ideological differences. Whereas 'Schäublenomics'<sup>3</sup> defines a rule-based framework for the state, explaining Germany's focus on balanced budgets, price stability and structural reforms,<sup>4</sup> Varoufakis highlights the role of aggregate demand and global imbalances.<sup>5</sup>

However, the history of the bailout negotiations was more complicated than a pure 'battle of ideas' between two individuals. Foremost, Varoufakis and Schäuble were representatives of their respective countries' interests and aimed for the most beneficial negotiation outcome for their respective nation. Game Theory, a discipline of Economics, tells us that outcomes in such a bargaining situation are determined by the decision-makers' interacting opportunities, their preferences, as well as their perceptions of the other.<sup>6</sup> After describing the context in which the Greek bailout negotiations took place, I will motivate and establish a game-theoretical model which allows us to better understand the negotiations' outcomes.

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<sup>1</sup> Varoufakis, Y., *And the weak suffer what they must? Europe, austerity and the threat to global stability* (London 2016), pp. x-xi.

<sup>2</sup> See Young, B., 'German ordoliberalism as agenda setter for the euro crisis: myth trumps reality', *Journal of Contemporary European Studies*, 22/3 (2014), p. 276.

<sup>3</sup> Schierer, M., 'Gut instincts: the world according to Wolfgang Schäuble', *Die Zeit* (09.10.2015), <http://www.zeit.de/wirtschaft/2015-10/economics-wolfgang-schaeuble-point-of-view-austerity-policy> (12.12.2016).

<sup>4</sup> See Zuleeg, F., 'The Eurocrisis response: towards a German Europe?', in G. Bratsiotis and D. Cobham (eds), *German macro: how it's different and why that matters*, EPC Discussion Paper (2016), pp. 93-9.

<sup>5</sup> Varoufakis, Y., *The global minotaur: America, the true origins of the financial crisis and the future of the world economy* (London 2011) and Varoufakis, *Weak*.

<sup>6</sup> See Hirshleifer, J., 'Peace or war: an economic approach to appeasement', *University of California Los Angeles Working Paper*, 817 (2002), p. 1.

## Short history of the Greek bailout negotiations

The debt accumulated by Greece since its Euro debut reached the unmanageable size of €300 billion in 2009.<sup>7</sup> To avoid default, a tripartite committee led by the European Commission with the European Central Bank (ECB) and the International Monetary Fund (known as ‘Troika’) provided Greece with €110 billion in May 2010, but in return demanded cuts in public spending, higher taxes, and privatisation. A second bailout package was necessary in early 2012, providing an additional €130 billion, but thereby also containing harsher austerity measures. In late January of 2015, the left-wing challenger party SYRIZA, founded only in 2004 and led by Alexis Tsipras, achieved an electoral triumph in Greece by promising to end this crisis (mis)management.<sup>8</sup> SYRIZA’s ‘miraculous rise’ has been explained by the party’s pluralistic and diverse composition and its close alignment to important social movements.<sup>9</sup> However, cancellation of austerity policies required renegotiation of Greece’s bailout loans.

This ambitious task fell into the hands of Varoufakis, who quickly became dissatisfied with the policy options given to him by the Troika.<sup>10</sup> He believed that Greece could achieve a significant debt relief, his *conditio sine qua non* for any compromise, only through tough negotiation. In contrast, the majority of Tsipras’ inner circle expected that if Greece made greater concessions, it would finally achieve a better deal.<sup>11</sup> In his most recent book, Varoufakis describes at length how SYRIZA’s inner circle became increasingly ready to accept less ambitious deals, thereby ‘drifting into the mentality of the famous Brussel fudge’.<sup>12</sup> Tellingly, his book is dedicated to all ‘who eagerly seek compromise but would rather be crushed than end up compromised.’ Unlike Tsipras’ inner circle, Varoufakis clearly favoured Grexit over a third bailout without debt restructuring. Nevertheless, the party leader’s willingness to compromise enabled the extension of the Master Financial Assistance Facility Agreement (MFFA) on 20<sup>th</sup> February 2015. Although the agreement avoided controversial terms like ‘Troika,’ it was in effect based on the earlier bailout programme and thus heavily criticized by some far-left SYRIZA members.<sup>13</sup> The compromise secured Greece’s access to short-term liquidity, while the Troika promised to review its bailout conditions.

