

An Incomplete Contract Approach to the Eurozone Fiscal Governance over France

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《Abstract》

This is a conceptual application of incomplete contract theory to the eurozone fiscal governance game between the European Commission and France over the latter's budget deficit reduction. Yutaka Suzuki's model of renegotiation in incomplete contract games is applied. A car-part supplier and a car-assembler are engaged in renegotiation over a car part's quality and setting a new price for it if its quality fails to meet the level promised in an initial contract. The model focuses on the incentive incorporated in a fixed price in incomplete contracting and makes it possible to illuminate the critical factors, a combination of the lack of flexible sanctioning and sufficient incentive, in analyzing how the European Commission has failed to enforce the EU fiscal rules.

I Introduction

This is an incomplete contract approach to the eurozone fiscal governance between the European Commission (the Commission) and France. Yutaka Suzuki's model of renegotiation in incomplete contract games is applied here. A car-part supplier as an agent and a car-assembler as the principal are engaged in renegotiation over an initial contract to set a new price, rather than terminating the contract, if the quality of a car-part

fails to meet the level promised in the initial contract. Renegotiation is an incomplete contract approach to undoing ex post inefficiency realized after implementing the initial contract.

The Commission and France are engaged in renegotiation over setting a new target year for France to meet the deficit limit, below 3 per cent of GDP, after its failure despite the initial agreement.

The part-supplier and the car-assembler take a coordinated approach for team technology development. Similarly, the Commission and France take a coordinated approach to cutting the latter's deficit to below 3 per cent of GDP.

This renegotiation model deals with what roles a fixed price plays to provide the part-supplier with necessary incentive in incomplete contracting. It enables us to see how critical incentive problems are in explaining eurozone states' failures to comply with the EU fiscal rules. The eurozone fiscal governance lacks flexible sanctioning against member states in correspondence to their deficit levels.

In the team technology development in which the car-part supplier and the car assembler are engaged, there exists a sufficiently large price gap between lower prices for a lower quality part and a higher fixed price for a good quality part. This induces the part-supplier to make ex ante investment so that it can sell its good quality product at the higher fixed price.

A eurozone fiscal governance game between the Commission and any eurozone state has the same features as the team investment above and can thus be analyzed with Suzuki's model of renegotiation over division of surplus between the part-supplier and the car-assembler in the incomplete contract game.

Philippe Aghion and Jean Tirole also include in incomplete contract

games supranational authority – states relations in which they are engaged in a team project.¹⁾

There are two types of approaches to agency problems in which a principal and an agent have conflicts of interest, while being engaged in a team project. One is a vertical integration, in which control right is transferred from an agent to a principal. With vertical integration, an agent is now made to be part of the principal's organization. Their conflicts of interest are then solved with this vertical integration between them.²⁾

There is still the problem of legal power and real power. While the principal has the legal power to decide which project should be chosen to pursue, the agent knows projects better and exercises real power over decisions to choose the optimum one. The asymmetric information approach is used to analyze this type of agency problem.

The principal would do better to delegate executing powers to the agent when the principal has only soft information on projects. With soft information on projects, it is hard to tell which one should be chosen. On the other hand, the agent has hard information on projects and can know which one has a better chance for success and will bear larger benefit.³⁾

Asymmetric information between them enables the agent to obtain information rent at the sacrifice of the principal's interest. By strengthening monitoring over the agent, the principal can make this rent smaller.⁴⁾

1) Philippe Aghion and Jean Tirole, "Formal and Real Authority in Organization," *Journal of Political Economy*, Vol. 105, No. 1, (February 1997), p. 5.

2) Aghion and Tirole, *ibid.*, p. 3 and p. 7.

3) Aghion and Tirole, *ibid.*, pp. 3-5. "Hard information about a project's payoffs can be costlessly and instantaneously verified by the other party if communicated by the party who collected it. Soft information cannot be verified by the other party." Aghion and Tirole, *ibid.*, p. 7.

In eurozone fiscal governance, though it is far short of being called “vertical integration,” a key step towards vertical integration had been taken in the aftermath of the 2010–2012 financial crisis.

First, a semi-automatic sanctions mechanism was incorporated into the EU fiscal rules in December 2011. It largely enhanced the Commission’s powers to impose fines on eurozone states repeatedly breaching the EU fiscal rules.⁵⁾ It was at least a partial transfer of “control right” or sovereignty to the supranational authority, the Commission.

Second, the “European semester” was institutionalized into eurozone states’ budgetary process. This enables the Commission to scrutinize their budget plans over nearly six months from around May to September and October before the budget finalizations. If the budget plans are unsatisfactory due to large deviations from the deficit limit, they will not be passed by the Commission and will be sent back to their parliaments for revisions. Revisions would be controversial for their governments. This pressures eurozone states into making their budget plans more acceptable to the Commission.

II Incomplete contract theory

Jean Tirole points out that complete contracting is based on the assumption of no limit to information in writing contracts: “[T]here is no

4) Yutaka Suzuki, “Towards building a theory on ‘commitment, renegotiations and incomplete contract’ theory,” *Keizai Shirin* (The Hosei University Economic Review), Vol. 66, No. 1 (July 1998), pp. 311-312. Aghion and Tirole, *ibid.*, pp. 2-4.

5) This empowerment of the Commission is described as: “During the eurozone’s sovereign debt crisis, the European Commission was given extra clout to enforce the 3 per cent rule, including the power to impose fines on countries that flout the budget rules or badly exceed their targets.” Adam Thomson and Alex Baker, “France calls for deficit leniency,” *Financial Times* (hereafter *the FT*), 15 August 2014, p. 3.

limitation on the parties' ability to foresee contingencies, to write contracts, and to enforce them."⁶⁾ However, the reality is that contracting parties can write "a number of possible states of nature ex ante in contract" but that "[p]arties to a contract initially do not know which state of nature will prevail" and that "[e]x post they all observe the realization of the state of nature."⁷⁾

He also states that to write "[an] optimal contingent contract," the information of "the state of nature" must be elicited "from the agents in a manner that uniquely implements the state-contingent allocation."⁸⁾ Especially, "a variable which is 'observable by the parties' but 'not' observable 'by the court'" matters. It is by nature "nonverifiable." To implement "the state-contingent allocation," a "nonverifiable" but "observable" variable is indispensable. However, the principals cannot elicit such a variable unless it is made to be "payoff-relevant when it is learned by the parties."⁹⁾

R&D exemplifies the case of the point above. First, if the agents are not sure the principal will be willing to pay a price not lower than "the license fee"¹⁰⁾ which is "determined according to some sequential bargaining process,"¹¹⁾ "[i]nefficiency will result."¹²⁾ The agents will not transfer their technological developments at any price lower than the license fee. Trade does not take place, though it is socially efficient. "The challenge is therefore to elicit the state of nature from the agents in a manner that

6) Jean Tirole, "Incomplete Contracts: Where Do We Stand?" *Econometrica*, Vol. 67, No. 4 (July, 1999), p. 754.

