Public Governance of Central Banks:  
An Approach from New Institutional Economics*

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Abstract

The governance structure of central banks has two aspects: corporate governance and public governance. The latter is an institutional framework whereby the general public governs a central bank by and through the legislative and executive bodies in a country. New institutional economics sheds new light on the public governance of central banks. First, we apply Williamson's theory of “governance as integrity” (probity)\(^1\) to the internal management of central banks and Moe's theory of “public bureaucracy” to central bank independence. Second, we apply agency theory to the issues associated with central bank independence and accountability. Third, we apply public choice theory to central bank independence.

Keywords: Central bank, Public Governance, Transaction Cost Economics, Public Choice.

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\(^1\) Williamson (1999) used “governance as integrity” but, considering the content of this paper, ‘governance as probity’ (used frequently hereafter) seems more appropriate.
Introduction

The governance structure of central banks has two aspects: corporate governance and public governance. This paper analyzes the latter in depth using theoretical frameworks available in new institutional economics. In this paper, “public governance” (a term now widely used in the literature on public organization) is understood to be an institutional framework, where the general public governs the central bank by and through the legislative and executive bodies in a country.

The central bank, being an organization with a public mandate, belongs to the government in a broad sense, as do the legislative, executive, and judicial branches. It acts in interplay with such other governmental bodies within a country’s governance structure. The relationship between a central bank and the legislative and executive branches has long been an issue for lively debate in terms of central bank independence and accountability. An argument goes that a central bank needs independence but should be subject to public governance in a representative democracy since it is an organization with a public mandate. Debate has centered on the desirable relationship among the central bank, the legislature/politicians, and the executive branch (the cabinet/president) and ministries, and how to strike a right balance between independence and accountability in order to ensure the best performance of the functions of a central bank.

This paper emphasizes the nature of these issues as being related to the public governance of a central bank. It attempts to analyze them from a new perspective, using the relevant theories on governance, which have seen significant development and application in the past few decades: transaction cost economics, agency theory, and public choice theory. These theories have several common features: they broadly come under the new institutional economics umbrella, which extends economic analysis to the understanding of the various institutions in the economy and society; they are based on rational choice by economic agents which maximize self-interest; they have voters, elected representatives, and bureaucrats at the center of their analytical models, along with other typical economic agents; their interest is in positive, empirical questions to understand how things work rather than normative questions as to

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2 eg, Bevir(2007).
how they should be.

Section 1 analyzes two theories both based on transaction cost economics: Williamson’s theory of “governance as probity” and Moe’s theory that scrutinizes the nature of autonomy in public bureaucracy. In order to explain the rationale for public organizations, Williamson’s theory proposes “governance as probity,” a new category of governance structure in addition to the three in his earlier work: markets, hierarchies, and hybrids. This paper first explains his theory, then applies it to the governance issues associated with central banking and attempts to give a clear answer to the question why a central bank needs to be a public organization similar to other government organizations where profit and efficiency maximization are not their objectives. By doing so, this paper goes beyond the typical issues on public governance in a narrow sense, such as the relationship between a central bank and the legislative and executive branches. That is, it examines the internal organizational structure of a central bank from the public governance perspective. In particular, it shows that it is problematic for a central bank to mainly pursue cost efficiency in spite of its role as a public organization that should try to ensure probity.

Williamson describes foreign affairs as “sovereign transactions” and considers what governance structure would be needed to deal with the special aspects attaching to such transactions. This paper considers central banking as a sovereign transaction, and argues that central banking needs “governance as probity” in order to avoid “probity hazard”, as Williamson argues the same in terms of foreign affairs. “Governance as probity” can be characterized by four main features: very low-powered incentives, career staff with employment security, extensive administrative controls, and appointment of the leadership of the agency by the president. These can most likely be achieved by a public organization rather than a private one, although a public organization solution may come at the cost of inefficiency.

Moe’s theory of public bureaucracy extends transaction cost economics to analysis of the political process. Based on his theory, this paper tries to ascertain whether central bank independence from politics is justified not only on the grounds of better central banking but on that of a better political process.

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3 Oritani (1996) explained the rationale of a central bank applying transaction cost economics.
Moe’s theory argues that political parties and politicians in an “uncertain” political situation, where changes in majority control can and do occur, may want to install autonomy (i.e., independence) at the central bank in order to minimize the cost of policy swings at the central bank as the majority party changes. According to his theory, it can be argued that, in Japan, where changes in the majority are very rare, the political tendency to reinforce central bank independence may not be as strong as elsewhere where a change in majority is not a rare event.

Section 2 applies agency theory to the issues associated with public governance of a central bank, mainly the ones related to central bank independence and accountability. With regard to central bank independence, the paper examines why some theories, based on the congressional dominance hypothesis, argue that central banks are strongly influenced by the legislature/politicians or the executive branch in spite of the important characteristic of a central bank which is similar to that of an independent agency in the government.

The paper emphasizes a central bank’s multiple principal–agent relationships (vis-à-vis both the heads of the executive and legislative branches). While this can cause inefficiency within a central bank, the paper shows that it may be instrumental in preventing central bank policies from becoming biased. The paper also introduces an interesting legal discussion in Japan, which occurred when the Bank of Japan Act was amended, whose major issue was whether it was constitutional that the Bank of Japan conducted some functions that could be conceived as an exercise of executive power.

Section 2 also examines, based on the compound board system theory of Fama and Jensen, whether or not such a system is a more effective way of governance to ensure central bank independence than a single board system. Fama and Jensen’s theory considers a compound board system at private corporations as a mechanism for shareholders to cope with agency problems arising from the separation between ownership and management. Based on this idea, the paper shows that a compound board system may be beneficial in that it can ensure independence by allowing the government to appoint only upper board members.

With regard to central bank accountability, the paper analyzes what aspects are important for central banks, based on the work of Jackson, which regards
accountability as a principal's tool for monitoring its agent in a principal–agent setting. According to Jackson’s theory, the paper distinguishes several types of accountability: political, legal, financial, and efficiency. The paper argues that efficiency accountability is not important for a central bank because of the significant difficulties in measuring such efficiency, or more fundamentally, in defining it.

Section 3 revisits the fundamental question of why a central bank needs to be independent from the legislative and executive branches in a representative democracy from the perspective of public choice theory. Benefiting from studies that critically scrutinize majority rule in the decision-making process in a representative democracy, it shows that the public interest is not always correctly represented and conveyed to the central bank. It reviews the literature that in such circumstances a central bank finds itself susceptible to political pressure from politicians maximizing votes and seeking short-term gains and that it is thus necessary to ensure central bank independence to guard against such pressure.

1. Application of Transaction Cost Economics

This section applies transaction cost economics to the public governance issue of a central bank. First, Williamson’s “governance as probity” hypothesis is applied to central banks and clarifies why they should be considered public organizations similar to bureaucratic organizations that do not pursue profit or efficiency maximization. The reason is to secure “probity”, which is an essential feature in conducting central bank transactions. Also, the rationale of central bank organization is examined from the perspective of its intrinsic objective of securing such probity. Next, Boylan’s theory that central bank independence is necessary to minimize the cost of policy swings based on Moe’s autonomy of bureaucracy hypothesis is introduced.

1.1 Application of Williamson’s “governance as probity” hypothesis

Williamson (1999) directly applied transaction cost economics to public sector transactions and proposed a new category of governance structure, “governance as probity,” in addition to the original three categories (market,

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4 For an introduction to transaction cost economics, see Brousseau and Glachant (2008).
This new governance structure minimizes probity hazard, one of the transaction costs in public sector transactions that Williamson considers the most important, and it is held that such governance structure can be realized in public agents but not in private organizations. After explaining Williamson’s “governance as probity” theory, public governance of a central bank is examined by applying the above theory.

1.1.1 Importance of probity in sovereign transactions

According to Williamson, public agents constitute a “puzzle” for economics since they continue to exist despite being regarded as “a haven for inefficiency”. Therefore, he believes it necessary to look into “public sector transactions” based on the fundamental question of why private organizations cannot substitute for public agents.

Williamson first divides public sector transactions into six: procurement, redistributational, regulatory, sovereign, judicial, and infrastructure. And, focusing on “sovereign transactions”, an extreme case among the six and undoubtedly considered to be conducted by the public sector, their characteristics and governance are examined. “Examples of sovereign tasks include foreign affairs, the military, foreign intelligence, managing money supply, and, possibly, the judiciary” but Williamson mainly analyzes foreign affairs.

Next, in line with the analytical procedure of transaction cost economics, the transaction cost of public sector transactions, especially sovereign transactions, is analyzed. Such transaction costs are essentially “contractual hazards.” Having pointed out “asset specificity” and “probity hazard” as two important contractual hazards in sovereign transactions, Williamson regards probity hazard to be more important. That is, looking at “asset specificity”, while physical assets are negligible since they are hardly used in sovereign transactions, human assets that underwent non-transferable training are necessary. In this regard, contractual hazards based on human asset specificity, specifically the “hold-up problem”, cannot be neglected. Nevertheless, while the hold-up problem occurs not in sovereign transactions alone, “what really distinguishes the foreign affairs transaction, however, is the hazard of probity” (Williamson, 1999), and so the latter is examined in more

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5 Refer to Klein (2008) for details of the hold-up problem.
depth. It should be noted that the “hazard of operating cost excesses” that poses a serious threat in private sector transactions is not considered a big issue.

According to Williamson, “probity” is the same as “loyalty and rectitude” or “high standard of integrity” with which a foreign affairs transaction is discharged\(^6\). Also, he considers that probity means honesty that has a much deeper relation with trustworthiness, and that if a person has probity, others will trust his words and have faith in his judgment. Moreover, “professional excellence” given to the organization and “fidelity to self-defining principles” are also considered to be included in probity. Williamson explains that transactions that require probity are extremely long term, self-renewing and ongoing, and necessitate “needs for loyalty to leadership and to the mission” and “process integrity.”

With these definitions as a premise, the probity of foreign affairs transactions is shown to consist of three aspects as shown in Chart 1: vertical, horizontal, and internal. Probity under each aspect and probity hazard that may arise are explained as follows.

First, “the vertical aspect” of probity concerns the relations between the foreign affairs agency and the president, who is primarily responsible for the administration of foreign affairs. Williamson points out that probity is involved when considering responses to the following questions: “Does the president have confidence in the information and assessments that are provided by the foreign affairs agency?” “Does the agency comply with directives in a timely and efficacious way?” “Is the agency sufficiently responsive to the president?” \(^7\) “Is the agency perceived to be adventurous?” “Does the agency have an abiding respect for the mission?” Therefore, probity hazard here is the risk of breaking such relationships between the president and the agency.

Second, the “horizontal aspect” with regard to the probity of the foreign affairs

\(^6\) According to *Merriam Webster Third New International Dictionary*, probity is defined as honest, upright, virtuous; uncompromising adherence to the highest principles and ideals; unimpeachable integrity.

\(^7\) “Responsiveness” is a concept used in the theory of public administration to show how swiftly and wholeheartedly bureaucrats respond to requests from the public and politicians. It is considered to be in a trade-off relationship with the concept of “neutrality” which shows to what extent bureaucrats give neutral suggestions and analysis without having to fawn on politicians.
agency concerns the relationship with “counterpart agency” which is the foreign affairs agency of a country with which it negotiates. Probity in this respect includes “accurate communication” and “authority” although the former may intentionally be made vague in some cases. Should counterpart agencies perceive that the agency lacks authority, probity hazard arises, thereby hampering effective negotiation. The reason why such probity hazard arises stems from two aspects: probity hazard in relation to the president and that in relation to the internal organization.

Third, probity of the internal organization refers to the integrity of officers and staff of the foreign affairs agency which encompasses a broad concept including professional ability and process integrity. Probity hazard in this regard is considered to cause probity hazard in both vertical and horizontal aspects.

1.1.2 Governance of sovereign transactions

Williamson thinks public agents have a more “adequate” governance structure than private organizations in maintaining the necessary probity for sovereign transactions and minimizing transaction costs (ie, probity hazard). “Adequate” is not in the sense of minimizing financial costs, of course, but whether a transaction’s objective could be achieved or not.

Four attributes of “governance as probity”

Based on practical analysis of the US Department of State, the public agent that actually conducts foreign affairs in the US, Williamson points out the four
attributes of a governance structure that are essential for maintaining probity and adequately countering probity hazards:

a) Very low-powered incentives  
b) Career staff with employment security  
c) Extensive administrative controls and procedures  
d) Appointment and termination of agency executives by the president and legislature.

Williamson calls a governance structure with the above attributes “governance as probity.” Such a governance structure is suited for minimizing the transaction costs of transactions that require probity on the part of officers and staff. Having said this, Williamson considers that public agents are best suited for realizing such governance. Inappropriate as it may seem in light of efficiency, it is difficult for private organizations to realize the above governance structure. In summary, public agents are considered the “best feasible governance response” against probity hazards affecting sovereign transactions.

Since these attributes are correlated with one another, Williamson does not explain them separately but his explanation is summarized as follows.

a) Very low-powered incentives

The first attribute of a governance structure that prevents probity hazard is that the organization’s incentive scheme should be “low-powered” and would not introduce any high-powered incentive scheme whose objective is to maximize profit and efficiency. Specifically, (a) “Lest pressure to realize operating cost savings arises at the systems level, unexpected budgets will not accrue to the agency but will be returned to the central treasury”, (b) “payments contingent on realized cost savings will not be made to individuals who discover and implement cost savings; neither will such savings be used to improve on-the-job consumption of amenities”, (c) “compensation in such an agency will be flat and also resource deployment will be restricted”, and (d) the organization “has little

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8 Moe (1990) introduced the concept of “inefficiency by design” whereby public agent inefficiency was deliberately intended by parliament and voters as a means to counter political uncertainty. Moe explains that if a public agent is efficient, unwanted policy may then be efficiently carried out with a change in political power. Therefore, by intentionally introducing complex administrative procedures, public agents are made inefficient.
risk of bankruptcy and has a reliable budgetary base in the face of economic adversity."

This is due to the fact that a high-powered incentive scheme is considered to undermine probity of the overall organization. That is, should high-powered incentives be adopted, the possibility of probity hazard increases and places the organization at risk. Nevertheless, since such probity hazard cannot be prevented by imposing a penalty, it is necessary to introduce a low-powered incentive scheme. And, by making the incentive scheme low-powered, “adventurousness” and “unwanted enterprise” can be restrained.

Such a low-powered incentive scheme is considered an attribute for a governance structure that is necessary to secure employment security and to prevent probity hazard at a public agent.

b) Career staff with employment security

The second attribute is governance that could realize generous personnel management such as offering employment security. This would nurture “career staff” within the organization and strengthen loyalty towards the organization and “vocational commitment”; at the same time such governance is expected to prevent staff from becoming reluctant to specialize.