In contrast to this promising start, the relationship between the negotiators gradually started to deteriorate. In April, at a meeting of Eurozone finance ministers in Riga, the other politicians accused Varoufakis of failing to deliver ‘credible’ proposals and described him as a time-waster, gambler and amateur.<sup>14</sup> In the evening, Varoufakis skipped the traditional dinner with his colleagues, thereby causing negative media coverage. After the Riga

<sup>7</sup> Figures from: Bistis, G., ‘From Karamanlis to Tsipras: the Greek debt crisis through historical and political perspectives’, *Mediterranean Quarterly*, 27/1 (2016), pp. 36-9.

<sup>8</sup> Hobolt, S. and Tilley, J., ‘Fleeing the centre: the rise of challenger parties in the aftermath of the euro crisis’, *West European Politics*, 39/5 (2016), p. 972.

<sup>9</sup> See Spourdalakis, M., ‘The miraculous rise of the “phenomenon SYRIZA”’, *International Critical Thought*, 4/3 (2014), pp. 358-9.

<sup>10</sup> Varoufakis, *Weak*, p. 311, ft. 26.

<sup>11</sup> See Munevar, D., ‘Why I’ve changed my mind about Grexit’, *Social Europe* (23.07.2015), <https://www.socialeurope.eu/2015/07/why-i've-changed-my-mind-about-grexit/> (05.12.2016).

<sup>12</sup> Varoufakis, Y., *Adults in the room. My battle with Europe's deep establishment* (London 2017), p. 322.

<sup>13</sup> See Roar Magazine, ‘Glezos denounces Greek loan agreement as illusion’ (22.02.2015), <https://roarmag.org/essays/glezos-greek-bailout-illusion/> (06.12.2016).

<sup>14</sup> Varoufakis, *Adults*, p. 388.

meeting, Tsipras started to side-line Varoufakis, indicating that the latter went too far by ignoring the internal strategy of seeking a compromise. Additional irritation spread in May when Varoufakis announced that he had recorded parts of the meeting with his mobile phone<sup>15</sup> – a clear violation of tacit diplomatic rules. Mutual suspicion peaked in June, when SYRIZA unexpectedly called for a referendum on the creditor's bailout conditions, fuelling the Europe-wide perception that SYRIZA was not truly willing to compromise. Of all SYRIZA ministers, Varoufakis was by far the most vigorous and most visible supporter of the 'No' campaign, thereby further accentuating the differences between him and the party leadership.<sup>16</sup> Meanwhile, the ECB limited its emergency liquidity assistance, causing uncertainty to rise and balance sheets of Greek banks to worsen. SYRIZA had to impose capital controls, meaning Greek citizens could withdraw only a limited amount of money from their banks. Nevertheless, 61% of the population voted 'No', thus rejecting the Troika's bailout conditions.<sup>17</sup>

The chaotic situation led to a 'rude awakening' for many Greeks and a 'U-turn' by the government, which had few alternatives to stabilize the country's banks.<sup>18</sup> Tsipras asked for the resignation of Varoufakis, who later complained: 'I was made aware of a certain preference by some Eurogroup participants [...] for my absence from its meetings; an idea the prime minister judged to be potentially helpful to him in reaching an agreement.'<sup>19</sup> Varoufakis was replaced by Euclid Tsakalotos, who, on the 13<sup>th</sup> July, signed an agreement for a third bailout package of €86 billion, accomplishing 'in just a few hours what almost six months of earlier negotiations had failed to achieve.'<sup>20</sup> What had happened?