7) Tirole, "Incomplete Contract," *ibid.*, p. 754.

8) Tirole, "Incomplete Contract," *ibid.*, p. 754.

9) Tirole, "Incomplete Contract," *ibid.*, pp. 754-5.

10) Tirole, *ibid.*, pp. 752-753.

11) Tirole, *ibid.*, p. 748.

12) Tirole, *ibid.*, p. 752.

uniquely implements the state-contingent allocation.”¹³⁾

Second, the court allows the parties to renegotiate if trade breaks down for the reason above. “[S]uch a trade, if voluntary, necessarily improves the welfare of all parties. So, even if the commitment not to allow future trades is *ex ante* socially optimal, it is no longer *ex post* socially optimal.”¹⁴⁾ Through renegotiation, such information needs to be made payoff-relevant so that it will be transferred at a price not lower than the license fee.

In more general terms, Tirole summarizes points of information that limit complete contracting: the agents may have private information at the time of contracting which may lead to adverse selection; the agents also “receive future information that cannot be directly verified by contract enforcement authorities; this information may be private information (hidden knowledge); and agents may take actions that cannot be verified (moral hazard).”¹⁵⁾

In eurozone fiscal governance, the Commission needs to elicit a large enough effort from France to decrease its deficit below 3 per cent of GDP. This is exactly equivalent to the principal attempting to elicit valuable information on R&D developments from the agent. Any success for R&D needs the agents’ higher efforts. The Commission must provide France with incentive strong enough to induce the latter to act appropriately.

III Timeline of incomplete contract on France’s deficit reduction

As a first step to identifying the nature of the governance game between the Commission and France over the latter’s deficit reduction, a timeline is

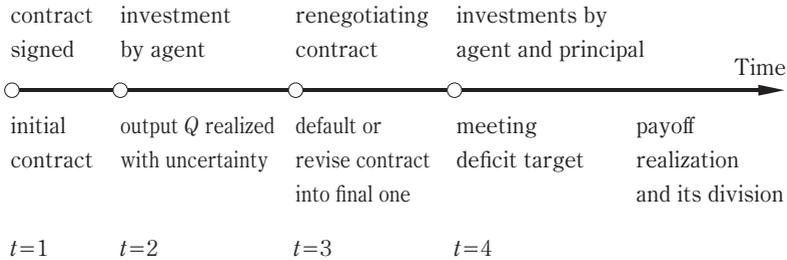
13) Tirole, *ibid.*, p. 754.

14) Tirole, *ibid.* p. 753.

15) Tirole, *ibid.*, p. 754.

set out below, following the concept of incomplete contract.

Figure 1: Timeline of incomplete contract on France’s deficit reduction



Source: This is a modified version of a timeline of an incomplete contract from Yutaka Suzuki, “Towards building a theory on ‘commitment, renegotiations and incomplete contract,’” *KEIZAI SHIRIN* (The Hosei University Economic Review), Vol. 66, No. 1 (July 1998), p. 320.

In applying the framework of incomplete contract, the point of making an initial contract is set here for convenience to be October 2013.¹⁶⁾ In October 2013, the Commission and France agreed on resetting the target year for France to bring down the latter’s deficit below 3 per cent of GDP to be 2015.¹⁷⁾ (In fall 2011, the target year for France was originally set to be 2013, but in the first-time renegotiation in May 2013, the Commission agreed to postpone it to 2015.)

16) Renegotiation in October 2013 was in fact the Commission’s attempt to reset the target year for France to meet the deficit target. The Commission set the target at 2015, delaying by two years. But it is treated here as the timing of making the initial contract between the Commission and France. Such an artificial conversion is made here for simplicity to avoid a repetition of renegotiation. France has negotiated to delay meeting the target year several times.

17) The target year was in fact originally set in 2011 for France to be 2013. But through the first-time renegotiation in May 2013, the Commission agreed to reset it to be 2015.

At $t=1$, the Commission and France sign the initial contract on the reduction of France's deficit below 3 per cent of GDP in 2015.

At $t=2$, France makes ex ante investment to realize deficit reduction below 3 per cent of GDP. It takes the form of cutting government expenditures, raising taxes and implementing structural reforms for mid-term growth. These efforts are all politically costly.

However, if France could carry them out, it would make itself free of any fines and of budgetary interference from the Commission. Not to have fines imposed and to maintain budgetary sovereignty work as critical incentives for France to make ex ante investment of cutting back deficit.

At $t=2$, as a result of France's ex ante investment, France's deficit level (or the output Q) is also realized with uncertainty.

At $t=3$ if France's deficit level exceeds the deficit limit of 3 per cent of GDP, the Commission renegotiates with France over the terms of the initial contract. In incomplete contract theory, renegotiation is defined: "After the contract by the parties is implemented, the parties can 'at stage 3' write a new contract and thereby undo any inefficient outcome."¹⁸⁾

Through renegotiation and by signing a final contract, the principal provides the agent with necessary incentive for making investment to undo the inefficient state realized at $t=2$.

The Commission, the principal, has an option to default on the initial contract by terminating transactions with France and imposing sanctions on it.

Or the Commission can choose to revise it through renegotiation. The principal is better off by renegotiating the initial contract and by setting a new price, P^*_0 , than terminating the initial one. Terminating the initial

18) Tirole, "Incomplete Contracts," *ibid.* p. 759.

contract ends up with payoff 0, since there is no transaction. By renegotiating the initial terms of the contract and setting the new price, the principal gets half of the surplus, $1/2S$, rather than 0.