Based on employment security, strong value is placed on “skills in negotiation, cultural sophistication and good manners”, and deep knowledge and “integrity to the mission” is similarly highly evaluated within an organization. Additionally, “Caution, an aversion to bold language or action, a desire for consensus”, the importance of accuracy prevailing throughout the organization, “seniors should be consulted (vertical coordination)” when responding to non-routine events, and any discontent expressed via “administrative due process” are also vitally important traits. In order to promote staff specialization, “specialized training will be used to inculcate the distinctive values and practices of the foreign affairs organization”.

As a result, staff are bestowed with high “social conditioning” and career staff participate in foreign affairs on a long-term basis. Although doors are open to outside employment, career staff mostly look inward for “career moves” and a “specialized internal labor market” develops within the organization. Therefore,
it is highly likely that career staff are promoted to foreign affairs leadership.

c) Extensive administrative controls and procedures

When employment is secured under the above low-powered incentive scheme, it may induce some staff to “shirk”, causing the organization to be inefficient. Therefore, governance to limit “egregious shirking” through detailed administrative controls such as “bureaucratic rules, regulations, and standard operating procedures” becomes the third attribute. While admitting its effect against shirking, Williamson states that “the main purpose of administrative controls is to promote probity.”

Examples given of such administrative controls are “respect for protocol”, stipulated obligation, “jurisdictional ordering by official rules and regulations”, and clearly established “hierarchical authority.” Moreover, in light of due respect for probity, even the slightest breach of secrecy will be treated as an inexcusable breach of contract.

d) Appointment and termination of agency officials by president and legislature

Fourth, governance where an agency chief is appointed by the president and approved by the legislature is necessary. This is necessary for the foreign affairs agency to gain confidence from both domestic and overseas parties. The foreign affairs organization must exhibit adequate “responsiveness” to the president, and, on the other hand, authority given by the president will enhance probity when negotiating with counterpart agencies.

Also, Williamson considers that governance where presidential appointments need to be approved by the legislature is good. That is, in a division of powers system, the agency chief’s probity towards mission can be strengthened through the hearings and approval process of the legislature. And, through such a process, the president will have a stronger incentive to choose a candidate who inspires confidence as against his personal likes and dislikes. In other words, should the president try to appoint someone who lacks probity, the legislature could raise the issue during the approval process. Williamson also points out that, “since the legislature can reach an understanding with the agency chief as to his policy and plans through the process, deviations from the expressed policy and plans can be made the subject of hearings.”
However, agency executives should not always be passive vis-à-vis the president and the legislature, but need to collide with short-term political interests in order to protect probity towards the mission. And, since a trade-off exists between short-term political interests and the long-term interests of the state, Williamson suggests that “mission safeguards” should be introduced when designing governance structure.

1.1.3 Replication by a private organization

A. Private organization and four attributes of governance

An organization incorporating the above governance structure is of course considered to be a public organization, but Williamson intentionally raises the question, can a private organization replicate such governance? By proving that it cannot, Williamson emphasizes the importance of probity of the public organization.

Williamson says that if a private organization took on responsibility for foreign affairs, it would end in failure. Since a private organization attaches greater importance to cost control, probity would be sacrificed, career staff would lose employment security, social conditioning would diminish, and commitment to the mission undermined. A strong incentive scheme is one of the main features of a private organization, but this will loosen administrative controls, weaken responsiveness of the agency to the president, and erode employment security of career staff. That is, when a private organization takes responsibility for foreign affairs, trade-offs exist between foreign policy efficacy and net receipts. Against such a background, to safeguard the interests of the state, the state would not fully delegate a private organization with authority concerning foreign affairs. As a result, counterpart agents in other nation states would not regard the private organization as the clear representative of the state and would frequently request review, change, or complete renegotiation.

Detailed reasons for reaching the above conclusion are respectively given for

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Moreover, Williamson discussed governance structure where a “regulatory agency” that is neither a public agent nor a private organization assigns foreign affairs to a private organization and supervises the organization, and reached the conclusion that a public agent was the most appropriate for sovereign tasks.
the aforementioned four attributes of governance.

a) Very low-powered incentive scheme

Assume that a private organization is given a budget as well as personnel such as officials and staff by the government. Could this organization appropriate the net receipts in cost savings and at the same time maintain probity such as ensure adequate responsiveness to the president and restrain adventurousness under a low-powered incentive scheme? This is impossible. As described above, the realization of very low-powered incentives in a public agency is in part accomplished by returning cost savings, if any, to the treasury. However, such a requirement is inimical and antithetical to privatization.

b) Career staff with employment security

Providing career staff of a private firm with a substantial degree of employment security and providing considerable training and social conditioning does not solve the problem raised in a) above. This is because “identical procedures, rules and regulations, and the like do not ensure that public and private bureaucracies will be operated identically if the purposes to be served differ. Except as assignments and promotions are fully constrained by objective indicia (eg, by seniority)”, the organization will place due importance on net receipts.

c) Extensive administrative controls and management

A private organization will regard the same level of detailed procedures, rules, and regulations to be unnecessary. Suppose the government entrusts foreign affairs to a private organization and makes a contract including rules and regulations. Since the government loses direct experience with foreign affairs transactions, it will not be able to understand why such rules and regulations are necessary, and, as such, will not be able to impose any rules and regulations.

d) Appointment and termination of agency executives by the president and legislature

Should a private organization take on responsibility for foreign affairs transactions, its board of directors would naturally intervene in the appointment of officials responsible for foreign affairs since they are also officials of the
organization. In this respect, it is highly likely that a conflict of views arises between the private organization and politics (president and legislature). Therefore, a private organization cannot fulfill the governance attribute of appointment of agency officials by the president and legislature.

B. Incomplete contract and adaptive coordination

Williamson believes that an “incomplete contract” lies behind the above issue. That is, a contract to entrust foreign affairs transactions to a private organization cannot be very incomplete. There are problems such as how a private firm could reconcile the contract to shoulder responsibility for foreign affairs when an unanticipated event occurs, how a competitive bid should be carried out, etc. It would be very difficult, if not impossible, to write a contract that specified in advance what the firm should do in each case, since neither governments nor private organizations can accurately forecast what might happen in the future.

As such, Williamson believes that “adaptive coordination” (adaptive and sequential decision making) is the only feasible way to counter contingent events not covered in a contract and with which to play a negotiation game rich in countermove strategies. Having said this, Williamson states that since his theory of adaptive coordination places importance on probity during the “adaptive process”, it differs from the theory of Hart, Schleifer, and Vishny (1997) that emphasizes human asset specificity. Hart and others consider that even if renegotiation of a contract is effected between a government and private organization for adaptive coordination, due to human asset specificity, the hold-up problem will arise, and as such there are transactions that cannot be entrusted to private organizations. While Williamson admits that the hold-up problem is one of the reasons that some transactions cannot be entrusted to the private sector, it is only part of the adaptive process, and considers that probity hazards that affect the overall adaptive process pose a more significant issue.10

1.1.4 Application to central bank governance

10 According to Williamson, “Adaptation entails eight steps: 1) the occasion to adapt needs to be disclosed, after which 2) alternative adaptations are identified, 3) the ramifications of each are worked out, 4) the best adaptation is decided, 5) the chosen adaptation is communicated and accepted by the agency, 6) the adaptation is implemented, 7) follow-up assessments are made, and 8) adaptive, sequential adjustments are made thereafter”, and Williamson criticizes that of these eight steps, Hart, Schleifer, and Vishny (1997) considers only steps 1, 4, and 5.
To apply Williamson’s theory to central banks seems appropriate considering that Williamson himself considered the management of money supply as an example of a sovereign transaction. However, since Williamson mainly focused his discussion on foreign affairs transactions, this paper will replace foreign affairs transactions with services provided by central banks or transactions made by central banks (hereafter ‘central bank transactions’) and discuss what conclusion could be obtained.

A. Features of central bank transactions

In order to consider the necessary probity for central bank transactions and probity hazards that may arise, the features of central bank transactions need to be examined. Though features of central bank transactions have been discussed in Oritani (2004) by differentiating public sector goods and club goods, this paper will reinvestigate them in line with Williamson’s aforementioned types of public sector transactions11.

Central bank transactions are similar to foreign affairs transactions in that they are made not in pursuit of private profit, but for the benefit of the overall country. However, while foreign affairs transactions are limited to sovereign transactions, central bank transactions involve not only sovereign transactions (management of money supply) but also transactions providing infrastructure. The central bank provides three types of services: 1) management of money supply (monetary policy, monetary operations), 2) payment and settlement services, and 3) maintenance of financial system stability.

First, it seems appropriate to classify the management of money supply under sovereign transactions as suggested by Williamson. However, monetary policy is normally, in advanced countries, conducted through monetary operations. And, monetary operations are carried out as part of banking operations centering on financial transactions (sales of securities and fund loans) in the

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11 Oritani (2004) mentioned that central bank services can be divided into public sector goods and club goods. In this connection, monetary policy and maintenance of financial system stability can be considered to have the feature of public sector goods and settlement services, the characteristic of club goods. Bank of Japan (1999) analyzes in depth the legal aspect of Bank of Japan business operations from the perspective of whether they are administrative or not.
financial markets between a central bank and private financial institutions. This differs greatly from foreign affairs transactions.

Second, looking at payment and settlement services, unlike foreign affairs transactions, they should be classified under “infrastructure” according to Williamson’s types of public sector transactions. Payment and settlement services of a central bank comprise the issuance and circulation of banknotes and interbank settlement services, both of which are considered transactions that provide infrastructure\(^\text{12}\). However, unlike providing physical infrastructure such as roads, the provision of payment and settlement services entails the characteristic of a sovereign transaction and cannot just be considered as the simple provision of infrastructure. That is, as described in Oritani (2006), interbank settlement services accompany credit extension by a central bank to participants in payment and settlement systems. And this credit extension has the feature of a sovereign transaction just like monetary policy and maintenance of financial system stability.

Third, services related to maintenance of financial system stability through central bank transactions seem to have a strong similarity to sovereign transactions as is the case with monetary policy. Also, central bank loans to private financial institutions to maintain financial system stability are similar to monetary policy in the sense that sovereign transactions are made in the form of financial transactions with private financial institutions. And, while supervision and the regulation of private financial institutions by a central bank have the aspect of sovereign transactions, they also have the feature of transactions accompanying the provision of infrastructure considering that they are implemented to monitor payment system participants as part of the provision of payment and settlement services.

As such, central bank transactions consist of varying degrees of sovereign

\(^{12}\) Among public sector transactions, Williamson explains “infrastructure” as follows: “the administration of police, fire, roads, parks, prisons, education, etc. is mainly a matter for state and local government. These transactions will not be considered here but are gist for the study of comparative economic organization and are increasingly coming under scrutiny.” And, having the construction of prisons in mind, Williamson considers that although the possibility of probity hazard in providing infrastructure is less than for foreign affairs transactions, the possibility of contractual hazard with regard to asset specificity and cost savings is higher.
transactions: a) high degree of sovereign transactions (monetary policy), b) low degree of sovereign transactions (payment and settlement services), and c) medium degree transactions (maintenance of financial system stability). In any case, all central bank transactions share, albeit to a different degree, the common feature of being a sovereign transaction. Therefore, this paper will consider central bank transactions comparing with foreign affairs transactions focusing on their common feature of being sovereign transactions, and will not pursue analysis by respective type.

While foreign affairs transactions are conducted using relatively stable skills such as foreign affairs negotiation tactics, central bank transactions are conducted through banking operations that are easily influenced by changes in information technology (IT) and financial transaction techniques. Therefore, it is necessary to change and innovate the skills and facilities/services related to central bank transactions in accordance with changes and progress in IT and financial transaction techniques. Such a difference in transaction features should be taken into consideration when applying Williamson’s discussion on foreign affairs transactions to central bank transactions.

B. Probity structure of central bank transactions

Based on the features of central bank transactions as mentioned above, probity and probity hazards relating to central bank transactions in line with the three aspects of probity in Williamson’s foreign affairs transactions are shown in Chart 2.

![Chart 2 Probity Considerations in the Central Bank](image-url)
In Chart 2, what clearly differs from foreign affairs transactions in Chart 1 with regard to the vertical aspect is that the central bank does not have a direct relationship with the president (executive branch) and enjoys a considerable degree of independence from both the executive and legislative branches. As such, the “mission of the central bank” will take the position of president in foreign affairs transactions. In this respect, central bank probity will be “abiding respect for the central bank mission” such as price stability and stability of financial systems, in line with Williamson’s “abiding respect for the mission.” Nevertheless, while a central bank enjoys independence from the executive and legislative branches, it has indirect contact, which means that probity with respect to responsiveness such as “whether reliable information is provided” to the executive and legislative branches will become an issue, albeit less than with foreign affairs transactions.

Therefore, probity hazards in this respect would be, for example, being disloyal to the mission, not providing information faithfully to the executive and legislative branches, and lack of a relationship of trust with the executive and legislative branches. Such hazards would undermine the basic attribute to conduct central bank transactions and also greatly affect the second aspect which will be explained in the next paragraph. As for probity regarding responsiveness, this is deeply related to the “accountability” of public agents, including the central bank, which will be considered in detail in 2.5.

Looking at the horizontal aspect, counterparties of central bank transactions are basically domestic financial institutions and the general public. Overseas central banks and international organizations that correspond to the counterparties of foreign affairs organizations as in foreign affairs transactions are also included. Therefore, the direct counterparties of monetary policy and monetary operations are the participants in financial markets, and indirect counterparties include firms and the general public. As is the case with foreign affairs transactions, probity is required on the part of a central bank in dealing with such counterparties with some intended and necessary vagueness. And, with regard to the counterparties of payment and settlement services, they are financial institutions that have current accounts with the central bank in the case of interbank settlement services, and the general public that use cash in the case of small-value settlement services such as banknotes. And, the direct counterparts of transactions concerning the maintenance of financial system stability are private financial institutions although firms and the general public are
also included indirectly.

Probity hazard in this respect are the words and actions of the officials and staff of a central bank that undermine so-called ‘market confidence.’ Market participants will deem that the central bank does not have the appropriate authority not only if central bankers lose market confidence but also if they lack probity vis-à-vis their mission and if the relationship of trust with the executive and legislative branches is lost. In this sense, what Williamson pointed out with respect to foreign affairs transactions also holds true for a central bank. The same could also be applied to central bank transactions such as payment and settlement services and maintenance of financial system stability.

With respect to the third probity aspect, the internal aspect of a central bank, it is basically the same as probity regarding the internal aspect of a foreign affairs agency. Specifically, probity refers to the integrity of central bank officials and staff toward the mission, their professional ability, and process adequacy. The fact that probity hazard in this respect will bring about probity hazard in the first and second aspects is also the same.

Nevertheless, as noted in the features of central bank transactions, a central bank clearly differs from a foreign affairs agency with respect to evolving necessary skills and the need for innovation.

Table 1 summarizes the features of central bank transactions and probity structure in comparison with foreign affairs transactions.