## Getting the game started

During Varoufakis' time as finance minister, it became widespread to speculate whether the author of a Game Theory textbook<sup>21</sup> would apply his academic knowledge in the negotiations.<sup>22</sup> Given a specified action space and game structure, Game Theory derives rational decision patterns, shaped by the respective preferences of the 'players.' The negotiations on the extension of the bailout package for Greece can be seen as a game between the Greek government and the European creditors.<sup>23</sup>

Most prominently, the negotiations have been characterized as a 'chicken game'<sup>24</sup>: lenders advocate a reformist programme which they believe will lead to a repayment of their loans. The argument goes that the Greek government believes that austerity precludes economic growth and therefore resists the implementation of such reforms. If neither is

<sup>15</sup> See Varoufakis, Y., 'The truth about Riga', *Blog 'thoughts for the post-2008 world'* (24.05.2015), <https://yanisvaroufakis.eu/2015/05/24/the-truth-about-rica/> (07.12.2016).

<sup>16</sup> See Varoufakis, *Adults*, pp. 443-73.

<sup>17</sup> See Erik Jones, E. and Torres, F., 'Using interdisciplinary analysis to shape a policy agenda', *Journal of European Integration*, 37/7 (2015), pp. 876.

<sup>18</sup> Both quotes: Bistis, *Crisis*, p. 52.

<sup>19</sup> Varoufakis, Y., 'Minister No More!', *Blog 'thoughts for the post-2008 world'* (06.07.2015), <https://yanisvaroufakis.eu/2015/07/06/minister-no-more/> (10.12.2016).

<sup>20</sup> Bistis, *Crisis*, p. 51.

<sup>21</sup> Hargreaves-Heap, S. and Varoufakis, Y., *Game theory: a critical text* (New York 2004).

<sup>22</sup> His latest book includes an Appendix describing a 'game' he designed for students in 2012 to analyse the negotiations between Greece and the Troika. See Varoufakis, *Adults*, pp. 492-5.

<sup>23</sup> I assume a homogeneous player 'Creditor.'

<sup>24</sup> See Varian, H., *Grundzüge der Mikroökonomik*, 7<sup>th</sup> edn (New York 1987), p. 625.

willing to change its course of action, the game will result in a ‘collision’ (involuntary Grexit). However, it is more likely that the two sides defer from their optimal option and reach a last-minute compromise.<sup>25</sup>

Others argued that SYRIZA was in a dominant position: if creditors would not agree to Greek demands, Greece would leave the Euro, redenominate debts into a new devalued currency, impose currency controls, and subsequently force losses onto German banks.<sup>26</sup> Interestingly, Varoufakis seemed to share this perspective. Already in 2011, he said that the demands of the EU creditors should be seen as an ‘incredible threat,’ because if Greece left the Euro the whole currency union would collapse.<sup>27</sup> Four years later, Varoufakis told the same story stating that ‘[t]he euro is fragile; it’s like building a castle of cards. If you take out the Greek card, the others will collapse.’<sup>28</sup>

But unlike the early years of the Eurozone crisis, European leaders now generally did not expect economic contagion, not least due to the ECB’s Quantitative Easing, a non-standard monetary policy programme designed to buy assets from commercial banks.<sup>29</sup> In 2015, European banks only had minimal exposure to Greek debt, while a domestic unemployment rate of 27% increased the political pressure on the Greek government to deliver fast results.<sup>30</sup> Given these changed power relations, Varoufakis’ insistence on not extending the bailout programme was an ‘incredible threat’ of his own.<sup>31</sup>

### A new model and how it fits the story

Models like ‘chicken game’ assume *complete information*. This is unrealistic given two facts: first, SYRIZA had no record in power. Second, the internal cohesion of the party was uncertain. Already on its founding congress in July 2012, discussions created a polarization between a pragmatic majority and an influential minority: the ‘left platform.’ The latter, making up approximately 30% of the support, was composed of former members of Greece’s communist party, former PASOK members of nationalist orientation and Trotskyists – all held together by their clear euro-scepticism.<sup>32</sup> Moreover, SYRIZA was closely interlinked with various social movements, such as environmental movements, immigrant groups, and the new rank and file trade union movement. After electoral success, SYRIZA’s internal differences were to become more dysfunctional, in particular because, as noted by observers, the party’s leadership was not ‘very effective in fully incorporating [these differences] into the party structure.’<sup>33</sup>

<sup>25</sup> See Scanlon, D., ‘The application of game theory to the Greek debt crisis’ (Unpublished paper, 11.12.2015), <http://myslu.stlawu.edu/~nkomarov/450/DaniPaper.pdf> (12.12.2016), p. 11.