By completing the transaction, the team project, the principal can put on the market the final product equipped with the car-part (or the output Q) the agent developed, which is also applied together with the technology the assembler developed. This produces surplus S . The assembler receives half of this, $1/2S$, and the agent receives the remaining half, $1/2S$, if their bargaining powers are supposed to be equal.

By accepting the renegotiation proposal from the principal, the agent obtains its output Q sold to the principal and also receives half of the surplus, $1/2S$. It obtains $Q + 1/2 S$ altogether.

If the initial contract is terminated, the agent has no option other than to sell the output Q in open markets and receives only Q . It cannot receive $1/2S$.

Thus, the agent can neither reject the renegotiation offer from the principal nor demand a larger share of surplus S than the one originally agreed upon. In renegotiation, a renegotiation-proof mechanism is put in place. It allows renegotiation to undo ex post inefficiency only when the state realized at $t=2$ is the Bad State.¹⁹⁾

At $t=4$, the agent first makes a relation-specific investment such as cutting deficit below 3 percent of GDP to meet the target year newly set through renegotiation.

Since this is the team production, the Commission also has to make its investment, I , in a relation-specific way. Their investments are complementary.

19) Yutaka Suzuki, *ibid.*, p. 325.

At $t=4$, payoffs for the agent, France, and the principal, the Commission, will also be materialized. As stated earlier, the principal receives $1/2S$, while the agent receives $Q + 1/2S$.

France will secure assistance measures for deficit reduction in exchange for its efforts to meet the deficit target.

The Commission will obtain France's compliance with the EU fiscal rules by bringing the latter's deficit under control.

IV Fixed price, flexible pricing and incentive for ex ante investment

1 Incentive problem for ex ante investment

In an incomplete contract, an agent's technology investment ex ante is supposed to be relation-specific and unverifiable. This nature poses a risk for the agent. It deters the agent from making such an investment ex ante. Because of the non-verifiability, the agent cannot claim rewards for its contribution to joint production through the investment ex ante. His investment becomes a "sunk cost." His investment cannot be retrieved. This is called the "hold up" problem.²⁰⁾

The principal attempts to exploit the agent's unverifiable investment ex ante to his advantage. This leads to inefficiency ex ante and ex post.²¹⁾

Even before that, being unverifiable means that the principal and the agent cannot write payoff for the agent's contribution into their contract beforehand.

It is too costly to write "an ex ante contract contingent on the realized

20) Shinsuke Kanbe, *A Primer in Game Theory & Informational Economics* (Tokyo: Nippon Hyoronsha, 2004), p. 293.

state.” Cost involved in such a “fine-tuned” contract exceeds any benefits from it.²²⁾

In combination with investment by the principal which follows the agent’s preceding investment, however, if the agent’s investment *ex ante* bears net profit for the society of the principal and the agent, such investment *ex ante* is socially preferable and should be made.

However, the problem here is how the investment *ex ante* can be secured, while the agent’s right to payoff for its contribution cannot be specifically spelled out in a contract beforehand because of its non-verifiability.

Furthermore, if the principal refuses to purchase the product developed by the agent with technology invested *ex ante*, the agent faces a serious problem. Despite *ex ante* investment, it cannot put the product and technology for this on open markets for general use because the nature of the technology is relation-specific and is very much for limited-use.

Given the nature of these two factors, there must be an incentive arrangement which can induce the agent to make *ex ante* such a relation-

21) Patrick Bolton and Mathias Dewatripont, *Contract Theory* (Cambridge, Massachusetts: The MIT Press, 2005), p. 491.

Based on O. Hart and J. Moore, Bolton and Dewatripont summarize “the holdup problem” involved in a team investment due to uncertainty derived from a seller’s *ex ante* valuation of a product’s value which a seller provides *ex post* and due to uncertainty derives from a seller’s *ex ante* valuation of its production cost: “The utility they obtain from trading depends on the buyer’s valuation v and the seller’s production cost c . These utilities are uncertain at the time of contracting and can be influenced by specific investment made by each party at an earlier date. . . . The contracting problem . . . is one where the state of nature $\theta = (v, c)$ and the investment levels i and j are not contractable, although θ is observable to both contracting parties *ex post*. If there is spot contracting *ex post*, after θ is realized and investments i and j are sunk, and if the gains from trade at that point are evenly divided between buyer and seller, there will be underinvestment in equilibrium.” Bolton and Dewatripont, *ibid.*, pp. 560-562.

22) Bolton and Dewatripont, *ibid.*, p. 491.

specific investment. A fixed price in an incomplete contract is exactly such an arrangement.²³⁾

2 France's deficit reduction as ex ante relation-specific investment

How can we identify France's deficit reduction and structural reforms to be relation-specific in their nature? Amid deflationary pressures facing the eurozone since 2014, cutting back government expenditures would accelerate them.

By far France's greatest such effort was "the Responsibility Pact". The Hollande government put it forth in January 2014, promising to cut tax for businesses by €40bn and cut government expenditures by €50bn over 2015 to 2017.

Cutting tax has a pro-growth effect. But cutting government expenditures puts further deflationary pressures upon the French economy. Unless compelled by the EU fiscal rules, it would have preferred expanding fiscal stimuli.

The restriction upon France's policy choices above thus derived specifically from the contract based on the EU fiscal rules with the Commission over its deficit reduction. France's policy efforts or investment ex ante had been thus relation-specific in nature.

3 Non-verifiability of France's ex ante investment

At the point of making the initial contract in May 2013, the Commission was unable to specify efforts which France had to make to meet the deficit limit. Among factors which are involved for this unpredictability, two are very salient.

23) Kanbe, *ibid.*, pp. 288-295.

One is the difficulty to predict future economic growth rates. Whether France can meet the deficit target or not depends critically on its growth rates. If its economy grows as predicted, there are expected revenues. But if the growth rates turn out lower than expected, revenues fall and the deficit becomes larger. Often the Commission warns eurozone states not to make the real future size of a deficit look smaller by making over-optimistic growth estimations.