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<td>Responsiveness and autonomy</td>
<td>Financial transactions</td>
<td>Evolving necessary skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bank supervision, regulation</td>
<td>High necessity of innovation</td>
</tr>
</tbody>
</table>

Table 1 Comparison of Transaction Features and Probity Structure
C. Attributes of central bank governance

Based on the above features of central bank transactions and probity structure, when we consider the attributes of governance structure that would maintain the probity necessary for central bank transactions and minimize probity hazards, the four attributes proposed by Williamson can be applied almost perfectly to central bank transactions as well. And, it is impossible for private organizations (eg, private banks) that pursue efficiency and net profit to fulfill such attributes. Central bank transactions are best conducted by a public organization with a low incentive scheme, specifically a central bank, even if efficiency is sacrificed\(^\text{13}\). The governance of foreign affairs transactions and central bank transactions is compared for each attribute in Table 2.

\(^{13}\) Explanation here also explains the raison d’être of a central bank.  Oritani (2005) explained the raison d’être of a central bank through transaction costs incurred by competition among private banks in a world where central banks do not exist.
Table 2  Comparison of Governance Features

<table>
<thead>
<tr>
<th></th>
<th>Incentive scheme</th>
<th>Staff</th>
<th>Management scheme</th>
<th>Appointment of officers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Foreign affairs</strong></td>
<td>Very low incentive scheme</td>
<td>High degree of employment security</td>
<td>Detailed administrative control</td>
<td>Direct appointment by government, the legislature</td>
</tr>
<tr>
<td><strong>transactions</strong></td>
<td>Efficiency neglected</td>
<td>Mainly career staff</td>
<td>Clear hierarchical structure</td>
<td></td>
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<tr>
<td></td>
<td>No adventurous-ness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Central bank</strong></td>
<td>Relatively low incentive</td>
<td>Intermediate level of employment security</td>
<td>Intermediate level of administrative control</td>
<td>Indirect appointment by government, the legislature</td>
</tr>
<tr>
<td><strong>transactions</strong></td>
<td>A certain level of efficiency needed</td>
<td>Mixture of career staff and mid-career people</td>
<td>Intermediate level of hierarchical structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A certain level of adventurousness accepted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private bank</strong></td>
<td>Strong incentive scheme</td>
<td>Low employment security</td>
<td>Low administrative control</td>
<td>Independent from government, the legislature</td>
</tr>
<tr>
<td><strong>transactions</strong></td>
<td>Efficiency strongly pursued</td>
<td>Low perception of career staff</td>
<td>Flexible hierarchical structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regards adventurousness as entrepreneurship</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) Very low incentive scheme

Williamson pointed out a “low incentive scheme” to be a basic governance attribute of an organization that conducts sovereign transactions. This is also an important attribute of a governance structure that prevents probity hazard in central bank transactions. Therefore, it is impossible for a private organization (eg, private banks) that pursues profit and efficiency maximization and with a strong incentive scheme to replace a central bank.

That is, if a strong incentive scheme is introduced to central bank transactions in
order to achieve efficiency and profit, it will conflict with the intrinsic purpose of central bank transactions and is likely to cause probity hazard. Even if a contract with an objective aim is introduced so that the intrinsic purpose of central bank transactions is not hampered by pursuing efficiency and profits, it would be impossible to write one that could counter whatever unexpected situations might arise after signing, as Williamson pointed out. Therefore, it is impossible for a private organization to counter probity hazard in all levels of the adaptive process if an unexpected situation arose.

For example, if a private bank implemented monetary policy and monetary operations, it would use the information gained from such implementation to obtain profits from investments and fund raising in the markets causing “ultimate insider trading.” Even if the private bank specialized in monetary policy and monetary operations, it would face the problem of how such transaction costs are calculated and how information leakage should be prevented (such issues are related not only to a strong incentive scheme, but also to employment security and management control which will be discussed later).

Also with regard to payment and settlement services, a strong incentive scheme focusing on cost savings might undermine the security and quality of such services. With regard to the maintenance of financial system stability, for example, a strong incentive scheme whereby the compensation of bank examiners is based on simple indicators such as the number and importance of suggestions made during on-site examination, may involve the risk of creating probity hazard similar to other central bank transactions.

As aforementioned, Williamson also points out “adventurousness” as a probity hazard and considers the role of a low incentive scheme in restraining such adventurousness. Its application to central bank transactions provides a valuable insight. When Japan experienced financial turmoil from the end of the 1990s to the beginning of 2000, various unorthodox policies that the central bank had never before implemented were suggested by economists both inside and outside Japan. Such policies included the huge supply of base money through the purchase of various assets. Should the Bank of Japan be obliged to achieve its policy objective by a strong incentive scheme (albeit not for efficiency and net receipts), there may be a possibility that it might adopt such adventurous policy but whose long-term outcome is uncertain. However, since central bank transactions are implemented using state-of-the-art financial transaction
techniques and skills, especially IT, constant innovation is necessary in line with the progress of IT and financial transaction techniques (innovation is necessary compared to foreign affairs transactions). In this regard, a strong but “not adventurous” degree of incentive scheme that allows innovation is necessary for central bank governance.

b) Career staff with employment security

Employment security that Williamson pointed out as one governance attribute of a foreign affairs agency, could also be applied to a central bank. While an increasing number of firms in Japan are adopting a salary scheme based on performance, such cannot be directly applied to a central bank since it would increase the possibility of the central bank encountering probity hazard. A salary based on performance is basically personnel management pursuing efficiency whose resulting effect is contrary to that of generous personnel management that prevents probity hazard.

However, there is a slight difference between foreign affairs transactions and central bank transactions since the latter are implemented through banking operations. For example, a central bank needs to secure staff well versed in new financial transaction techniques and IT innovation through mid-career hiring although this conflicts with the principle of nurturing career staff to restrain probity hazard.

c) Extensive administrative controls and procedures

The “extensive administrative controls and procedures” pointed out by Williamson can almost completely be applied to a central bank. When the various administrative controls described by Williamson are applied to a central bank, it is notable that insider trading regulations must be strictly adhered to by bank officers and staff. Such strict compliance is necessary since central bank transactions are implemented through financial transactions with private financial institutions and decisions on monetary control directly influence interest rates and various financial assets. In this regard, in June 2006 the Cabinet and the media criticized the then Governor of the Bank of Japan, Toshihiko Fukui, for investing in the Murakami Fund and cancelling the contract only after he had been Governor for over two years. Such criticism seems to be inevitable (see 2.4.2).
Also, a trade-off is seen between “clearly defined hierarchical authority” that Williamson considers a governance attribute of foreign affairs transactions and the necessity of innovation in central bank transactions. Excessively rigid hierarchical authority may carry the risk of slowing innovation in central bank transactions. However, if a central bank becomes too flexible, authority and responsibility would become vague and might invite probity hazard. From this perspective, “abolition of divisions in the department\textsuperscript{14} conducted by the Bank of Japan in 2004 leaves concern of probity hazard.

d) Appointment and termination of agency officers by president and legislature

The appointment of central bank officers differs greatly from that pointed out by Williamson and this is the main feature of governance of a central bank. That is, although central bank transactions have the characteristic of sovereign transactions, independence from the government is of paramount importance compared to foreign affairs transactions.

As aforementioned, Williamson notes that “lest the integrity of the state be seriously compromised, mission safeguards need to be introduced into the design” in appointing officers of a foreign affairs agency. The same could be said for a central bank. A central bank conducts monetary policy to realize its mission of price stability and since this may conflict with the objective of government to shrink the fiscal deficit, mission safeguard is also necessary for a central bank in a modern market economy. And that is central bank independence. Central bank independence is not only important for the appointment of officers but is the main discussion point regarding the public governance aspect of a central bank and will be discussed in detail throughout this paper.

\textsuperscript{14} In July 2004, the Bank of Japan abolished “divisions” (established by the Governor) within the head office with the exception of Currency Issue Department, Operations Department, and Administration Department. The Director-General of each department can, at his/her discretion, establish a team (equivalent to divisions) and appoint a team leader (equivalent to division chief). This was expanded to all departments in July 2006.
1.2 Application of Moe's theory on the autonomy of a bureaucratic organization

Positive political theory (PPT) applies economics to political science and includes studies that apply transaction cost economics to political science. While notable research includes that by Epstein and O'Halloran (1999), a series of studies by Moe seem to be the most valid when considering public governance of a central bank. Moe’s theory not only applied transaction cost economics to the political process, but also showed clear logic with respect to the autonomy of bureaucratic organizations based on transaction cost economics. Moe’s theory is briefly summarized below and then applied to central bank governance.

1.2.1 Moe’s theory on the autonomy of bureaucratic organizations

According to Moe (1990a), the “theory of public bureaucracy” that was initiated by the pioneer achievements of Niskanen (1971) can be roughly divided into “bureaucratic politics” that analyzes the behavior of bureaucratic organizations in the political process such as relation with the legislature, and “bureaucratic organization theory” that analyzes the internal organization of public bureaucracy. In both theories, bureaucrats are not assumed to be just an entity that executes requests from voters and the legislature passively and efficiently. Rather, the theory is based on the assumption that, just like other economic entities, bureaucrats also act to maximize their self interest. Moe (1991) also surveyed existing research on the interrelationship between political science and organizational economics, and considered that in order to integrate the two theories, organizational economics should be applied after identifying the essential features of the political process.

Based on such recognition, Moe (1984) proposed applying transaction cost economics to the political process and pointed out the importance of bureaucratic organization in the political process (1990a, 1990b). In particular, how the autonomy of bureaucratic organizations emerged was clarified. An outline of Moe’s theory on the autonomy of bureaucratic organizations is as follows.

15 The aforementioned theory by Williamson can be considered as one of the theories on public bureaucracy. However, his theory cannot be categorized according to Moe’s dichotomy since it has features of both sides.
When private firms and bureaucratic organizations are compared, bureaucratic organizations are similar to private firms in that they have a mission, resources, and strategy as an organization. However, while private firms are guaranteed property rights, the right to exercise “public authority” which is the equivalent of property rights is not guaranteed to the political actors. This is because, in a democratic state, public authority has the possibility of being transferred from one party to another based on elections, etc. Such transfer risk of public authority is called “political uncertainty.” All political actors, including bureaucratic organizations, face such political uncertainty and on this point greatly differ from private firms. Under political uncertainty, even if public authority is currently at hand, whether it would continue in the future is uncertain. Policy decisions could be controlled when public authority is at hand, but once lost to other parties, even to opposition parties, adverse policies might be implemented.

Due to such political uncertainty, political actors (represented by bureaucrats and politicians) incorporate the autonomy of bureaucratic organizations within the institutional framework as a preventive measure against such uncertainty in the following ways. Firstly, bureaucrats seek to gain autonomy in order to insulate, as much as possible, the impact of “political disruption,” that is, a favorable political power suddenly turning hostile because of a regime change. The way to achieve this would be to seek strong professionalism and promote operational experience. Such technical and operational expertise becomes all the more significant for achieving autonomy as time passes, which could be explained by the concept of “transaction specificity”\(^\text{16}\) in transaction cost economics. For example, even if a bureaucratic organization does not have any special technical and operational expertise at the time of its establishment, such expertise will accumulate as the organization continues operations, and, as such, become valuable in ways that alternative agents cannot readily duplicate (a hold-up problem caused by mutual interdependence as in transaction cost economics). Secondly, the autonomy of bureaucratic organizations is not only pursued by bureaucrats, but the legislature and voters (interest groups) also have a tendency to favor extending a certain level of autonomy to bureaucratic organizations as a countermeasure against political uncertainty. In other

\(^{16}\) Looking at “transaction specificity” from the asset side, it is called “transaction-specific asset” and the feature of such an asset is called “asset specificity.” Refer to Williamson (1985) for details.
words, it is necessary to insulate bureaucratic organizations from the legislature so that even if there is a change in regime, the new power cannot implement a bold and unfavorable policy using such autonomous bureaucratic organizations.

1.2.2 Application to central bank governance

Since some aspects of corporate governance can apply to a central bank, it cannot be regarded as a pure public agent but, considering that public governance aspects apply, it can be seen as a bureaucratic organization. And, since a central bank as a bureaucratic organization faces political uncertainty like any other, when Moe’s theory is applied, autonomy would also be pursued as a countermeasure against political uncertainty.

From the perspective of central bank officers and staff as bureaucrats, if major changes are forced upon their monetary policy whenever there is a shift in political power, consistency of monetary policy cannot be maintained. And, should swings in political power affect not only monetary policy but also personnel management, it would be difficult to implement highly professional central bank operations based on banking operations. Long since established, the professionalism of central bankers is deeply embedded in its organization and this serves as a strong foundation for the autonomy of a central bank, as explained in the concept of transaction specificity in transaction cost economics. And politicians and voters may also benefit from giving autonomy to a central bank since completely adverse policy from that pursued by the previous political administration cannot be conducted.

Among the above, Boylan applies Moe’s theory to central bank autonomy focusing on political uncertainty accompanying changes in political power. Her book, Defusing Democracy: Central Bank Autonomy and the Transition from Authoritarian Rule gave practical analysis on the political background to central bank reform in Chile (Boylan (1989)) and Mexico (Boylan (1993)). Boylan

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17 Kanemoto (1991) takes the police as an example and states that “For politicians in power, autonomy of the police may not be desirable, but considering that they may not stay in power in the future, it may be desirable to continue to maintain such autonomy.”

18 Many studies have applied organization theory to the central bank assuming it is a bureaucratic organization (eg, papers given in Mayer (1990) and Toma and Toma (1986)).
concluded that central bank autonomy was an “insulation strategy” to insulate the central bank from being affected by changes in political power. According to Boylan, central bank reform in both countries was: “by making the central bank autonomous, control over monetary policy is effectively removed from the hands of politicians,” “where authoritarian elites fear the populism that may be endemic to new democracies and know that a change of regime is imminent, they can be expected to create an autonomous central bank to lock in a commitment to price stability over the long haul.”

In this connection, in Japan where changes in the political regime are very rare, pressure to reinforce and respect central bank autonomy (independence) to counter political uncertainty may not be as strong as in the US and Europe where changes in political power are more frequent. As a matter of fact, revision of the Bank of Japan Act in 1998 was implemented to enhance independence of the Bank of Japan although it cannot be regarded as a revision in line with Moe’s theory nor suggestions made by Boylan. Its major objective seemed to have been to disperse the power of the Ministry of Finance bearing in mind the criticism leveled against it during the so-called “bubble economy” in the latter half of the 1980s to financial system turmoil in the 1990s. Therefore, independence under the new Bank of Japan Act was not as comprehensive as in the US and European countries (eg, the expense budget is subject to approval by the Ministry of Finance, government representatives attend monetary policy Board Meetings, the government’s right to request postponing a vote on proposals regarding monetary control matters, etc), and even under the new Bank of Japan Act, statements to deny the Bank of Japan’s independence are frequently heard among politicians (see 2.3.2).

As such, although it is basically quite valid to apply Moe’s theory to discussion on central bank independence, it is necessary to take note of the differences between a central bank and other bureaucratic organizations. Among the various differences, there are two significant ones. First, as noted in Oritani (2004), in addition to a public governance concept, a corporate governance concept can be applied to a central bank. Therefore, a central bank has the characteristic that it cannot easily or should not be affected by public governance (influence from politicians and the government). Second, central bank independence is required for purely economic reasons regardless of political factors. Such necessity comes from the fact that banknotes issued by a central bank are money in a fiat currency system. In other words, under the gold
standard, the quantitative constraint of a natural resource, gold, restrained money supply to secure price stability, but, in a fiat currency system, independence of a central bank is expected to restrain money supply instead.