<sup>26</sup> See Price, T., ‘The Varoufakis game is not chicken’, *openDemocracy* (16.02.2015), <https://www.opendemocracy.net/can-europe-make-it/tony-curzon-price/varoufakis-game-is-not-chicken> (12.12.2016).

<sup>27</sup> See Mike Bird: ‘What Greek finance minister Yanis Varoufakis used to believe about ‘game theory’ and the ‘incredible threat’ to Europe’, *Business Insider* (17.02.2015), <http://uk.businessinsider.com/greece-yanis-varoufakis-using-game-theory-2015-2> (05.12.2016).

<sup>28</sup> Jones, G., ‘Greek finance minister: The euro will collapse if Greece exits’, *Business Insider* (09.02.2015), <http://uk.businessinsider.com/greek-finance-minister-the-euro-will-collapse-if-greece-exits-2015-2> (05.12.2016).

<sup>29</sup> See Brunnermeier et. al., *Battle*, p. 232.

<sup>30</sup> See Coppola, F., ‘High-stakes European poker: a reply to Curzon Price’, *openDemocracy* (07.03.2015), <https://www.opendemocracy.net/can-europe-make-it/frances-coppola/highstakes-european-poker-reply-to-curzon-price> (12.12.2016).

<sup>31</sup> See Bird, *Threat*.

<sup>32</sup> See Spourdalakis, SYRIZA, p. 362, ft. 6.

<sup>33</sup> Ibid., p. 363.

Confronted with such a Black Box, European leaders decided for a rather friendly strategy: initially, they promised help and avoided discussions about ‘Grexit,’ but they also insisted on implementation of reforms.<sup>34</sup> Such an approach was reasonable given the structure of the EU, whose complex governance system depends on the premise that rules and common behaviour cannot change every time a new government is elected.<sup>35</sup> However, as rational players, European leaders stayed sensitive to any ‘signals’ sent by Athens in an attempt to identify their underlying intentions, thus constantly reviewing their current strategy.

<b>Greece Payoff for <math>t_1 = \text{Compromise}</math></b> 4: Promise Reforms, Help 3: No Reforms, Help 2: Promise Reforms, No Help 1: No Reforms, No Help	<b>Greece Payoff for <math>t_2 = \text{Grexit}</math></b> 4: No Reforms, Help 3: No Reforms, No Help 2: Promise Reforms, Help 1: Promise Reforms, No Help
<b>EU Payoff for <math>t_1 = \text{Compromise}</math></b> 4: Promise Reforms, Help 3: Promise Reforms, No Help 2: No Reforms, Help 1: No Reforms, No Help	<b>EU Payoff for <math>t_2 = \text{Grexit}</math></b> 4: Promise Reforms, No Help 3: No Reforms, No Help 2: Promise Reforms, Help 1: No Reforms, Help

Table 1: Payoff Structures for both players, with payoffs depending on type of Greece

Such a story, in which the identity of a player is known but his preferences are unknown, can be modelled with so-called *Bayesian games*. Player 1 is allowed to have some private information that affects the overall game play, while player 2 has beliefs about this private information.<sup>36</sup> In our case, this information reflects the internal consensus of the SYRIZA leadership ( $p$ ), which is known to Varoufakis and his advisors, but not to others, and is modelled by adding a third player, called *Nature*, to the game structure. EU’s guess of SYRIZA’s credibility ( $\hat{p}$ ) is initially based on tacit rules of EU diplomacy, and later on their experiences with Varoufakis. After *Nature*’s initial move, both players decide simultaneously how to negotiate: Greece can ‘Promise reforms’ or, with reference to SYRIZA’s campaign, refuse to do so. The EU, confronted with time-pressure and an illiquid member state, can decide to give fresh money (‘Help’) or refuse to do so. We can represent the payoffs with an ordinal utility value, based on the (revealed) preferences of the two players (Table 1).<sup>37</sup>