The other is the Commission's limit of surveillance over eurozone states' budget deficits due to decentralization of budgetary authority. Under the current monetary union, which lacks a fiscal union, budgetary powers are decentralized to member states. The Commission can make mainly macroeconomic surveillance focusing on their deficit figures and has difficulty to interfere deeply enough in specific budgetary planning. Therefore, the Commission could only ask, for example, France in November 2014 to come up with a credible and persuasive plan to put itself on course to meet the 3 per cent deficit limit rule.²⁴⁾

Jean Tirole differentiates two types of monitoring in financing. One is passive monitoring. The other is active monitoring. The former is the one only practiced by share- holders over companies whose stocks they hold. It is aimed at measuring "value of asset in place" to "[take] a picture of the health of the firm at various points of time." It is also "retrospective." The Commission's fiscal monitoring over eurozone states seems to have been closer to passive monitoring, given its decentralized system of budgetary powers.

The latter is the one that a large investor such as a bank carries out with

24) Jean Tirole points out: "[I]nvestment is worth funding only if the financial contract with the investors induces the entrepreneur to behave." Jean Tirole, "Corporate Governance," *Econometrica*, Vol. 69, No. 1 (January, 2001), p. 6.

respect to a firm at considerable cost to which it is a big creditor. It is “prospective” and attempts to “[affect] the value of assets in place” by “[preventing] the most egregious forms of misbehavior.”²⁵⁾

Under the system of budgetary decentralization in the eurozone, the Commission’s fiscal monitoring seems to have been closer to passive monitoring. With the introduction of the Commission’s budgetary review, however, the eurozone’s monitoring has moved closer to active monitoring.

As described in the analytical timeline, the outcome Q becomes realized with uncertain probability at $t=2$.

Only at the point of renegotiation in October 2014²⁶⁾, $t=3$, the Commission was able to make precise and specific demands on France as conditions for extending the target year by another two years to 2017. It demanded that France had to cut structural deficit by 0.8 per cent points. France promised a 0.3 per cent point cut. Both came to an agreement on a 0.5 per cent point cut.

Specific demands of this kind were made possible only when it became clear near the end of the initial contract, $t=2$, how much more deficit reduction was necessary from France’s budget plan before it could get at least a passing grade for another extension of the target year.

As another case for non-verifiability of ex ante investment, there exists the Commission’s distrust towards France’s commitment and ability to implement ex ante investment. For example, in December 2014 which was part of the renegotiation period of $t=3$, the conflicts of interest between the Commission and France were brought to light. While demanding implementation of structural reforms as a condition for passing France’s

25) Tirole, *ibid.*, pp. 8-9.

26) October 2014 was in fact the time of the second renegotiation. But it is treated here as the first-time renegotiation.

budget plan, the Commission suspected whether the Hollande government had the ability to carry out politically costly reforms such as liberalizing the notary and pharmacist professions and labor markets. It was too weak to carry them out. The Commission was concerned that the implementation process would be beaten back by domestic opposition.²⁷⁾

Gunther Ottinger, a political ally of the German chancellor Angela Merkel, was opposed to the Commission's accepting France's budget plan unless it secured "very clear, concrete" and "not ambiguous enough" measures "in return."²⁸⁾ Emmanuel Macron, economic minister in the Hollande government, also described past French reforms flatly as being "fake."²⁹⁾

The above suggests it would have been considerably difficult to predict or assess beforehand how much efforts France would have made during the period of ex ante investment or to what extent these efforts would have brought about the necessary results. This made it difficult for the Commission and France to write a complete contract at $t=1$.

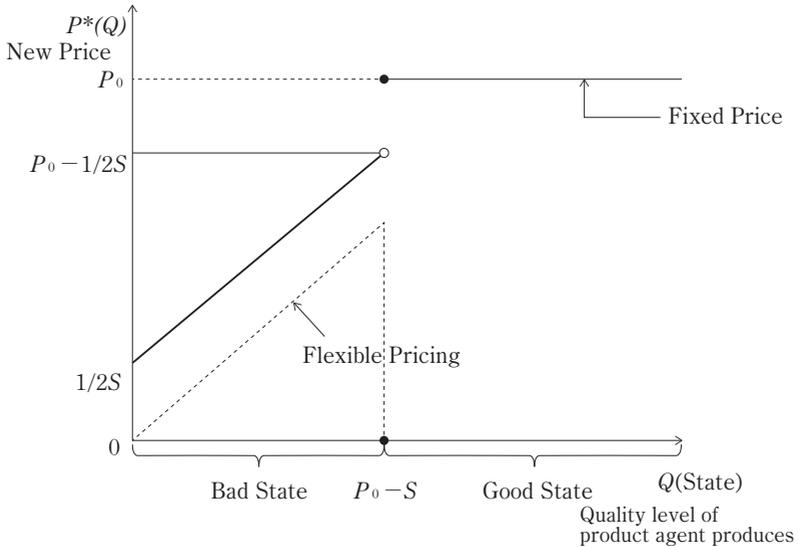
V Fixed price as incentive for ex ante investment: application of fixed price in the eurozone fiscal governance

27) Editorial, "The struggle for reform in France and Italy," *the FT*, 13 and 14 December 2014, p. 8.

28) Peter Spiegel, "Merkel ally questions Hollande's 'willingness' to fix French economy," *the FT*, 21 November 2014, p. 1.

29) Hugh Carnegie and Anne-Sylvaine Chassany, "France demands 'real money' boost for EU," *the FT*, 19 November 2014, p. 3.

Figure 2: Fixed price as incentive — analytical framework



Source: Yutaka Suzuki, “Towards building a theory on ‘commitment, renegotiations and incomplete contract’,” *KEIZAI SHIRIN* (The Hosei University Economic Review), Vol. 66, No. 1 (July 1998), Figure 4, p. 328.

Figure 2 is a model that describes renegotiation at $t=3$. This illustrates how a fixed price works as the key incentive for the agent to make ex ante investment.

In Figure 2, the horizontal axis shows the state of quality of an output, Q . It has two states, the Bad State or the Good State, which the agent produces with technology ex ante invested.

The vertical axis shows bargaining powers between the agent and the principal over surplus, S , or over the division of surplus deriving from the product’s level of quality. They are reflected in the price at which the agent, the car-part supplier, can sell its output to the principal, the car-

assembler. The price is in correspondence to the output's level of quality on the horizontal axis.

If the agent's investment ex ante goes well, the realized state of the output is in the Good State. If his investment ex ante goes badly, the realized state of the output is in the Bad State.