In regard to the above two points, Boylan (2001) terms the grounds for the argument on central bank independence by Cukierman (1992) and Maxfield (1997) “credibility literature” and emphasizes that her treatment of the economic effect of central bank independence differs from theirs. While “credibility literature” stresses that central bank independence enhances credibility of a central bank and brings about price and foreign exchange stability, Boylan considers central bank independence necessary to minimize political transaction cost in the political process and that the economic effect is not its direct objective. In this sense, she argues that central bank independence in her theory is based on “institutionalism” in political science.
2. Application of Agency Theory

In this section, agency theory will be applied to the public governance issues of a central bank. First, after introducing agency theory in general, what kind of principal–agent relationship exists between a public agent and legislature/politicians when the theory is applied to the political process is observed. Then, the central bank’s principal–agent relationship will be compared with that of government ministries and the features considered. Also, the congressional dominance hypothesis that asserts superiority of the legislature over public agents is introduced and the possibility of sanctions and threats the central bank would receive from the legislature/politicians based on the hypothesis considered. Then, by applying compound board theory advocated by Fama and Jensen, this paper considers mechanisms to lessen the possibility of sanctions and threats to the central bank from the legislature and executive branch through the appointment of central bank officers. Moreover, central bank accountability is proposed as a principal’s monitoring measure over an agent in agency theory.

2.1 Agency theory and the political process

2.1.1 What is agency theory?

Agency theory, or ‘principal–agent theory,’ analyzes the relationship between organizations and staff as a relationship between ‘principal’ and ‘agent’ 19. There are numerous relationships that can be considered principal–agent relationships in our social system as seen in that between doctor (=agent) and patient (=principal), and solicitor (=agent) and client (=principal). Such relationships, where a certain entity relies on another, came about since division of labor generally enhances productivity. As put forth by Hayek (1945), “If we can agree that the economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place, it would seem to follow that the ultimate decisions must be left to the people who are familiar with these circumstances, who know directly of the relevant changes and of the resources immediately available to meet them. We cannot expect that this problem will be solved by first communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders.” That is, such

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19 For an explanation of agency theory, refer to Slangen, Loucks, and Slangen (2008).
relationships are created when it is deemed efficient to use professionals as agents rather than principals doing everything themselves.

As such, the principal–agent relationship is created from the perspective of efficiency, but there are costs related to such a relationship. Such cost is called ‘agency cost’ or the ‘agency problem’. This cost or problem arises when the agent acts not on behalf of a principal’s benefit alone, but also for their own benefit.

Agency theory and transaction cost economics have many points in common. For example, the principal–agent relationship in agency theory is equivalent to the transaction relationship in transaction cost economics, and agency cost to transaction cost. And, the incentive system to counter the agency problem in agency theory has the same function as governance structure in transaction cost economics. However, while agency theory pays attention to the difference in the concerned parties’ position (principal or agent) and places importance on the prior design of a contract to mitigate agency problems, transaction cost economics takes the stance that it is impossible to design a perfect contract that prevents opportunism due to transaction specificity that arises after the contract. Therefore, transaction cost economics pursues governance structure that minimizes transaction costs in the whole transaction process.

2.1.2 Application to the political process

The political process is a structure where voters, the legislature, and the executive branch make policy decisions through interaction. Recently, in the field of political economy, many studies where agency theory is applied to the political process have been conducted. For example, Stevens (1993) believes it significant to apply agency theory to the political process for the following three reasons.

First, laws (including constitutions) envisage hierarchical relationships in the political process and, in this regard, the application of agency theory is in line with the spirit of the law. Since voters select cabinet members through election, they can be considered as a legislature’s principal, and the legislature the agent of the voters. Moreover, with regard to authority relationships within the government, in the case of a parliamentary system, the legislature selects the prime minister as the leader of the executive body and the prime minister
appoints cabinet members and officers of public agencies. The cabinet and public agencies jointly constitute the executive body. Here, the legislature is the principal, and the executive body (cabinet and public agencies) is considered an agent. Within the executive body, the cabinet is the principal and public agencies the cabinet’s agent. In the case of a presidential system, the president is directly elected by the voters and although the legislature has the role of checking the activities of the executive body including the president, it is not the president’s principal.  

Second, respective parties of the political process hold different information both quantitatively and qualitatively. For example, politicians have less professional knowledge than bureaucrats. Therefore, agency theory is suitable for analyzing the behavior of such parties with differing information since the main objective of agency theory is to study how an efficient incentive system can be structured between parties with differing information as in the relationship between a doctor and a patient. Such an incentive system can be regarded as a governance structure of the political process, that is, public governance.

Third, agency problems actually arise in all relationships in the political process. For example, voters sometimes feel that the legislature is not necessarily keeping its promise or the legislature criticizes public agencies for not acting in line with their intentions (this point will be closely looked at from the perspective of accountability in 2.5).

2.2 Features of the principal–agent relationship of a central bank

A central bank is a public institution and as such public governance is applicable. So basically, agency theory could be applied to a central bank like other government institutions. However, the principal–agent relationship of a central bank can be characterized as having multiple principals and having the feature of an independent agency, which will be explained below and the implications for public governance studied.

2.2.1 Multiple principals of a central bank

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20 Palmer (1995) and Moe and Caldwell (1994) made a comparative analysis of presidential and parliamentary systems based on agency theory.
Unlike executive branches of the government, it should be noted that the legislature is also a direct principal of central banks in major countries, in addition to the head of the executive body (president or prime minister). When a principal of a central bank is considered from the perspective of who elects (recommends, nominates, appoints, approves, etc) central bank officers (such as governor), none are elected by a national referendum. Therefore, although the general public is the ultimate principal, it is not the direct principal of a central bank.

In major developed countries, the governor of a central bank (Chairman of the FRB in the US) is appointed by the head of the executive body, president, or cabinet (prime minister), and, in this respect, the principal of the central bank is the head of the executive body. And at the same time, there are countries where not only the executive body, but also the legislature is involved in electing central bank officers. In this case, the legislature also becomes the principal. Specifically, under the US Federal Reserve System, Congress is involved in the selection process in the form of approving the Chairman and Governors of the Board appointed by the President. In the case of the Bank of Japan, members of the Policy Board are appointed by the Cabinet and approved by the Diet. Also, with respect to the European Central Bank (ECB), ECB officers, such as the President, are determined through consultation among member nations’ government representatives and the European Parliament based on a recommendation from ECB’s General Council. In this regard, the ECB has multiple principals such as the General Council, the member nations, and the European Parliament.

Dixit (1996) calls such relationships with several principals “multiple principals” and compares the situation with a single principal. According to Dixit, in the face of complications that arise from the existence of multiple principals, an agent’s incentive becomes less than enthusiastic. Dixit considers this to be the source of inefficiency in public agencies with multiple principals. If applied to a central bank, there would not be much incentive to promote monetary policy in line with that proposed by a specific principal. However, since the executive body and the legislature have different opinions concerning central bank policy, in this case the existence of multiple principals may be useful in preventing a central bank from pursuing biased policy. And, as explained in 1.1.2, according to Williamson (1999) the necessity of congressional approval of officers appointed by a president has the benefit of reinforcing the probity of the officers
vis-à-vis the mission.

2.2.2 Independent agency and the central bank

A. What is an independent agency?

The principal–agent relationship of a central bank in the political process has the feature of an independent agency in the US and Japan, which differs from government ministries. Ito (1982) describes the independent agency as follows (translated from Japanese)²¹:

The so-called independent agency system was developed in the US from the end of the 19th century to the beginning of the 20th century with a view to introducing legal economic restrictions in line with the development of advanced capitalism. Its features are: members have a guarantee of status, decision is made by mutual agreement (collegiate body), and the institution has a quasi-legislative power to enact regulations and also quasi-judicial powers to settle disputes in addition to dealing with administrative affairs. In Japan, after World War II and reflecting the desire of the General Headquarters of the Allied Forces, many independent agencies were established to eliminate bureaucracy-led executive branches in the government, lessen concentration of power in the Cabinet, and better convey the public will to the administrative authorities.

Specific examples are the Interstate Commerce Commission in the US and the Fair Trade Commission in Japan. While both US and Japanese independent agencies are independent from the President (Cabinet), they are subject to public governance by the legislature. Also, the degree of independence is not total, just a level that is relatively higher than for other government ministries. That is, the President (Cabinet) cannot intervene in an independent agency’s budget or operations but can appoint agency heads. In this regard, independent agencies can be considered to be endowed with “independence

²¹ An independent agency is an organizational concept of US federal government and Japan’s central government. It is an agency that exists outside federal executive departments and is not part of a fourth branch of government. Instead, it exercises executive functions outside of any executive department.
within government.”

**B. The central bank as an independent agency**

Most central banks are not pure independent agencies\(^{22}\), but many can be regarded as a kind of independent agency because of the following reasons:

a) Decision making
In many cases, decisions regarding the operations and policies of a central bank do not need to be authorized by the legislature or executive branch if due process is observed. However, changes to decision-making procedures need, in general, to be authorized by the government.

b) Staff matters
As mentioned, the legislature is involved in the selection of central bank officers. Also, the terms of central bank officers are often longer than those in government ministries and strict criteria must be observed in dismissing them during their term of office. Looking at the terms of office of central bank governors and officers, for example, in the case of the US Fed, it is 14 years (but for the Chairman, four years), the President and officers of the European Central Bank eight years, and the Bank of Japan Governor five years. Most central banks have strict criteria for dismissing officers and it is difficult for the appointer to dismiss them at his/her own discretion. This differs from the dismissal of senior civil servants in government ministries.

c) Accounting
With regard to procedures to decide the budget of major central banks, some operations of the Bank of Japan and the Bank of England need approval from the budgetary authority. But other central banks decide their budgets independently. As for financial statements, the Bank of Japan needs to obtain approval from the Minister of Finance, and the Bank of Canada has to submit financial statements to the national legislature via the Minister of Finance (the Bank of England needs to obtain approval for some operations from the Treasury). However, other central banks do not need to obtain approval from either their financial authority or legislature and their autonomy is duly observed.

\(^{22}\) The Board of Governors of the Federal Reserve System in the US is regarded as a pure independent agency.
C. Constitutional doubts about independent agencies and the Bank of Japan Act

Constitutional doubts had been raised both in the US, the birthplace of the independent agency\(^\text{23}\), and in Japan. The US Constitution stipulates that “the executive authority shall be vested in the President of the United States of America” (Article II, Section 1) and the Constitution of Japan (Article 65) says that the executive authority belongs to the Cabinet\(^\text{24}\). According to Bank of Japan (2000), in the process of discussing revision of the Bank of Japan Act and during actual revision in 1997, there had been argument regarding the considerable independence of the central bank despite it having to fulfill various administrative obligations pursuant to Article 65 of the Constitution. Japan’s Cabinet Legislation Bureau issued an opinion that in order to secure constitutionality of the Bank of Japan’s independence, the executive branch of the government needs to take control of the ‘budgetary authority’ and ‘appointive authority’. Based on the opinion, under the new Bank of Japan Act, a budget for expenses (limited to those specified by a Cabinet order as not hampering currency and monetary control) needs to be authorized by the Minister of Finance, and officers (Governor, Deputy Governors, Policy Board members) appointed by the Cabinet, subject to approval of the House of Representatives and the House of Councillors.

However, the Study Group on the Central Bank from the Perspective of Public Law (chaired by Professor Hiroshi Shiono of Tokyo University) discussed, in detail, the constitutionality of both the independent agency and the new Bank of Japan Act. It reached the conclusion (published in Bank of Japan (2000)) that the Cabinet Legislation Bureau’s opinion was wrong. The Study Group considered that (translated from Japanese) “although the Cabinet Legislation Bureau mentioned budgetary authority and appointive authority as a basis for constitutionality of the Bank of Japan Act, if true, then even the Supreme Court can be said to be under the control of the Cabinet.” As for appointive authority, the Study Group said “the Cabinet’s control over the appointive authority of the Bank of Japan is not a condition for securing constitutionality.” Rather, it concluded that “considering that the policy and operations of the Bank of Japan

\(^{23}\) Miller (1986) studies constitutional issues regarding independent agencies in the US.

\(^{24}\) Bank of Japan (2000) explains in detail the constitutionality of independent agencies in Japan.
are entrusted to it by the nation, involvement of the Cabinet and the Diet in the staff matters of the Bank of Japan should be perceived from the perspective that the public should select the person that bears ultimate responsibility for what they entrust.” And as for budgetary authority, the Study Group reached a consensus that “to say that the Bank of Japan is under the authority of the Cabinet subject to the Constitution, it does not necessary mean that the Cabinet should have budgetary authority over the Bank of Japan.”

2.3 Congressional dominance hypothesis and the central bank

As mentioned in 2.1.2, according to the law, the legislature acts as an agent of voters and principal of the executive branch (including independent agencies). There is heated discussion as to what extent this principle is actually the case, especially as regards the relationship between the legislature and the executive branch (‘the executive branch’ in this section refers to public agencies such as general government ministries). In such discussion, a view that considers the legislature controls the executive branch in line with the law is called the ‘congressional dominance hypothesis.’ According to this hypothesis, the legislature, as principal, can in various ways sanction the executive branch, the agent, in place of monitoring. This hypothesis will be applied to the central bank, pointing out the strong influence of the legislature and politicians on a central bank, with due attention to the threat posed through the authority to appoint central bank officers. Also, discussion that a political business cycle is arising as a result of such influence will be introduced.

2.3.1 What is the congressional dominance hypothesis?

Major research on the congressional dominance hypothesis based on the agency theory has been conducted by Weingast (1984) and Weingast and Moran (1983). In this research, the authors believe it mistaken to conclude that the legislature is not controlling the executive branch just from the fact that the legislature does not directly monitor the executive branch in the US political process.

First, those denying the congressional dominance hypothesis put forward the following observations about the relationship between the legislature and the executive branch: “a) the lack of oversight hearings, b) the infrequency of congressional investigations and policy resolutions, c) the perfunctory nature of
confirmation hearings of agency heads, d) the lack of ostensible congressional attention to or knowledge about the ongoing operation and policy consequences of agency choice, and e) the superficiality of annual appropriations hearings” (Weingast and Moran, 1983). Moreover, Moe (2005) points out that public agencies, though being agents, have significant authority over politicians (the principal) since the former could affect the latter’s election through political activities.