What is the reasoning behind the concrete sequences? First, ‘compromise willing’ Greece actively seeks a deal with the EU, therefore receiving more utility from a negotiating strategy which can promise some reforms. However, since they are running out of money, outcomes including ‘Help’ are strictly preferred to outcomes without fresh money. Second,

<sup>34</sup> See Brunnermeier et. al., *Battle*, p. 232.

<sup>35</sup> See Bistis, *Crisis*, p. 49.

<sup>36</sup> See Nurmi, P., ‘Bayesian game theory in practice: A framework for online reputation systems’, *University of Helsinki Series of Publications C*, C-2005-10 (2005),

[https://www.cs.helsinki.fi/u/ptnurm/papers/nurmi\\_bayesian\\_games\\_reputation.pdf](https://www.cs.helsinki.fi/u/ptnurm/papers/nurmi_bayesian_games_reputation.pdf) (12.12.2016), p. 3.

<sup>37</sup> See Fürtjes et. al., *Scheitern*, p. 544; Hirshleifer, *Appeasement*, p. 2.

'Grexit loving' Greece feels deeply bound to its campaign, which promised an end to reforms in uncompromising terms. Third, the EU, facing a compromise-seeking SYRIZA, prefers to offer 'Help' to rescue its member state and avoid financial instability. However, since the situation no longer threatens the whole system, creditors strictly prefer a deal which includes reforms. Fourth, EU would immediately stop all negotiations with a 'Grexit loving' Greece, which makes empty reform promises to buy time or tries to prepare a future 'blame game.'<sup>38</sup> This means strict preference for 'No help' negotiations.

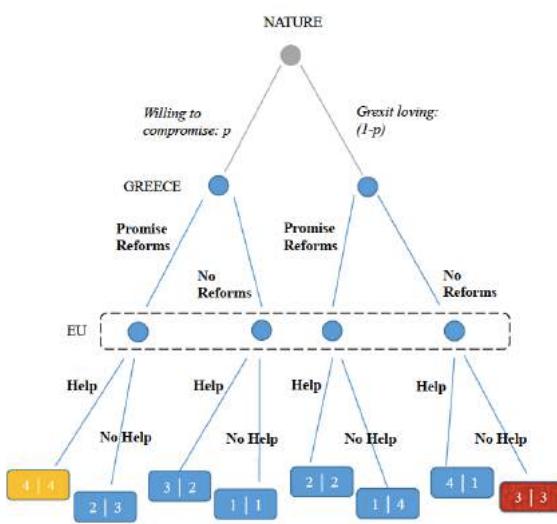


Figure 1: The Two Type Game in Extensive Form

		Compromise (p)	
		Help	No Help
GREECE	Promise Reforms	4   4	2   3
	No Reforms	3   2	1   1

		Grexit (1-p)	
		Help	No Help
GREECE	Promise Reforms	2   2	1   4
	No Reforms	4   1	3   3

Figure 2: The Two Type Game with Matrices

We can solve this static game (Figure 1) via the concept of *Bayesian Nash Equilibrium* (BNE). A BNE is the combination of a specific strategy profile with beliefs about the types of the other players, which maximizes the expected payoff for each player.<sup>39</sup> Greece knows its type and therefore plays its dominant strategy: if there is an internal consensus for compromise, it promises reforms, otherwise not. As can be seen from Figure 2, EU's choice depends on its expectation concerning the unknown type of Greece: if Greece is 'willing to compromise', EU's best response is 'Help'. If Greece secretly plans for Grexit, the EU's best response is to stop the money. The EU attaches probability  $\hat{p}$  to Greece being compromise-seeking, which allows us to calculate EU's expected payoff from both strategies. The model predicts two BNEs: EU plays 'Help' if  $\hat{p} > \frac{2}{3}$ , and 'No Help' otherwise.