The dot ● on the horizontal axis shows the threshold for the output's quality in the Good State. Once the level of the output's quality reaches the threshold, $P_0 - S$, the price at which the agent can sell jumps upward from $P_0 - 1/2S$ to P_0 in Figure 2. P_0 is the fixed price. This is the discontinuous jump in price from ○ to ● on the vertical axis. Similarly, the price the agent can sell its output discontinuously falls if its quality fails even slightly to meet the threshold level, $P_0 - S$.

The price (or the agent's bargaining power over surplus S) corresponding to ○ quality is only $P_0 - 1/2S$. However, once the output's quality reaches point ● on the quality scale, $1/2S$ is added to $P_0 - 1/2S$, making the price P_0 . This big jump to or fall from ● in price works as a critical incentive for the agent to make ex ante investment.

Under this fixed price system, incentives are put in place at three points.

First, the price for the output with the quality of ○ jumps to P_0 , if the output's quality reaches to $P_0 - S$.

$P_0 - S$ is the point which makes Q equal to $P_0 - S$ ($Q = P_0 - S$). In other words, it is the point where the output's quality just meets the level of quality necessary for the fixed price.

Second, as the equation above suggests, if the output's quality reaches $P_0 - S$, the agent secures S (or 1) bargaining power over any additional surplus by improving the product's quality beyond the threshold point. This gain in the agent's bargaining power over additional surplus is the second incentive for it.

For example, in the eurozone fiscal governance, if France meets the deficit limit of 3 per cent of GDP, it can use at its disposal any residual from additional deficit reduction.

On the other hand, if the product's quality falls even slightly from ●, the price falls discontinuously and sharply from P_0 to $P_0 - 1/2S$. The agent loses $1/2 S$.

Third, when the output's quality remains from 0 to ○ on the quality scale, the state realized at $t=2$ is in the Bad State. Throughout this state, the agent and the principal renegotiate on the terms of the initial contract to undo ex post inefficiency. Since renegotiation is done through the Nash bargaining solution (the NBS), surplus deriving from undoing ex post inefficiency is divided according to their bargaining powers. If their bargaining powers are supposed to be equal, each gets $1/2S$. This gives the agent an incentive to improve ex post inefficiency.

Thus, under this model of incentive contracts, incentive schemes are placed at three important points throughout the whole range of quality scale from 0 to ○, from ○ to $P_0 - S$, and beyond $P_0 - S$.

VI “Fixed Price” in the eurozone fiscal governance - application

In the context of eurozone fiscal governance, the fixed price should be the budget deficit limit of 3 per cent of GDP signed in the initial contract between the Commission and France at $t=1$, October 2013.

If the 3 per cent deficit limit is the incentive corresponding to the fixed price, why has it failed so far to induce France to bring deficit below the limit through ex ante investment?

First, the EU fiscal rules lack “flexible pricing.” It is the precondition for the fixed price to work as an incentive.

In Figure 2, the transfer price at which the principal purchases the output changes flexibly along the line of $1/2S$ on the vertical axe to \circ in the center top in Figure 2 in correspondence to the output's state on the quality scale Q ranging from 0 to $P_0 - S$.

At point 0 on the quality scale Q , in correspondence to the product's lowest level in quality, the agent makes only $1/2S$. This means that the agent can claim $1/2$ over any surplus S materialized by improving the output's quality above 0.

Once the state of the product reaches the point at $P_0 - S$, the agent can sell the product at the fixed price, P_0 .

As Figure 2 shows, there is a considerable price gap between P_0 and $P_0 - 1/2S$. Furthermore, after reaching the threshold $P_0 - S$ on the quality scale, the agent can have S over additional surplus from improvement in quality beyond $P_0 - S$. This price gap provides the agent with an incentive for achieving the quality of $P_0 - S$.

Once France meets the 3 per cent deficit limit, it can be set free from the Commission's budgetary interference. If it is able to cut deficit more than the deficit limit, it can control all budgetary residuals. It can allocate the residuals to any programs free of the Commission's interference.

Why, then, has the 3 per cent deficit limit failed to work?

Under the dichotomy of either imposing the fine of 0.2 per cent of GDP or not, the Commission has hardly employed the kind of "Flexible Pricing" shown in Figure 2. If the Commission could impose fines flexibly upon eurozone states in correspondence to their deficit levels, they would have no way to escape from them. However, the Commission had not had this option of the flexible application of fines. This seems to be one of the reasons for its failure.

Olli Rehn, the Commission vice president for economic and monetary

affairs under the Barroso presidency, wrote in October 2014 that peer pressures, opprobrium and losing influence are the only factors that bring states breaching the fiscal rules into line with the EU fiscal rules.³⁰⁾ It suggests that the option of imposing fines has not been on the table for the Commissioner.

The Commission considers cases of “egregious violations” of the EU fiscal rules as a reason for imposing fines. It warned in its official letter in late October 2014 that France’s 2015 budget plan with a deficit close to 4.5 per cent of GDP was a case risking a violation.³¹⁾

However, Jean-Claude Juncker, the new European Commission president taking office in November 2014, changed the Commission’s practices on the EU fiscal rules. Under his presidency, the Commission seems more ready to introduce flexible pricing. In November 2014, the Commission judged that France had not made sufficient efforts to cut deficit in the budget plan for 2015 and moved very close to imposing the first fines upon France under the new EU budget rules.³²⁾

France’s efforts for deficit reduction and reforms concerned EU officials, who felt them to be short of what the new fiscal rules required. France’s estimation of achieving a 0.5 per cent point reduction in structural deficit was based on “revenues seen uncertain at this state.” The 0.5 per cent reduction was considered in the budget review by the Commission to be the threshold for France to have its 2015 budget plan passed.³³⁾

30) Olli Rehn and Jean Arthuis, “Only public opprobrium will press Rome and Paris into reform,” *the FT*, 30 October 2014, p. 9.

31) Adam Thomson, “France to cut extra €3.6bn from 2015 budget deficit,” *the FT*, 28 October 2014, p. 4.

32) Michael Stothard, “Paris courts Brussels with moves to lift jobs market,” *the FT*, 11 December 2014, p. 3.

33) Peter Spiegel, “Brussels urged to refocus on eurozone,” *the FT*, 9 December 2014, p. 2.