However, according to Weingast (1984), the reason why such an inconsistent phenomenon where the executive branch seems to be controlling the legislature contrary to the law occurs is that there is an ingenious plan to cut down monitoring costs arising from the principal (the legislature) governing the agent (the executive branch). In reality however, there is a possibility that politicians, as principal, have the power to sanction the executive branch and therefore the executive branch would have an incentive to be sensitive to politicians’ intentions. Based on the US political system, Weingast gives the following measures that politicians can use against the executive branch as sanctions “that substitute for direct, continuous surveillance of regulatory administration.”

a) Budget
   Since public agencies compete against each other to obtain budget funds, loss of legislature support implies a disadvantage in such competition.

b) Use of veto against appointment of public bureaucrats
   Normally, confirmation of appointment is conducted smoothly, but could become a significant sanction imposed by the legislature against the executive branch.

c) Policy interference
   The legislature could block implementation of the executive branch’s policies by opposing their policies and depriving the executive branch of regulatory powers.

Despite the legislature holding the above sanction powers, in normal times it seems (on the surface at least) that the legislature does not monitor the executive branch—the congressional dominance hypothesis says this is
because the executive branch is acting in line with the legislature’s intentions.  

2.3.2 Application of congressional dominance hypothesis to a central bank

A central bank enjoys independence compared to government ministries and has the feature of an independent agency. Nevertheless, it is strongly influenced by the legislature, politicians, and the cabinet (White House) and therefore the congressional dominance hypothesis can also be applied to a central bank. This section considers how the legislature and politicians affect a central bank in line with the theory, and then introduces the political business cycle theory that tries to prove the influence of the legislature, politicians, and cabinet on central bank monetary policy.

A. Influence of legislature and politicians on a central bank

How the legislature and politicians affect central bank policy can be proved in three ways: through a) the counter observations given by those opposing the hypothesis b) the possibility of sanction/threat to a central bank by the legislature and politicians, and c) cooperative action among the legislature, politicians, and the bureaucracy.

a) Counter observations given by those opposing the hypothesis

To consider whether the congressional dominance hypothesis could be applied to a central bank, the relationship between the legislature and a central bank will be examined in line with the observations given by those denying the hypothesis regarding the relationship between the legislature and the bureaucracy.

1) Lack of oversight hearings

   This is an argument by those who hold the congressional dominance hypothesis cannot be applied to a central bank. In fact, central banks regularly take part in public hearings in the legislature. For example, the Bank of Japan Act (Article 54) stipulates that in addition to bi-annual explanations to the Diet of a written report on the Bank’s business operations,

25 Wilson (1989) gives various criticisms of Weingast. Besides lack of understanding, Weingast is criticized for only considering the legislative and the executive branches (public agencies) as the government, neglecting the presence of the White House and the judiciary.
the Governor (or representative) shall also attend Diet (including committee)
sessions when requested.

2) Infrequency of congressional investigations and policy resolutions
It is true that the legislature hardly examines a central bank.

3) Perfunctory nature of confirmation hearings of agency heads
It depends, and in some cases, it may not be easy. And, as will be
mentioned later, it is highly likely that the legislature and politicians intervene
in the selection process.

4) Lack of ostensible congressional attention to, or knowledge about, ongoing
operations and policy consequences of agency choice
Since central bank monetary policy is easy to understand superficially, even
politicians lacking expert knowledge can give their views, and, as a matter of
fact, they do so quite frequently.

5) Superficiality of annual appropriation hearings
Many central banks do not need to discuss their budget with the legislature.

And, with regard to affecting politicians’ elections as suggested by Moe, it is
almost impossible for a central bank to do so. Since services offered by a
central bank such as monetary policy are macroeconomic issues, the central
bank is not in a position to formulate specific pressure groups. Nevertheless,
should interests of the financial industry and central bank match, it could, though
highly unlikely and unrealistic, perhaps be part of a pressure group influencing
politicians.

b) Possibility of a central bank being sanctioned/threatened by the
legislature/politicians

Next, it is highly likely that the legislature and politicians can sanction a central
bank as stated by Weingast. There are various forms of sanction/threat, both
formal and informal. Major sanctions are as follows:

1) Use of legislative power
Even if central bank independence is guaranteed by the respective current
central bank legislation, since the legislature has legislative power, it may
use such power to amend the central bank act, thus depriving the central bank of its independence.

For example, according to Willet and Keen (1990, p17), “The institutional independence of the Federal Reserve from political pressures is far from complete. The president holds important powers of appointment and reappointment, and the current institutional arrangements are legislative provisions, not constitutional provisions. Such legislation is not lightly changed, but the possibility is not so remote that Fed officials have felt free to ignore signals coming from Congress and the executive branch. Ironically, in order to maintain the Fed’s independence, Fed officials often have bowed to political pressure.”

Japan has also experienced such political pressure. For example, the following appeared in the *Nikkei* newspaper of 15 January 2007 (translated from Japanese):

> In a lecture in Toyokawa, Aichi Prefecture, Hidenao Nakagawa, Secretary-General of the Liberal Democratic Party, commented on a further interest rate increase as follows: “Should the Bank of Japan judge otherwise, the government has the responsibility to effect authority stipulated under Article 19 of the Bank of Japan Act” and called for the government to exert its authority to postpone a vote on proposals made on monetary policy matters….Nakagawa stated that “should the Bank veto again, one cannot but consider that the Act is gravely amiss,” evidencing his recognition that revision of the Bank of Japan Act cannot be helped.

As regards “policy interruption” considered by Weingast, politicians cannot interfere with monetary policy itself, but, since various activities of a central bank are accompanied by the drafting/revision of laws and regulations, politicians can interfere in this aspect which acts as a possible sanction/threat to a central bank.

2) Exercise of appointive authority

As explained, the governor and officers that are already appointed cannot easily be dismissed, but politicians can exercise their appointive authority (or have the central bank anticipate its exercise) over successors, posing a
threat to the central bank. Bearing this in mind, the governor and officers may wish to avoid, within their term, the appointment of an executive with differing opinion as it might pose some inconvenience.

3) Budgetary authority
   No central bank in developed nations has to obtain budget confirmation from the legislature. However, the legislature can question a central bank’s financial statements as well as budget, and the way they question may pose a threat to the central bank as will be explained below.

4) Questions in the legislature
   The central bank governor and officers can be summoned by the legislature and, in the case of Japan, the frequency is fairly high. Depending on the content and how questions are presented, such could become a sanction/threat to the governor and officers who respond.

   This is a sort of so-called ‘reputation risk’ for the central bank governor and officers. That is, since monetary policy is implemented under an uncertain situation where nobody knows (or may not know even in the future most of the time) whether the central bank made the right judgment concerning its policy, it is highly likely that how their judgment is evaluated is of concern to the central bank governor and officers.

c) Cooperative action among the legislature, politicians, and the bureaucracy

   The above discussion focuses only on the relationship between the legislature/politicians and the central bank, but, as will be mentioned later, the central bank is highly likely to conflict with the bureaucracy, especially the entity in charge of finance (ie, the Ministry of Finance) concerning financing of a fiscal deficit. Therefore, if the bureaucracy tries to sanction or pose a threat to the central bank along with the politicians of the ruling party and/or cabinet (president’s office), incentives to sanction the central bank will intensify and at the same time measures to impose sanctions will further increase. For example, as mentioned in 2.2.2, in Japan, the Minister of Finance has the authority to approve the Bank of Japan’s budgetary expenses or otherwise. If the Minister disagrees with the Bank concerning financing of the fiscal deficit, he/she can impose a sanction or threaten to use his/her authority.
Especially in Japan where a political power shift rarely occurs, the relationship among the ruling party, the cabinet, and the bureaucracy is close, thus increasing the likelihood that they would cooperate in pressuring the central bank. Since the opposition party has little influence, the bureaucracy will act in accordance with ruling party’s wishes thus strengthening the relationship.

B. Political business cycle theory

As above, it seems likely that the congressional dominance hypothesis can be applied to the relationship between a central bank and politicians/bureaucrats. However, there is no direct research as to how that affects, in reality, the monetary policy of a central bank. Nevertheless, political business cycle theory tries to, although indirectly, capture the influence of politicians/bureaucrats on monetary policy (this theory is categorized under public choice theory which will be explained later).

Political business cycle theory was first advocated by Nordhaus (1975) who considered that the business cycle in the US is correlated with the political power shift. The theory advocates that such a correlation exists because, in the year before a presidential election year, the US government adopts an expansionary policy to bring the economy to its best, and then pursues tightening policy after the election to prevent inflation.

However, for such a policy to succeed, a trade-off needs to exist between the unemployment rate and the growth rate, at least in the short term (short-term downward sloping Phillips curve). In the 1970s, when the political business cycle theory was advocated, a short-term downward sloping Phillips curve had been generally accepted and hence the possibility that such an economic policy had been pursued cannot be denied. However, since recognition that there is no stable relationship between the unemployment rate and the growth rate prevailed thereafter, many researchers do not think that the political business cycle can be verified (eg, Beck (1982)). Mueller (1989) summed up such views and commented that “although there exists clear evidence that some governments in some countries at some point in time have behaved as the political business cycle model predicts, the evidence is not strong enough to warrant the conclusion that this type of behavior is a general characteristic of democratically elected governments.”
The fact that the political business cycle is rendered invalid does not directly relate to whether there is a politician insisting on monetary easing policy based on the short-term Phillips curve or not. In other words, for the political business cycle to be valid, politicians/bureaucrats need to make such an assertion and the central bank has to actually implement monetary policy accordingly and that monetary policy needs to bring about a business cycle.

Besides the political business cycle theory, there is research on a more direct relationship between politics and monetary policy. For example, Beck (1987) tested whether the federal funds rate had the tendency to be lower during US election (presidential and congressional elections) years than normal years and did not find any evidence. However, Willett and Keen (1990) changed the testing methodology and found an election cycle in Treasury bill rates.

Chang (2003) also shows that the appointment of the Fed Chairman and members of the Board of Governors is an important avenue of political influence on the Fed based on econometric analysis of voting on monetary policy using data from the Fed's voting records and coded signals, or numerated opinions expressed, in presidential and senatorial statements regarding monetary policy.

Moreover, one of the factors behind the bubble economy in the latter half of the 1980s in Japan was considered to be excess monetary easing measures. Had there been strong pressure on the Bank of Japan from politicians/bureaucrats in the period, this may be perceived as a political business cycle in a wider sense.

2.4 Compound board system of the central bank based on agency theory

Oritani (2004) analyzes the features of central bank services and holds that a ‘compound board’, which consists of one board from the perspective of public governance and another from corporate governance, is desirable. Based on Fama and Jensen’s agency theory this paper will show that a compound board is indeed desirable to secure central bank independence even from the perspective of public governance alone, and that with regard to the appointment of central bank officers, involvement of the legislature and the executive branch should be limited to that of the upper board alone and appointive authority of the lower board needs to be kept in the hands of the upper board. Such an institutional scheme to maintain central bank independence is necessary, since, as aforementioned, the legislature and politicians are likely to pressure the
central bank, which may induce a political business cycle.

2.4.1 Fama and Jensen's compound board theory

According to Fama and Jensen (1983a, 1983b), within a “complex organization” such as publicly-held “large open corporations,” there are two “decision hierarchies,” or “decision management” and “decision control.” They clarified the objective of such decision hierarchies to be a countermeasure against agency problems on the management side as a result of the so-called ‘separation of ownership and control’.

Fama and Jensen hold that a board of directors, a decision control mechanism of large open corporations, is at the top of organizational governance and makes decisions to hire, fire, and set the compensation of staff in charge of business management (equivalent to members of an ‘executive board’) and ratify and monitor important decisions made by such staff. That is, by adopting a compound board scheme consisting of a board of directors and executive board, the board of directors, the upper board, controls the lower board, the executive board. The objective in adopting such a hierarchical compound board scheme is that it is effective in preventing the agency problem arising in an organization where a ‘decision agent’ (eg, the management of a company) does not have a major share of any wealth effect stemming from its decisions (this is called ‘residual risk bearing’ which is held by, for example, shareholders). In other words, management (=the agent) may act contrary to the interests of the shareholders (=the principal) because of the separation of ownership and control. Fama and Jensen consider that if management is divided into controller (=upper board) and manager (=lower board), a mutual monitoring system would function as two boards, as agents of the shareholders, informally monitoring one another26, in addition to formal checking through the upper board controlling the lower board.

Also, Turnbull (2000, 2001a, 2001b) stated that a compound board scheme was more desirable than a unitary board scheme since corruption of power and shortage of information feedback to shareholders occur under the latter

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26 Stevens (1993) also pointed out mutual monitoring of agents as one measure to counter the agency problem (see 2.5.1).
As such, under a compound board scheme, the principal–agent relationship overlaps at various levels from shareholders to board of directors and executive board. This is called a ‘multi-level principal–agent relationship’. Such a relationship is desirable since, as basically pointed out by Hayek (1945) in section 2.1.1, decentralized decision making is superior to concentrated (authoritarian) decision making with respect to information efficiency.

2.4.2 Application of compound board theory to a central bank

The above theory by Fama and Jensen and opinion of Turnbull basically explain the superiority of a compound board scheme in the governance structure of corporations (corporate governance). Fama and Jensen also believe that the superiority of the compound board scheme can be applied to non-profit organizations and large professional partnerships. In the following paragraphs, their discussion will be applied to central banks and the public governance of central banks considered. Specifically, the current governance of central banks in major developed nations will be overviewed. Then, the paper will clarify the fact that the legislature and the executive branch are able to interfere with a central bank more than central bank system designers had envisaged through appointive authority regarding central bank officers. Finally, the case of the Swiss National Bank, which adopts a near complete compound board scheme will be introduced.

A. Governance structures of central banks in major developed countries

First, looking at the governance structure of major central banks, all but the Bank of Japan adopt a compound board scheme as shown in Table 3. The compound board scheme adopted by central banks traces a hierarchical relationship between the two boards, although the degree of hierarchy differs among banks. Thus a two-tier principal–agent relationship is formed within

27 Williamson (2008) explained the importance of board of directors even if it does not always exercise vigilant monitoring of the executive board.
28 Until enactment of the new Bank of Japan Act in 1998, the Bank of Japan had Executive Meetings in addition to Policy Board Meetings. This could be regarded as a compound board scheme, but, under the new Act, a unitary board scheme was adopted. However, according to Kanda (1997), even under the old law, the Bank, in a legal sense, only had the Policy Board, and hence in effect adopted a unitary board.
each central bank. The hierarchical relationship can be seen from the fact that the upper board is involved in, and makes decisions on, the appointment of lower board members, not to mention its power to decide the baseline of central bank management. Therefore, the distance between the legislative/executive branches and lower board of a central bank is greater than that of general government ministries. That is, there is an additional level as regards the aforementioned multi-level principal–agent relationship.

Adoption of a compound board scheme may be due to the fact that central banking requires specialized professional knowledge in addition to the historical background that many central banks began as private banks. From the perspective of agency theory, even if a two-tier principal–agent relationship increases agency costs, since a high level of professional knowledge is required, a decision may have been made that it would be better to leave the matter to the agent (lower board) with professional skills (the advantage of a principal–agent relationship as pointed out by Hayek in 2.1.1) rather than the principal (upper board) directly conducting business operations. Therefore, the intention of the compound board scheme in Fama and Jensen’s theory, which is to mitigate the agency problem by separating the internal organization into monitoring and execution, may not apply to a central bank as much as in private corporations.