How did  $\hat{p}$  evolve during the negotiation process outlined above? Initially, the EU welcomed the new negotiation partner in a cooperative way (high  $\hat{p}$ ). Since Tsipras and his inner circle were also interested in a compromise, this enabled the MFFA extension in February. However, the EU's perception of SYRIZA's credibility changed dramatically from April onwards. At the Riga meeting, Varoufakis clashed with the other ministers and did not participate in the diplomatic protocol. Mistrust spread further when media reported that Varoufakis had recorded the meetings. The surprising call for a referendum finally

<sup>38</sup> See Wodak, R. and Angouri, J., 'From Grexit to Grecovery: Euro/crisis discourses', *Discourse & Society*, 25/4 (2014), p. 418.

<sup>39</sup> See Gibbons, R., *Game theory for applied economists* (Princeton 1992), p. 151.

decreased  $\hat{p}$  below the threshold (in our model:  $\frac{2}{5}$ ). Playing the same game again,<sup>40</sup> the EU now concluded that playing ‘No Help’ was their dominant strategy, reflected by the temporary end of negotiations, uncertainty and a Greek banking crisis.

Why did Varoufakis allow for such a development? He seems to have approached ‘the Eurogroup negotiations in the same way [...] as he thought about them in 2011.’<sup>41</sup> He acted in another game – a game which centred around the supposedly dominant position of Greece and which he was determined to play until the end. But in 2015, Greece’s position had changed and the EU’s demands were anything but ‘incredible’ – unlike Varoufakis’ public statements, which changed  $\hat{p}$  in such a way that it led to the chaos of June 2015. Varoufakis’ crucial role in increasing  $\hat{p}$  is clearly illustrated by a leaked email, in which the financier George Soros wanted ‘to communicate with [Tsipras] to urge him to remove [Varoufakis] from [government] as [he was] the impediment to the agreement.’<sup>42</sup>

The model also implies that Tsipras had incentives to restore SYRIZA’s perceived credibility ( $\hat{p}$ ). By asking Varoufakis to resign and introducing the friendly Tsakalotos as a ‘new face’ to the creditors, he was signalling to the EU that Greece wanted an agreement. Although Tsakalotos shares many of Varoufakis’s views, he is ideologically committed to the Euro – a disposition expected to be helpful for new negotiations.<sup>43</sup> The increased  $\hat{p}$  resulted in a new bailout programme<sup>44</sup> that was at the same time more generous (larger sums of assistance) and more rigorous (greater constraints on Greek policy) than ever before, thereby being the logical consequence of this game.

To sum up, in this essay I used a game-theoretical approach to emphasise how Varoufakis’ actions increased the uncertainty surrounding the Greek bailout negotiations, which finally led to their chaotic collapse in June 2015. To Varoufakis’ credit, the general Eurozone conflict reaches far beyond the actions of a single actor. However, a crucial political prerequisite for overcoming the various structural, cultural and political differences is a stable perception of the other player involved in the negotiation game. In early 2016, Varoufakis himself admitted his failure during the negotiations by confessing that he ‘would do a lot of things differently.’<sup>45</sup>

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<sup>40</sup> Note, this is not a dynamic model: As  $\hat{p}$  changes, EU uses the same (static) game again to determine actions.

<sup>41</sup> See Bird, *Threat*.

<sup>42</sup> Reported in: Brunnermeier et. al., *Battle*, p. 267.

<sup>43</sup> See Bistis, *Crisis*, p. 48-9.

<sup>44</sup> See Jones/Torres, *Agenda*, p. 876.

<sup>45</sup> Ekathimerini, ‘Varoufakis speaks about Plan X and its rejection’ (20.01.2016), <http://www.ekathimerini.com/205218/article/ekathimerini/news/varoufakis-speaks-about-plan-x-and-its-rejection> (06.12.2016).