Juncker gave the French budget plan a conditional passing grade, demanding that it come up with not promises but a credible and concrete plan to meet the deficit target. Pierre Moscovici, the Commission vice president for economics and finance, warned that if France, Italy and Belgium failed to put their finances in order, the Commission would not hesitate to implement its duties.³⁴⁾

Second, what is the incentive for eurozone states to meet the deficit limit? There is no equivalence to the incentive of the fixed Price in the eurozone fiscal governance. What eurozone states gain by meeting the deficit limit is to be set free of budgetary interference, especially the risk of fines, from the Commission.

At $t=3$, the Commission renegotiates with eurozone states exceeding the deficit limit. Reviewing budget plans in October and November, the Commission demanded from France a 0.8 per cent point reduction of structural deficit (cyclically adjusted, net deficit) and from Italy a 0.7 per cent point reduction, respectively. France argued for a 0.2 per cent point reduction instead and Italy did so for a 0.1 per cent point reduction. However, France accepted a 0.5 per cent point reduction and Italy a 0.3 per cent point reduction.³⁵⁾

Prior to the Commission's budget review, Matteo Renzi, the Italian prime minister, and François Hollande, the president of France, argued that the Commission had to ask Germany, a large current account surplus country, to stimulate growth in EU through large-scale infrastructure investments. It was quid pro quo for offsetting deflationary pressures upon the two states from their deficit reductions.

34) Michou Akikuni, "the European Commission sees worsening deficits of France and Italy problems," *Japan Economic News*, 29 November 2014, p. 6.

35) Peter Spiegels, "Europe clears France and Italy budgets," *the FT*, 29 October 2014, p. 2.

The Commission postponed the deadline of submissions of their revised 2015 budget plans three months to March 2015. Rather than imposing sanctions, the Commission asked them to come up with credible revised plans to meet the deficit limit by 2017.

In renegotiation over how to meet the deficit target (“the fixed price”), the Commission linked, in a quid pro quo way, the EU investment plan with euro member states’ efforts for deficits reduction.

At $t=4$, late November 2014, in fact, Junker announced a €315bn, less than 0.8 per cent of EU domestic product, investment plan in infrastructure to stimulate growth in EU over the period 2015 to 2017.³⁶⁾ He set “broadband or cross-border energy linkages” as “priority categories” of investment.³⁷⁾

VII Renegotiation

1 Case of the Bad State

How can payoffs be divided between a principal and an agent? It is done through the NBS as shown in Figure 3 below.³⁸⁾ In the NBS, if bargaining powers are supposed to be equal, surplus is divided equally between the agent and the principal.

Figure 3 illustrates bargaining between a part-supplier as the agent and a car-assembler as the principal. U_A is utility for the agent. U_P is utility for

36) Peter Spiegel, “Brussels weighs options to build investment fund,” *the FT*, 17 November 2014, p. 3.

37) Saram Gordon, “Industrialists query strategy behind Junker investment plan,” *the FT*, 5 December 2014, p. 2.

38) Suzuki, *ibid.*, p. 326.

the principal.

0 is the disagreement point. (In this case, however, the disagreement point is Q . If their bargaining breaks down, the agent gets Q and the principal gets 0. Since the agent develops Q with his own ex ante investment and Q belongs to the agent as his private property, the disagreement point for the agent is Q . The agent keeps Q in his hands even if the principal defaults on the initial contract.)

The area covered by the three points of $Q + S$ on the vertical axis, $Q + S$ on the horizontal axis and 0 is the feasible set within which agreements are feasible. The line $Q + S$ and $Q + S$ is the Pareto frontier.

Here their bargaining powers are supposed to be equal. When the state realized is Q , shown on the horizontal axis, surplus S which the team development program produces is divided by half. Where the dotted 45-degree line from Q on the horizontal axis hits the Pareto frontier is the point at which surplus is divided. Surplus is thus divided equally, $1/2S$ each.

The point where the dotted vertical line from the dividing point on the Pareto frontier hits the horizontal line U_A is $Q + 1/2S$. There, the part-supplier has both Q and $1/2S$.

Since the output Q is the product which the agent develops through his own ex ante relation-specific investment, Q belongs to the part-supplier as his private property. It can be transferred to the car-assembler at the fixed price if its quality, Q , is in the Good State. The part-supplier thus has $Q + 1/2S$.

On the other hand, the point where the dotted horizontal line from the dividing point on the Pareto frontier hits the vertical line U_p is the surplus the principal receives. It is $1/2S$. Both thus divide the surplus equally.

After the contract at $t=1$, the agent will make ex ante investment. At

Source: Yutaka Suzuki, "Towards building a theory on 'commitment, renegotiations and incomplete contract theory'," *Keizai Shirin* (The Hosei University Economic Review), Vol. 66, No. 1 (July 1998), Figure 2(1), p. 322.

The contract game in Figure 3 starts at $t=1$ when the principal and the agent first agree on an ex ante price or the fixed price, P_0 , for an outcome Q .

Q is the product's quality level the agent produces with relation-specific technology investment at $t=1$.

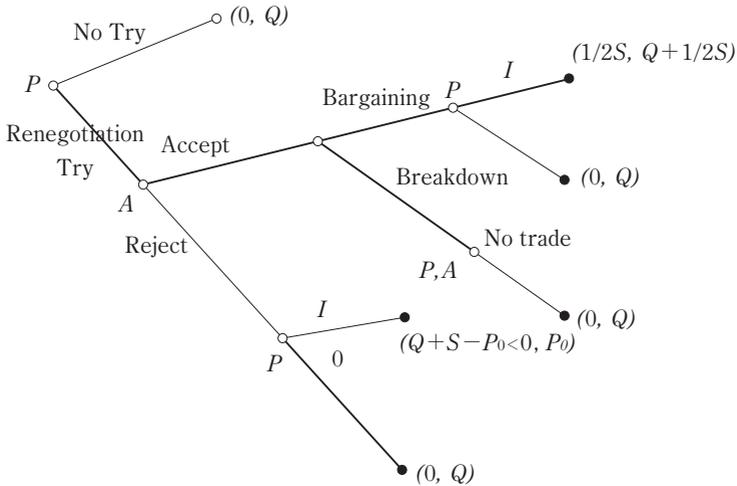
At $t=2$, the output Q is realized with uncertain probability from ex ante investment by the agent.

As Figure 3 shows, $Q + S$ are short of P_0 . This is the case of the Bad State. The principal sees no benefit in making its part of the investment for the team production.⁴¹⁾

41) Suzuki, *ibid.*, p. 322.