The same may also be seen in how top management and members are decided with respect to the two boards. Excluding the Swiss National Bank and the US Federal Reserve Banks, the same person heads both the upper and lower boards. Moreover, there have been cases of overlapping members. Hence, the two boards are not in a genuine hierarchical relationship. In contrast, in the case of private corporations adopting the compound board scheme, it is quite rare for the same person to be both the chairman of the board of directors and the chief executive officer of the executive board. It is also rare to have overlapping members.

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29 For example, in the case of the European Central Bank, the President heads the Executive Board, the lower board, as well as the Governing Council consisting of member central bank governors and members of the Executive Board. Moreover, the Governing Council has the authority to decide monetary policy and from these facts it is apparent that emphasis is placed on monetary policy. As for the US Federal Reserve Banks, members of the two boards are completely separated, but this may be due to the fact that the banks do not directly have the authority to make decisions on monetary policy.
Table 3  
Two-tier Principal–agent Relationships  
of Major Central Banks in Developed Nations

<table>
<thead>
<tr>
<th>Bank of Japan</th>
<th>Upper board</th>
<th>Lower board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Policy Board</td>
<td>None</td>
</tr>
<tr>
<td>Federal Reserve System</td>
<td>Federal Reserve Board, Federal Open Market Committee</td>
<td>Conference of Presidents</td>
</tr>
<tr>
<td>Federal Reserve Banks</td>
<td>Board of Directors</td>
<td>Executive Meeting</td>
</tr>
<tr>
<td>Swiss National Bank</td>
<td>Bank Council</td>
<td>Governing Board</td>
</tr>
<tr>
<td>European Central Bank</td>
<td>Governing Council</td>
<td>Executive Board</td>
</tr>
<tr>
<td>Bank of England</td>
<td>Court of Directors</td>
<td>Monetary Policy Committee, Financial Stability Committee</td>
</tr>
<tr>
<td>Bank of Canada</td>
<td>Board of Directors</td>
<td>Executive Committee</td>
</tr>
</tbody>
</table>

By its nature, monetary policy decision making clearly requires public governance, and thus it may have been deemed that the internal board of a central bank alone (e.g., the lower board) should not be fully responsible for monetary policy in the governance structures of the central banks of major developed countries. However, considering that monetary policy is a central bank function, it is quite natural to separate the board for implementing monetary policy from that for monitoring according to Fama and Jensen’s theory. In other words, the upper board should confine its responsibility to the monitoring of the lower board and the lower board, the internal board of the central bank, should take responsibility for conducting monetary policy.

B. Problems of direct involvement by the executive/legislative branches in central bank officer matters

The above mentioned strong characteristic of public governance with respect to monetary policy also appears in the way the executive branch and legislature are involved in matters regarding central bank officers. The situation where the executive branch and the legislature are only involved in the selection of upper board members and delegate the selection of lower board members to the upper board only applies to the Swiss National Bank (a case where no direct involvement is made with the board that decides monetary policy) and, in other
countries, the executive branch and the legislature are directly involved in the selection of board members that are responsible for monetary policy. The strong desire of the executive branch and the legislature to be involved in deciding monetary policy through appointive authority seems to be reflected in the governance structure.

However, such a scheme is considered to entail a significant problem from the standpoint of central bank independence. As mentioned, according to the congressional dominance hypothesis, the legislature, politicians, and the executive branch could exert pressure (such as threats/sanctions) on a central bank through various channels, one of which is through involvement in the appointment of officers. It is a matter of course that the executive branch, the agent of the legislature and politicians that are in turn the agent of the general public, interfere with the appointment of central bank officers from the perspective of public governance of a central bank. However, since public governance of a central bank was designed from the perspective of central bank independence, it was not envisaged that the legislature, politicians, and the executive branch would use appointive authority to pressure a central bank even on individual issues such as monetary policy that should be independently decided by it. Rather, in order to eliminate such pressures, many central banks in major countries incorporate a system to secure the status of officers.

a) Case of the UK
From the above perspective, interesting events occurred in the UK and Japan. First, in the UK, the Chancellor of the Exchequer who has the right to appoint Bank of England Monetary Policy Committee Members left two positions vacant for four months. Whether such a delay in appointment was intended to pressure the Bank of England was not certain, but showed that the Chancellor could use appointive authority to exert pressure on the central bank. The Nikkei newspaper (22 July 2006) carried an article entitled “BOE’s vacant Monetary Policy Committee filled at last, possible revision of selection process” (written by Arisa Yoshida, London office <translated from Japanese>):

The Monetary Policy Committee of the Bank of England had two vacancies from spring 2006 which were not filled until mid-July. While those concerned gave a sigh of relief that steering of monetary policy had returned to its normal state, discussion to revise the selection process where appointment of committee members is fully entrusted to the
Chancellor began to surface. While the monetary policy decision-making process is transparent, the selection of committee members is opaque. When Bank of England Governor Mervyn King participated in the House of Commons Treasury Committee in late June (2006), he alleged that the four-month long vacancies on the Monetary Policy Committee were due to the closed-door selection of committee members by the Chancellor, and publicly criticized then Chancellor of the Exchequer Gordon Brown who held appointive authority. Of the nine Monetary Policy Committee members, five are central bank staff including the Governor, and four are appointed by the Chancellor from outside the central bank. However, after one of the members left office in March, before a successor was appointed, another suddenly died and the number of committee members was just enough to form a quorum. It was two weeks after Governor King’s criticism that Chancellor Brown made a decision. Until then, he had only replied that selection was under consideration whenever he was asked about appointing new members. His announcement of new committee members came immediately after the House of Commons Treasury Committee indicated it would study the selection process of Monetary Policy Committee members in response to criticism of the closed-door selection process. “Appointment criteria and selection process should be clarified” said Dr DeAnne Julius, Chair of the Royal Institute of International Affairs, who had been a Committee member until 2001. She considered that no one knowing when and by what criteria the Chancellor appointed a new member would invite market uncertainty. The Bank of England has been renowned for its skillful management of monetary policy since its independence from the government in 1991, but rivalry with the Treasury over appointment of Monetary Policy Committee members may continue for some time.

b) Case of Japan

In Japan, when it became apparent in June 2006 that Bank of Japan Governor Toshihiko Fukui had invested in the Murakami Fund, pressure from the legislature and executive branch seemed to have arisen in a reverse direction from that envisaged under the framework to secure the Bank’s independence. With regard to the appointive authority of central bank officers, considerations
such as security of status\textsuperscript{30} were made so that the government would not be able to dismiss any officer they happened to dislike. However, in this case, to the contrary, the then Cabinet would be held responsible for appointing Governor Fukui if he were to resign, and was said to have been facing a difficult situation. In this regard, while there had been strong criticism from the general public and the opposition party that Governor Fukui should resign for acting contrary to probity, then Prime Minister Koizumi and the Cabinet defended him. Of course, security of status\textsuperscript{31} prevented the Cabinet from removing the Governor from his post in the first place, but if there had been a board that made judgment from a neutral standpoint regardless of political judgment, and if Governor Fukui had not been dismissed based on such board’s decision, the trustworthiness of Governor Fukui would not have been brought into question.

The Bank of Japan decided not to hike the interest rate at the last minute. Although there had not been solid evidence to support the recovery of personal consumption, the decision cannot but be considered as an outcome of political considerations under obvious pressure from the government that threatened to revise the Bank of Japan Act. There was undoubtedly a desire to avoid friction with the government and the ruling party concerning appointment of the next Governor and members of the Policy Board. And there was probably also a feeling of indebtedness over the Murakami Fund issue. If the above decision made politicians believe they “could control monetary policy by exhibiting a strong-willed stance” and the general public to think that “the Bank of Japan is soft on politicians after all,” then the Bank of Japan lost something very significant. (Asahi Shimbun, 19 January 2007, “Failed dialogue with the markets” by Yasuyuki Nishii, member of editorial board <translated from Japanese>.)

\textsuperscript{30} Under the Bank of Japan Act (Article 25), officers (excluding Executive Directors) cannot be dismissed against their will during their term of office except in the following cases: a) an officer has received a ruling of commencement of bankruptcy proceedings, b) an officer has received punishment under this Act, c) an officer has been sentenced to imprisonment without labor or a heavier punishment, d) an officer has been deemed incapable of carrying out his/her duties due to mental or physical reasons.

\textsuperscript{31} The Cabinet may not be able to dismiss the Governor, but if he were to be punished for violating the Bank of Japan Act, then it would fall under Article 25 whereby an officer being punished under this Act would not enjoy security of status. In this case the Act includes the internal regulations of the Bank. Therefore, whether Governor Fukui violated internal regulations or not became a focal point but the Cabinet deemed that he did not (internal regulations were revised after this incident). The Cabinet’s intention to protect Governor Fukui is thus evidenced by such judgment.
Table 4  Governor Fukui and the Murakami Fund

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 1999</td>
<td>Investment made in two investment funds within the Murakami Fund (10 million yen)</td>
</tr>
<tr>
<td>Feb 2001</td>
<td>Fixed return of 2.43 million yen upon dissolution of the above funds</td>
</tr>
<tr>
<td>Apr 2001</td>
<td>Investment again made in two investment funds within the Murakami Fund (10 million yen)</td>
</tr>
<tr>
<td>Mar 2003</td>
<td>Fukui took office as Governor of the Bank of Japan</td>
</tr>
<tr>
<td>Dec 2005</td>
<td>Net profit of 5.62 million yen, and valuation profit of 6.69 million yen at this point</td>
</tr>
<tr>
<td>Jan 2006</td>
<td>Takafumi Horie, CEO of Livedoor, arrested</td>
</tr>
<tr>
<td>Feb 2006</td>
<td>Fukui notified cancellation of the contract to Murakami Fund</td>
</tr>
<tr>
<td>Jun 2006</td>
<td>Yoshiaki Murakami, President of the Murakami Fund, arrested</td>
</tr>
<tr>
<td>Jun 2006</td>
<td>Investment in the Murakami Fund disclosed by Fukui in a statement in the Diet</td>
</tr>
<tr>
<td>Jan 2007</td>
<td>Returned all invested funds (total of around 22 million yen)</td>
</tr>
</tbody>
</table>

C. Compound board scheme of the Swiss National Bank

In order to lessen the possibility of the executive and legislative branches pressuring the central bank through appointive authority as above, a compound board may need to be adopted by the central bank based on Fama and Jensen’s theory regarding compound board schemes in the governance of private firms. According to the theory, monitoring by an upper board includes authority to hire, fire, and compensate members of the lower board. Therefore, in the case of a central bank too, the executive and legislative branches should not intervene in the appointment of members of the lower board but leave the task to the upper board. At the same time, the lower board should be authorized to conduct monetary policy. Considering the history of central banks, such a governance structure may seem to go back to the days when many central banks were private organizations. But, by incorporating public governance through leaving appointive authority of upper board members to the executive and legislative branches, it does not completely do so.

There is a criticism regarding the compound board scheme that ultimate
accountability to the executive and legislative branches is vague, which is based on the perception of a centralized governance structure that does not admit the significance of a decentralized governance structure. A decentralized governance structure avoids the concept of ultimate accountability, believing that the accountability of a decentralized organization can be achieved when respective boards fulfill their accountability within given responsibility (see 2.5).

In this respect, the compound board scheme adopted by the Swiss National Bank is similar to the governance structure explained above. That is, as in Chart 3, the Swiss government appoints members of the Bank Council, the upper board, based on nominations/elections at a shareholders’ meeting, and at the same time members of the Governing Board, the lower board, that holds authority to implement monetary policy, are decided, not at the discretion of the Swiss government but through recommendation of the Bank Council. The Governor of the Swiss National Bank does not concurrently hold the posts of Chairman of both the Bank Council and the Governing Board, and there are no overlapping members.

Chart 3 Compound Board System of the Swiss National Bank
However, from the perspective of public governance, independence of the Swiss National Bank may be perceived to be too strong in the sense that appointive authority of the Swiss government is incomplete as the government can only appoint those elected at a shareholders’ meeting for the upper board. To the contrary, independence of the Swiss National Bank may be too weak with respect to the lower board since the Swiss government can influence the board in the form of appointment of board members such as the Governor.

2.5 Agency problem of a central bank and accountability

As mentioned in 2.1.1, the principal–agent relationship is accompanied by agency cost, ie, the agency problem. When agency cost is extremely high and exceeds the benefit of decentralization, the principal–agent relationship will likely disappear. Therefore, a device to counter the agency problem should be built into the principal–agent relationship. The following section will first introduce fundamental ideas on measures to counter the agency problem and then look at various actual countermeasures taken by central banks. Second, a general view on accountability, which is considered to be the most important measure taken by public agents against the agency problem, will be introduced and applied to central banks, whose accountability will then be considered.

2.5.1 Measures to counter the agency problem and central banks

A. Measures to counter the agency problem

Among the important issues relating to agency theory is the design of an incentive structure to counter the agency problem, on which there are numerous studies. Among them, Kiewet and McCubbins (1991) for example, gives the following four ways to overcome agency costs:

1) Screening and selection
   Agents should be selected carefully taking into consideration the agent's previous performance and reputation.

2) Contract design
   Contracts should be designed as clearly as possible so that an agency problem will not arise.
3) Monitoring and reporting
   An agent’s activities should be monitored and at the same time the agent
   required to submit adequate reports.

4) Institutional checks
   Multiple agents should check one another.

B. Central bank measures to counter the agency problem

When agency theory is applied to a central bank, an agency problem may arise
for the central bank as an agent. This paper discusses what sort of
countermeasure should be built into the institutional framework of a central bank
according to the just mentioned four measures to counter the agency problem.

1) Screening and selection
   Since multiple central banks do not exist in a single country, there is no
   alternative. However, cautious screening and selection when selecting
   central bank officers will be helpful in mitigating the agency problem. Since
   the abilities required of central bank officers cannot be gauged by simple
   indicators and are, therefore, difficult to grasp, it is highly likely that indirect
   information such as a candidate’s previous performance and reputation will be
   looked at, as is the case in selecting agents in highly professional vocations.

2) Contract design
   Generally, making a contract with an agent as explicit as possible will be
   effective in countering the agency problem. Studies that have applied this
   idea to monetary policy conducted by the central bank show that it is desirable
   for a contract regarding monetary policy to be drawn up between the central
   bank and the government (for example, Walsh (1995))\textsuperscript{32}. And, there is an
   actual case like the Reserve Bank of New Zealand, where the central bank
   enters into an agreement with the government as regards the inflation rate.

\textsuperscript{32} Walsh (1995) regarded the central bank as the government’s agent, and, based on
agency theory, discussed what sort of incentive should be incorporated to draft the most
appropriate contract to eliminate inflation bias. He considered it was most appropriate
to link central bank officers’ compensation and the inflation rate. In order to ensure
flexibility vis-à-vis new situations that might arise after signing of a contract, the
inflation rate used should not be a simple one, but one that can reflect changes.
However, as mentioned by Williamson (1985), it is difficult to make a perfect contract in advance and for central bank activities that are based on banking operations it does not seem practical to evaluate such activities with specific indicators such as an inflation rate to create an incentive structure.