2 Application to the Commission – France fiscal governance game

Figure 4: Renegotiation



I represents investment.

Source: Yutaka Suzuki, “Towards building a theory on ‘commitment, renegotiations and incomplete contract,’” *Keizai Shirin* (The Hosei University Economics Review), Vol.66, No.1 (July 1998), Figure 3(1) “ $i=0$ (No trade) is a case of credible threat: $Q + S < P_0$,” p. 326

In Figure 4, the state realized at $t=2$ is $Q + S < P_0$. The principal proposes renegotiation to the agent. The principal threatens the agent by asking whether he accepts his renegotiation proposal or faces default on the initial contract. This threat is credible⁴²⁾ because, backwardly inducing, if the principal terminates the transaction at $t=3$, the principal receives 0 and

42) Suzuki, *ibid.*, p. 325.

the agent receives Q ($0, Q$). However, if the agent accepts a renegotiation proposal, the principal gains $1/2S$ and the agent gains $Q + 1/2S$. By accepting the renegotiation proposal, the agent can sell its product Q at a new price $P^*(Q)$ and obtains half the surplus, $1/2S$. The agent thus gains the payoff of $Q + 1/2S$, which is larger than Q , which the agent receives when the transaction is terminated. Thus, the agent accepts the renegotiation proposal.

On the other hand, the principal also receives a larger payoff by renegotiating and purchasing the product at a new price $P^*(Q)$. It is $1/2S$. If he defaults on the initial contract or terminates transaction, he receives 0. He also would do better to renegotiate the contract.⁴³⁾

Thus, the principal proposes renegotiation and the agent accepts it. Their payoffs combination is $(1/2S, Q + 1/2S)$. This stabilizes as an equilibrium. Thus, the principal's renegotiation proposal is renegotiation-proof.

The concept of renegotiation-proof is that if players "value the future enough, any feasible and individually rational payoff in the one-shot game can be achieved as the average payoff in an equilibrium of the corresponding repeated game" and that "[i]t is implemented by designing a set of strategies that deter any player from deviating by credibly threatening to 'punish' any deviations." By setting up renegotiation-proof, the " 'cooperative' " outcomes can be obtained.⁴⁴⁾ The surplus that the agent gains, when it faithfully implements a contract in the first round of play, is the same surplus which it obtains in the second round of play in renegotiation. The agent cannot improve his payoff by deviating from the

43) Suzuki, *ibid.*, pp. 324-327.

44) Jean-Pierre Benoit and Vijay Krishna, "Renegotiation in Finitely Repeated Games," *Econometrica*, Volo. 61, No. 2 (March, 1993), p. 303.

equilibrium in the game.

3 Renegotiation and a new price in the Commission-France relationship

French concessions:

The Commission thinks that France is holding up surplus in a “team production” of stabilizing the common currency by exceeding the deficit limit.

Any excessive French deficit beyond 3 per cent of GDP will likely have a depreciating impact upon the euro. The weaker euro works as negative externalities to other eurozone states. France is exploiting or holding up other eurozone states.⁴⁵⁾

France’s government expenditures amounted to 57 per cent of GDP in 2014. A quarter was spent on pensions. It had been spending on pension beyond its means at the expense of other eurozone states. The Commission singled out pension overhaul as “urgent” for deficit reduction.⁴⁶⁾ The pension spending was reduced to 55 per cent of GDP in the 2015 budget plan but demands were made to cut it further.⁴⁷⁾

What was the new price $P^*(Q)$ that both the Commission and France had agreed upon in renegotiation in October and November 2014? (As a matter of fact, renegotiation was scheduled to be finalized in March 2015 upon the latest economic data being made available.) In an attempt to persuade the Commission to accept another two-year extension of the target year to

45) About the usage of the concept of “hold up” in this sense, see Suzuki, *ibid.*, p. 324.

46) Hugh Carnegy, “Pensions will test Hollande’s appetite to rein in deficit,” *the FT*, 14 June 2013, p. 4.

47) Hugh Carnegy, “France urges Europe to ease deficit cuts,” 6 October 2014, p. 6.

2017, France had taken or had been forced to take the following three measures.

First, in the Responsibility Pact in January 2014, France set out the plan to make a €40bn corporate tax break and a €50bn expenditure reduction over three years.

Second, in November 2014, reviewing France's budget plan for 2015, the Commission demanded that France cut its structural deficit by 0.8 per cent, while France "proposed a 0.2 per cent reduction." France accepted a 0.5 per cent point cut. EU officials were told that cutting it by 0.5 per cent would make it necessary for the Commission to persuade other eurozone states, "implying Germany among all."⁴⁸⁾

Though the Commission gave an interim pass to the French budget plan in late November 2014, Jean-Claude Juncker demanded that France had to come up with, in the three months till March 2015, "not only promises but a clear calendar, with clear indications when national cabinets will adopt reforms, when national parliaments are supposed to do reforms."⁴⁹⁾

If France's budget plan had been rejected in the review, it would have been sent back to the French parliament for revisions. This would have been taken as interference by the Commission in the internal domestic budgetary process. If any revisions had been made to them, the French parliament would have vehemently opposed them before adopting the plan. Juncker therefore preferred voluntary reforms by France.⁵⁰⁾

48) Peter Spiegel and James Politi, "Paris faces EU showdown in budget row," *the FT*, 27 October 2014, p. 2.

49) Peter Spiegel, "Juncker admits regrets over tax laws that led to under-fire corporate deals," *the FT*, 28 November 2014, p. 1 and p. 3.

50) Juncker said: "Countries don't like this lecturing from Brussels," "So now they are proposing themselves what they intend to do, and that's, I do think, a more respectful way to deal with countries and to deal with national parliaments." Spiegel, "Juncker admits regrets over tax laws that led to under-fire corporate deals," *ibid.*, p. 3.

Third, France promised to deregulate the notary and pharmacist professions and liberalize the labor markets. These labor reforms were expected to bring up mid-term economic growth by about 5 per cent. However, they were politically very costly, facing hard opposition from those whose interests were threatened.

In addition, the new fiscal compact with semi-automatic sanctions signed in March 2012 is scheduled to converge into the EU law in 2017. Its present status as intergovernmental treaties might limit the Commission's powers to impose sanctions. Under its current form of intergovernmental treaties, the Commission must secure agreements from the signatory states, especially Germany, before granting another extension of the target year for France.⁵¹⁾

With the scheduled convergence, however, imposing sanctions will become more realistic. Even under the strengthened EU fiscal rules, the Commission's powers have been made much powerful. In giving France's and Italy's budget plans passing grades in late November 2014, Juncker said, "I made the choice not to sanction, because that would have been easy: you have rules, apply the rules, sanctions, penalties, fines. I made another choice."⁵²⁾ With the new fiscal compact converging into the EU law, EU fiscal governance shifts more towards rules rather than discretion.⁵³⁾

In late February 2015, the Commission decided to give France another two-year extension to 2017 to meet the 3 per cent deficit limit. It was originally supposed to have been met in 2015. The conditions attached were

51) This is this author's interpretation. Though *the FT* reports that the Commission needs to clear opposition from Germany, its report does not explain the reason for this.

52) Spiegel, "Juncker admits regrets over tax laws that led to under-fire corporate deals," *ibid.*

53) With respect to rules versus discretion, see Bolton and Dewatripont, *op. cit.*, p. 489.

(1) “to lower its structural deficit, its budget shortfall, from which cyclical effects are stripped out, by 0.2 per cent of GDP by later (2015)” and (2) to implement the structural reforms essential for future growth.⁵⁴⁾

Prior to the Commission’s decision, France passed, on February 17, 2015, a reform package bill by resorting to an emergency decree, bypassing the “reluctant” parliament.⁵⁵⁾ These reforms were what “the European partners” had been demanding as “the price” for another two-year extension in meeting the deficit target.⁵⁶⁾ They were pro-business reforms including “a wide range of deregulation packages.”⁵⁷⁾ Prior to this, in November 2014, Junker demanded as the condition for another extension of the target year that France had to come up with credible and concrete plan to meet the deficit target. If France had been judged as taking “no effective action,” it would then have unleashed the sanctions proceedings against France.⁵⁸⁾

Predicting a probable imposition of sanctions in 2017, France was expected to bring the deficit below 3 per cent of GDP by that time. Thus, at least theoretically, a kind of team project for bringing France’s budget deficit below 3 per cent of GDP was expected to materialize in 2017, (though in fact, to the contrary, it once again failed to do so).

The European Commission’s investment:

54) Alex Barker and Anne-Sylvaine Chassany, “France and Italy granted reprieve for breaching budget limits,” *the FT*, 26 February 2015, p. 2.

55) Editorial, “France forces through economic reforms,” *the FT*, 19 February 2015, p. 8.

56) Anne-Sylvaine Chassany, “Hollande takes emergency measures to pass reforms,” *the FT*, 18 February 2015, p. 1.

57) Editorial, “France forces through economic reforms,” *op. cit.*,

58) In October 2014, the Commission had moved closer to imposing sanctions against France. These were the sanctions proceedings the Commission had prepared, though they were not actually triggered. Peter Spiegel, “Rehn slams successors for failing to punish Paris over repeatedly missing deficit targets,” *the FT*, 9 March 2015, p. 4.

The Commission had been criticized for being too lenient on eurozone states breaching the fiscal rules. Angela Merkel and Alex Stubb, the then new Finnish prime minister, had been two advocates among eurozone states for a tougher line on this. However, even they accepted in June 2014 that the Commission would exercise “the existing flexibility within the rules” for deficit states so that they would be given “some room” to relieve their cost for structural reform.⁵⁹⁾

In late August 2014, Holland made a proposal for a special eurozone growth summit at which the EU should address measures to stimulate growth while slowing down the tempo for deficit reduction.⁶⁰⁾

Juncker put forth in late November 2014 €315bn of the European Fund for Strategic Investment. Out of the €21bn seed fund, €16bn comes from the EU budget and €5bn comes from the European Investment Bank (EIB). This €21bn works as “partial risk protection.” Based upon this, the Commission raised €60bn. This €60bn will be invested in the €315bn of projects.⁶¹⁾

4 Payoff realization

As Figure 4 shows, for the Commission the payoff is $1/2S$. It will be to bring France’s deficit below 3 per cent of GDP and will restore the credibility of the EU fiscal rules. $1/2S$ means for the Commission that it can receive back the surplus which France has been holding up in the form of excessive deficit over 3 per cent of GDP, and which should belong to the

59) Peter Spiegel, “Debate on eurozone’s budget rules to test commitment to punish offenders,” *the FT*, 29 August 2014, p. 2.

60) Hugh Carnegy, “Hollande presses for growth summit,” *the FT*, 29 August 2014, p. 2.

61) Peter Spiegel, “Juncker aims to prod reluctant investors,” *the FT*, November 26, 2014 p. 3.

eurozone community. In doing so, the Commission forces France into not only cutting structural deficit but also liberalizing its labor markets. Through this, it can put France, back onto a mid-term growth track.

For France, the payoff is $Q + 1/2S$. Q means for France that by bringing its deficit below 3 per cent of GDP, it can avoid being fined and maintain budgetary sovereignty. It will be able to set itself free from the Commission's demands for fiscal policy and structural reforms and any further fiscal policy interference.

For France, $1/2S$ means that it must hand over half of any surplus it had been holding up in the form of excessive deficit over 3 per cent of GDP, violating the EU fiscal rules.

VIII Assessment

(1) As shown above, the incomplete contract approach to the eurozone fiscal governance makes it possible to analyze the situation as one coherent whole process of eurozone fiscal governance from an initial contract, state's realization, renegotiations and setting a new contract, and payoff realization and its division.

(2) The incomplete contract approach enables us to see that France is in fact holding up surplus which should belong to the eurozone by exceeding the deficit limit of 3 per cent of GDP.

(3) Suzuki's model illustrates how the flexible sanctioning in proportion to sizes of deficit is prerequisite to the credibility of the EU fiscal rules. As long as the Commission takes a dichotomous approach to either sanctioning or not, minor violations, or even any serious violations short of repeated serious ones, are free-ridden. Then, even really serious ones also become free-ridden. Maintaining budgetary sovereignty does not become the

privilege which might be realistically threatened, if eurozone states fail to comply with the EU fiscal rules.

(4) Though this sounds inconsistent with (3), Suzuki's model also explains why the Commission renegotiates with France rather than terminating transactions by imposing sanctions. Renegotiations enable parties to a contract to undo ex post inefficiency.

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