3) Monitoring and reporting
   It is common practice for the executive and legislative branches to monitor central bank activities and require reports be submitted. For example, the central bank governor explains bank activities as well as submits annual reports to the legislature. As will be mentioned, the concept of central bank accountability may be considered as one such reporting requirement.

4) Institutional checks
   Basically, there is no alternative central bank within a single country, and therefore institutional checks cannot function. However, in monitoring a central bank, the legislature does not directly conduct an audit of central bank accounts but delegates the function to a specialized public organization (in the case of Japan, the Board of Audit) as its agent. Such a scheme may be considered an example of institutional checks.

   In the above discussion, the overall central bank is considered an agent of the executive and legislative branches, but Fama and Jensen (1983a, 1983b) points out the effectiveness of institutional checks by multiple agents (=the compound board scheme) within a central bank organization.

C. Agreement between the Reserve Bank of New Zealand and the government

The Reserve Bank of New Zealand Act that was revised in 1989 stipulates that an agreement should be made between the Bank Governor and the Minister of Finance concerning monetary policy. Namely, Section 9, Article 1 of the Act stipulates that “The Minister shall, before appointing or reappointing, any person as Governor, fix, in agreement with that person, policy targets for the carrying out by the Bank of its primary function during that person’s term of office, or next term of office, as Governor.” Such agreement based on this Act is called “policy targets agreement” and, in the first agreement made in March 1990, a document stating that the annual inflation rate of CPI should be lowered to within the range of 0-2% by the end of December 1992, was signed by the Governor
and the Minister of Finance (the agreement continues to be valid).

The reason why such an agreement is made between the Governor and the Minister of Finance is because the Minister is regarded as the principal and the Governor, the agent, taking into consideration that the Governor is appointed by the Minister based on the recommendation by the Bank’s Board of Directors. The agreement also states the possibility of not achieving the required target due to unforeseen events, and likelihood of the target being changed, but penalties in the event of such cases are not mentioned.

According to Walsh (1995), in the process of revising the central bank act in 1989, financial incentives such as giving a bonus to the Bank’s officers for achieving the target were discussed, but, in the end, such an incentive scheme was not included.

2.5.2 Accountability as a measure against the agency problem

Kiewet and McCubbins (1991) emphasized the monitoring and reporting requirement of agent activities as one measure to counter the agency problem. As a monitoring measure, accountability is required of public agents. The section below introduces Jackson’s study on the accountability of public agents (1982) which will be applied to central banks.

A. Accountability of public agents

a) Various facets of accountability

Jackson’s book The Political Economy of Bureaucracy explains (in a chapter entitled “Accountability and Control of Bureaucracy”) that there are a number of facets to the concept of accountability of which the major ones are as follows:

1) Political accountability

   This is the most common and basic facet of accountability—the accountability of responsible people such as ministers of public agents concerning the overall activities of their respective organization to the

33 Besides the study by Jackson introduced in this paper, Lupia and McCubbins (1994) analyzes the mechanism of the legislature formulating a public agent’s accountability as a system using game theory.
legislature and the general public.

2) Legal accountability
Accountability concerning whether activities are lawful or not.

3) Financial accountability
Accountability concerning whether public agents are using resources as designated by the legislature. Specifically, submitting financial reports to the legislature.

4) Efficiency accountability
The importance of this aspect has been increasing recently. Such accountability not only requires solid reasoning for the cost incurred, but also considers whether the most efficient measure has been taken in achieving the objective.

b) Necessity of accountability

The fundamental reason why public agents need to be accountable is based on the idea that since they are agents of the general public and/or the legislature, it is quite natural that they should be accountable to the principal, ie, the general public and the legislature. From such a perspective, Jackson points out the following three objectives of accountability:

1) Public agents are responsive to the needs and demands of the electorate, especially in a changing environment.
2) Decisions are ‘fair’, ie, they conform to the general climate of ethical opinion.
3) Performance of the bureaucracy is monitored and evaluated with a view to reducing waste and providing value for money.

Jackson also indicates that recently the last objective is becoming increasingly important and, accordingly, efficiency accountability is valued more among the various facets of accountability. With regard to the reason behind this tendency, Jackson indicates that since recent theories that apply economics to bureaucratic organizations pursue discussion on the premise that bureaucrats are also self-interested, “such self-interest can come into conflict with the public interest.” That is, assuming bureaucrats are self-interested could well explain how a bureaucratic organization’s inefficiency is generated, but, on the other
hand, the necessity of other accountability facets and objectives could be explained without any such assumptions.

Accountability is in a trade-off relationship with the independence of public agents and Jackson states that “the control of these dispersed agents of government does, however, have to be balanced against the effectiveness and efficiency which comes from their autonomy.”

B. Application to central banks

a) Difference between a central bank and general government ministries

When applying the above discussion on accountability to a central bank as a public institution, it is first necessary to pay attention to the difference between a central bank and other public agents.

First, corporate governance is also a feature of a central bank. As mentioned in Oritani (2004), a central bank carries the dual aspect of corporate and public governance and therefore, while the principal of the central bank is the legislature, it may not be adequate to directly apply the theory on accountability to a central bank. This point forms the foundation for the following second and third points.

Second, as indicated by Jackson, it is important to strike a balance between accountability and autonomy (independence) of a central bank. There are various reasons why central bank independence is necessary, but nevertheless if a request for accountability that may infringe central bank independence is to be made, that request may go against the intrinsic objective of accountability. For example, although it is, from the beginning, difficult to judge the effectiveness of central bank activities just by looking at efficiency, requesting detailed accountability in pursuit of efficiency would, on the contrary, carry the risk of making it difficult for the central bank to achieve its original goals.

Third, it is necessary to take into consideration the influence that information released by a central bank will have on financial markets. Since a central bank pursues its public objectives through participating in actual transactions in financial markets, prior leakage of its course of action could generate
market speculation which could cause market turmoil, thereby making it impossible for the central bank to achieve its initial objectives. For example, the too early release of minutes and announcement of interest rate projection might well bring about such problems.

b) To whom is a central bank accountable?

Taking the above differences into consideration, it may be beneficial to apply the theory of accountability to a central bank since the central bank is a public organization and is similar to public agents. One discussion point in this case would be to whom is the central bank accountable? This may be related to how the principal–agent relationship of a central bank from the perspective of public governance is perceived.

Of course, ultimately, the principal of a central bank from the perspective of public governance is the general public and therefore a view that “the central bank is accountable not to the legislature, but to the general public” may be valid. However, in a representative democratic system, the central bank is not a direct agent of the general public but has the aspect of agent of the legislature or president (or the Cabinet). In this respect, the central bank needs to be accountable to an organization that represents the will of the general public. This, of course, does not rule out accountability to the general public, but shows that there are various channels of accountability according to the varying quality of information to be provided.

c) Important facet of accountability

In line with Jackson’s categorization of accountability, monetary policy of a central bank is clearly subject to public accountability. Central bank governors giving testimony to the legislature and taking part in ministerial level meetings organized by the cabinet can be considered examples of political accountability. Legal accountability is obviously necessary and, as for financial accountability, most central banks submit financial reports to the legislature. With regard to efficiency accountability, although this is not altogether unnecessary, efficiency is not the sole objective of a central bank as mentioned in 1.1.4 and therefore is not so important.

Moreover, it should be noted that it is extremely difficult to measure central
bank efficiency. In particular, monetary policy efficiency includes a difficult issue in the concept itself. Nevertheless, there is an example where “budget maximization by bureaucrats” by Niskanen (1971) is simply applied to the monetary policy of a central bank. For example, Toma (1982) states that the Federal Reserve adopts a budget maximization policy and therefore has a tendency to raise interest rates on its holding assets\(^{34}\). However, there are also views that such a simple model cannot explain the behavior of the Federal Reserve (eg, Munger and Roberts (1990)). The above conflicting views show that a central bank is not governed by simple factors that could be explained by such a hypothesis. Therefore, more studies on the objective of central bank governance and to what extent efficiency should be pursued are needed, and, accordingly, central bank accountability should be considered in line with such studies.

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\(^{34}\) Toma and Toma (1986) and Mayer (1990) include many analytical papers on monetary policy of the Federal Reserve from the perspective of public choice theory.
3. Application of Public Choice Theory

In this chapter, why, in the first place, the central bank needs to be independent from the executive and administrative branches in a democratic system will be considered using public choice theory.

Public choice theory falls under public economics which was developed applying economics to the analysis of the political process and government behavior. This theory regards government (in a broad context including the legislature) as an assembly of many individuals with different interests and objectives, and posits that it is mistaken to treat government as a single individual or to presume that it has a clearly defined objective. Such understanding enables public choice theory to clarify the mechanism behind inconsistent behavior on the part of government. Also, the theory holds that just as the private sector carries the risk of market failure, the public sector may see government failure. This is because, even in a democratic system, political decision making (collective decision making) to determine public sector behavior faces intrinsically difficult issues when collating the preferences of individuals.

Below, so-called ‘cycle theory’ under majority rule and the vote maximizing behavior hypothesis will be discussed to consider public governance of a central bank.

3.1 Cycle theory under majority rule and central banks

Following Arrow’s (1951) impossibility theorem, various theories were formulated such as the cycle theory that regards democracy as majority rule. But, it became clear that it is impossible for democracy based on majority vote alone to provide a truly collective decision and that decisions forthcoming might not necessarily reflect voter wishes. Nevertheless, collective decision making continues in actuality, and the reason is explained by the concept of structure-induced equilibrium. The section below applies the above theories to central banks and proposes that those that maintain independence play a role in achieving structure-induced equilibrium in collective decision making.

3.1.1 Emergence of the cycle theory and structure-induced equilibrium

A. General impossibility theorem
Arrow’s (1951) impossibility theorem serves as a basic theory to explain government failure. The theorem is summarized by Shibata and Shibata (1988) as follows (translated from Japanese) and is considered to have clarified why government based on a democratic system sometimes behaves inconsistently:

> Arrow selected various criteria that were basically desirable for making a collective choice based on individual preferences, and investigated whether a system that could determine social preferences (priority as a group) that satisfied all such criteria existed or not. His findings showed that the only system that satisfied the given criteria was undesirable, namely, a dictatorship. In other words, it was generally impossible to come up with a democratic collective decision-making procedure that satisfied various rational and desirable criteria.

B. Cycle theory

The impossibility theorem has been more specifically applied to majority rule, and McKelvey (1979) and others proved that under it stable equilibrium did not exist among alternative policies and a cyclic problem arose. Various names are given to this theory such as ‘cycle theory,' ‘paradox of voting,' ‘chaos theory' and ‘instability theory.'

Stevens (1993) explains the theory as follows. Let us assume that, in Chart 4, three politicians have to decide the subsidies to be given to industry X and industry Y. Point A shows the combination of subsidies to respective industries preferred by politician A. The greater the distance from point A, the more undesirable it will be for politician A. Similarly, the sums of subsidies to the two industries preferred by politicians B and C are shown as points B and C respectively. When a decision is to be made by majority vote in such a situation, all sorts of results may arise and the outcome would remain unsettled. That is, if the point is within area A/B, seeing that the point is in a more desirable area than the initial value, politicians A and B will vote for this area and become the majority. Similarly, when the point is in area B/C, politicians B and C will vote for this area and, as for area A/C, politicians A and C will become the majority. Since all three areas have the possibility of becoming a majority, decisions cannot be made, thereby causing a cyclical problem. This example
shows that majority rule in a democratic system may not necessarily bring about a result reflecting the voters’ wishes. This is called ‘government failure.’

The cyclical problem arises because the selection criterion of alternative policy is not one dimensional. If the criterion is just one dimensional and the preference has a single peak, it is proved that majority rule is effective in deciding a specific alternative policy. In this case, the preference of a median voter is known to be selected by majority rule and this theory is called the ‘median voter theorem.’

C. Structure-induced equilibrium

Nevertheless, in reality, a specific alternative policy is chosen, although theoretically decisions cannot be made by majority rule due to emergence of the cyclical problem as mentioned above. To explain this, Shepsle and Weingast (1981) introduced the concept of ‘structure-induced equilibrium.’

According to this concept, in a situation where a cyclical problem arises, the order of presenting the alternative plan is of crucial importance. By deciding which plan to be shown first, the result could also be controlled. Therefore, equilibrium should be attained if an institution to decide how to submit bills is in

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35 A ‘single peak’ means that a preference function peaks at a single point and such a feature is a necessary condition for the median voter theorem to be valid.
36 Other procedures include ‘logrolling’ among politicians to make up a majority group or attain equilibrium through ‘agenda control.’
place. As pointed out by Ordeshook (1990), there are various such institutions, of which a committee system of the legislature is attracting attention. For example, in Chart 4, let us assume that politician A or B (or both) are the ranking members of the committee and are able to play a leading role in forming an opinion, and that the committee has the authority to submit an alternative policy to the plenary session. In this case, an alternative policy in the area A/B will be submitted to the plenary session and will in fact be approved.

In his theory, majority rule functions as a collective decision-making procedure only when there is a “well-defined institution” such as a committee that fulfills the role of “constraints set by institutions.” In other words, such institutions will generate endogenously in order to make majority rule function which at the same time clarifies the emergence mechanism of such institutions. In this regard, Ordeshook (1990) considered that the theory illustrated the importance of institutions in collective decision making and brought about “new institutionalism” into public choice theory, and stated as follows:

Contemporary research is a synthesis that builds on such research and depends on it for an understanding of preferences and perceptions. However, this synthesis examines attitudes, preferences, and perceptions in the context of constraints set by institutions. In turn, these institutions (legislative committees, regulatory agencies, budgetary procedures, agendas, voting rules) are viewed not only as important determinants of preferences over alternative actions, but also, in accordance with the premise of Buchanan and Tullock, as endogenously determined by individual preferences, tradition, and transaction costs. Thus, with everything connected to everything else, the study of institutions that emerges as the hallmark of modern political theory potentially forms the basis for a synthesis of several intellectual traditions within political science.

3.1.2 Application to a central bank

A. Application of the cycle theory

Since decisions related to central bank activities are made collectively, the cycle theory can be applied to central banks. If central bank decision making is based on majority decisions, then the bank may also face the possibility of a
Let us take decision making with respect to central bank policy as an example as shown in Chart 5. In this chart, similar to Chart 4, three members make decisions according to majority rule with regard to a two-dimensional issue. The subject for decision is the desirable levels of the interest rate and foreign exchange rate. In this case, for the same reason discussed in Chart 4, no combination of desirable levels of interest rate and foreign exchange rate achieves equilibrium and the cyclical problem ensues.

This occurs because decision making is considered two dimensional, assuming there is no definite correlation between the level of interest rate and foreign exchange rate. Since economic variables are correlated with one another and if such relationship is clear, the multi-dimensional decision-making problem can be reduced to a one-dimensional issue. Once reduced to one dimension, the aforementioned median voter theorem can be applied and the cyclical problem would not emerge.

For example, let us say that a policy target for the inflation rate and an unemployment rate as in Chart 6 will be decided by majority rule. In this chart, politician A favors a combination of a low inflation rate and a high unemployment rate, politician B favors the opposite combination, and politician C the median combination. If there is a clear correlation between the inflation rate and the

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37 Based on such a correlation, the combination of a low inflation rate and low
unemployment rate, the ratio of the two rates can be calculated based on such a correlation. With the ratio on the horizontal axis and the degree of preference for each ratio on the vertical axis, Chart 7 can be produced.

In Chart 7, when a vote is taken with regard to an anti-inflationary proposal (S) or a median one (M), politicians A and B favor the latter, and form a majority. To the contrary, when a vote is taken with regard to the anti-unemployment proposal (L) and median one (M), politicians B and C again favor the median proposal and form a majority. That is, in whichever case, many support the median proposal which coincides with the thoughts of politician B, the median voter.

As such, whether the decision concerning central bank activities causes the cyclical problem or not depends on whether it could be reduced to a one-dimensional issue or whether the preference has a single peak. Preference with a single peak may not be such an unrealistic assumption, but reduction to a one-dimensional issue is considerably difficult in reality. That is, although decisions regarding central bank activities are correlated, the correlation is not so simple as to be grasped in a fixed ratio. In fact, as regards the relationship between inflation rate and unemployment rate, there are many views that deny a clear downward sloping relationship but support a vertical or upward sloping relationship³⁸.

³⁸ For example see Friedman (1977).
B. Equilibrium attained by the central bank system

As mentioned above, a cyclical problem may emerge with respect to central bank policies, if, for example, they are decided by a majority in the legislature. However, in reality, such decision making is entrusted to a central bank. By playing the same role as a committee in the structure-induced equilibrium theory, the central bank is preventing a cyclical problem. The cyclical problem
under majority rule is considered to be prevented by equilibrium attained in a central bank system. Therefore, a central bank is considered to play the role of a committee in the legislature.

Nevertheless, unlike a committee in the legislature, policy decided by a central bank will be the final decision and not submitted to a plenary session. The central bank is entrusted with autonomous decision making not only for the above reason, in the first place, but for various other reasons such as its corporate governance aspect, and need for professional excellence. However, the view in this respect may be of some reference in considering central bank independence in a democratic system based on majority rule.

3.2 Vote maximizing behavior hypothesis and countermeasures

Another theory that explains government failure is the vote maximizing behavior hypothesis of politicians. This section explains the hypothesis and introduces the concept of ‘constitutional restriction’ and ‘public agent as a commitment’ that are measures against politicians who behave according to the above theory.

The relationship between a fiscal deficit and money creation given by Buchanan et al based on the above concept will be explained. At the same time, this section will clarify the fact that when relating politicians’ vote maximizing behavior and price stability which can be regarded as public goods, the supply of the latter will be underestimated. The section will then investigate countermeasures to these issues and point out the importance of securing central bank independence.

3.2.1 Vote maximizing behavior hypothesis

The vote maximizing behavior hypothesis applies the consumer utility maximization behavior hypothesis and corporate wealth maximizing behavior hypothesis to politicians. The theory was first introduced by Downs (1957) and developed by Buchanan and Tullock (1962). According to this hypothesis, “parties formulate policies in order to win elections, rather than win elections in order to formulate policies,” (Downs, 1957). Ideally, politicians should act to maximize the welfare of society, but, in reality, their behavior can be better explained by assuming that they act to maximize their number of votes. That is, the hypothesis considers that politicians are not perfect agents for voters but
have their own incentives.

Breton (1970) expressed the above idea using the following utility function of politicians. In this utility function, politicians behave to maximize the utility function \( U \) that comprises the subjective probability of reelection \( \pi \) and other variables \( a \).

\[
U = U(\pi, a)
\]

A politician has his/her policy preference which is shown by variable \( a \). Variable \( a \) includes a politician’s pecuniary gains, personal power, and pursuit of personal ideals. However, the variable alone does not determine the politician’s overall utility since the utility is also affected by the probability of reelection. Moreover, such a probability is also affected by variable \( a \) and, therefore, this utility function shows that a politician does not behave according to his/her preference for ideal policy alone but also takes into consideration all the factors that affect the possibility of reelection.

![Diagram of Breton model]

**Figure 8 Breton model**

Under the Breton model, not only politicians but also bureaucrats are on the supply side of public goods, and the supply amount is decided by negotiation between bureaucrats and politicians. There are only voters on the demand side of public goods. A feedback mechanism from the demand side to the supply side would be the participation of voters in political activities. Such political activities range widely from voting to taking part in pressure groups. However, such participation is considered to incur costs and therefore it may be
that voters do not participate in political activities despite their discontent if the cost incurred exceeds the degree of discontent. And, in order to homogenize their preferences with voters, politicians are obliged to conduct research and public relations activities.

According to the Breton model, factors behind possible divergence between voter preferences and the actual supply of public goods are as follows:

a) Voters do not show their preference for a politician’s individual policy but comprehensively judge the policy package proposed by the politician. Therefore, some policies that are not supported by voters may be implemented.

b) Public goods are not traded in the market, and, due to a free rider problem, it is difficult for politicians to accurately grasp voters’ demand for public goods.

c) Since voters do not take part in political activities, if costs incurred exceed their degree of discontent, their discontent would not be fully communicated to politicians.

d) If a politician knows the preference of voters whose number to win an election is more than necessary, he/she may be able to ignore some of such voters’ preferences.

The above conclusion obtained from the Breton Model is summarized by Kobayashi (1988) as follows (translated from Japanese):

In any case, Breton pointed out that it is a feature of representative democracy that voter wishes might be ignored, and clarified that the actual supply of public goods might not satisfy voter expectations. Until today, we have trusted representative democracy as a means to realize voter demands. However, public choice theory has revealed that a structure exists within representative democracy itself that could ignore voter intentions.

There are many studies on specific examples of the policy outcome of behavioral hypotheses such as the influence of interest groups on policy. A research on fiscal deficits by Buchanan and Wagner (1977) is among such studies and is thought to have a strong relationship with public governance of a central bank. Iida (1980) summarized the studies as follows (translated from Japanese):
Needless to say, a fiscal deficit and issuance of government securities are not bad, per se. However, if they continue to expand relentlessly and fiscal discipline is lost, it is clearly undesirable since the problem is only carried over to the future in pursuit of immediate benefit. Nevertheless, for various political parties in pursuit of vote maximization, their immediate and biggest objective is to win the next election, and thus immediate benefit is of greatest concern to them. Therefore, they would offer whatever favors they can to various levels of voters including pressure groups. As such, it is inevitable that a tendency to willingly neglect fiscal discipline would surface in order to win voters. Democracy has the inclination, almost inevitably, to see fiscal deficits increase. In general, a tax cut and an increase in government expenditure please voters while a tax hike and a decrease in government expenditure are disliked. Therefore, in a democratic political system controlled by the vote maximization incentive, implementation of fiscal policy has the risk of increasing the fiscal deficit and expanding fiscal scale, which may impair fiscal discipline.

3.2.2 Measures against vote maximization behavior

A. Constitutional restriction

As a measure to counter government failure where government policy is inclined to pursue short-term interests based on vote maximization behavior, an approach called ‘constitutional restriction’ is advocated from the perspective of public choice theory. Constitution here refers to not only a codified constitution, but all basic rules that cannot be easily changed such as laws. Kanemoto (1991) explains as follows (translated from Japanese):

The feature of this approach is to make longstanding rules such as a constitution in order to avoid the negative effect arising from balancing conflicting short-term interests. In the long term, considerable uncertainty exists for individuals regarding the future, so when making common and longstanding rules, the general public will make a choice based on a wider perspective rather than be influenced by short-term interests. This approach holds that this would in turn conform to the public interest and contribute to achieving a desirable system.

Levacic (1990) has named this approach “constitutional political economy” and
calls Buchanan and others that advocate it “constitutionalists.” According to Levacic, the theory can be summarized as follows: “Constitutionalists are keen to establish pre-commitment rules which will prevent the zero and negative sum political games caused by government from being used for securing redistributive transfers.”

Moreover, Buchanan (1991) gives the reason why such rules can induce a consensus. The first is: “The individual who recognizes his/her own possible ‘weakness of will’ in future periods may choose to impose upon himself/herself binding constraints that will effectively prevent his/her situational responses, as those responses might be dictated by in-period utility maximization.” The second reason is: “individuals may do so because they do not ‘trust’ fellow members to refrain from ‘temptation,’ and because they recognize that, in majoritarian settings, they cannot effectively forestall undesired political choices.”

B. Public agents as commitment

As another measure to counter government failure accompanying vote maximization behavior, Kanemoto (1991) cites the autonomy of public agents and calls this “public agents as commitment” which is explained as follows (translated from Japanese):

If public agents have self-interests and act independently, the intrinsic objective of bureaucracy “to work for the public” would be hampered. However, there are cases where it is beneficial to allow a certain autonomy. A typical case is the police and prosecutors… Generally speaking, it is not desirable for public policy to be changed frequently according to the political situation, and therefore the autonomy of public agents that may seem irrational may have the possibility of playing an effective role over the long term.

The aforementioned independent agency can be considered as one such public agent with autonomy. In fact, the supreme decision-making body for Japan’s police is the National Public Safety Commission which is an independent agency. Therefore, the concept of public agents as commitment is considered to explain the raison d’être of an independent agency. This is an approach shared by Moe’s theory explained in section 1.2 on the autonomy of bureaucratic
3.2.3 Application to central banks

A. Underlying problems for central banks

Buchanan and Wagner (1977) analyzed the relationship of the vote maximization behavior hypothesis and the fiscal deficit, and then applied the analysis to central banks in a chapter entitled “Budget Deficits Financed by Money Creation.”

They began their discussion by “dropping the independence and wisdom assumptions and replacing these by the plausible hypothesis that monetary authorities are, like elected politicians, subjected to both direct and indirect political pressures…” Under such an assumption, public “demand will take the form of pressures brought to bear on elected politicians for expansion in the levels of budgetary outlay” and budget deficits would be financed by money creation. They pointed out the underlying fact that “there will be an inflationary bias when governments are allowed to create deficits and to finance these with currency is very elementary common sense.” Against such a background, since “among all forms of extracting resources, inflation is perhaps the most indirect, and it is the one that probably requires the highest degree of sophisticated understanding on the part of the individual”, “elected politicians approve programs of public spending; they impose taxes. If they are not required to balance projected spending with revenues, they will not, because the voting public does not hold them directly responsible for the inflation that their actions necessarily produce.” That is, Buchanan and Wagner claim that the risk of bringing about inflation by financing budget deficits through money creation is built into a democratic system.

Based on the above thinking, if the free rider problem attaching to public goods and the vote maximization behavior hypothesis are linked, the following discussion could be made. First, let us assume that price stability, which is a service offered by the central bank, is a public good. And, assume that the cost paid by the beneficiary of this service is the margin of decrease in voters’ sales (or wages) caused by monetary tightening. Under such assumptions, we can see that a free rider problem would also occur for price stability just like other public goods, and an undersupply problem with respect to public goods (=price
In Chart 9, it is assumed that there are two citizens, A and B. The chart shows the respective marginal valuation (marginal utility) that A and B give for the provided service, i.e., price stability, overall marginal valuation which is the sum of that of A and B, and also marginal costs to provide such a service. If the two citizens reveal their true marginal valuations, and, summed up as they are in the political process, the supply of this service can be determined at level S. However, considering that the service is assumed to be a public good, it has the feature of ‘non-rivalness’ and ‘non-exclusion.’ Then there is the strong likelihood that the two citizens do not reveal their true marginal valuation honestly. For example, even if A only gave a low valuation than actual valuation in order not to bear the cost, if B gave a high valuation, and the service is supplied based on the latter valuation, A can also enjoy the benefit as a free rider. On the premise of such free rider valuation, should policy be determined by politicians that pursue vote maximization behavior, there would be an undersupply of the service, i.e., price stability, compared with demand. Deviation of voters’ demand for public goods and actual supply caused by the free rider problem of public goods is also incorporated into the Breton Model as mentioned previously.

Chart 9  Free rider problem
In addition to the above problem related to central bank activities, the cause of the political business cycle (mentioned in 2.3.2) is often discussed as the result of vote maximization behavior and considered a good example of government failure. Moreover, individual politicians may, as a principal of the central bank, communicate their views to the central bank, including those on banking operations and bank supervisory function in addition to the macro policy of the legislature. And theoretically, such views of individual politicians may likely be based on vote maximization behavior. In that case, since the banking operations and supervisory function of the central bank are transactions with private financial institutions, merely acting in line with the will of the principal as its agent may pose a serious problem from the perspective of fairness.

B. Central bank countermeasures

Following are countermeasures a central bank could take against government failure occasioned by vote maximization behavior.

Firstly, Friedman’s $k\%$ rule is well known as a constitutional restriction measure—here, money supply being increased by a central bank by a constant percentage rate ($k\%$) every year\(^{39}\) is stipulated in the constitution or law. Other examples such as the “policy targets agreement” of the Reserve Bank of New Zealand and clarification of central bank objectives in the central bank act are considered to be a sort of constitutional restriction. However, there are views that overly rigid rules such as the $k\%$ rule might hamper flexibility of monetary policy and therefore be unrealistic\(^{40}\).

Secondly, discussion on public agents as a commitment may be of some reference for discussion on central bank independence. That is to say, in addition to what has been explained so far, the reason pointed out by the vote maximization behavior hypothesis with respect to politicians can also explain why central bank independence is necessary. For example, looking at the

\(^{39}\) Friedman (1986) proposes “set a target path of several years ahead of a single aggregate. … The Federal Reserve Governors submit their resignations at the end of year in which the growth of a specified monetary aggregate has departed from the advance target by more than a designated amount.” However, he himself says “unfortunately, I do not really think that’s feasible.”

\(^{40}\) The so-called ‘inflation targeting’ of monetary policy may be regarded as a variant of the $k\%$ rule and for a similar reason may not be a realistic measure, excluding cases in small economies.
relationship between the aforementioned budget deficit and inflation, Buchanan and Wagner (1979) states that “when we assume that there does, in fact, exist a monetary authority, an idealized Federal Reserve Board or central bank, that is totally and completely immune from the pressures of democratic politics, there need be no direct linkage between debt-financed deficits and inflation because of the control powers of the monetary authority.”

And such thinking does not only apply to the macro policy of a central bank, but also to its banking operations and supervisory function. In this case, since the banking operations and supervisory function of a central bank are based on individual transactions, pressure from the legislature would likely be from individual politicians concerning a specific transaction (or activity) of the central bank. In order to prevent such pressure, central bank independence can be considered effective as is the case with central bank macro policy.

Conclusion

This paper has applied new institutional economics which extends economic analysis to the understanding of the various institutions in the economy and society—specifically, three disciplines of economics: transaction cost economics, agency theory, and public choice theory—to various issues of public governance such as central bank independence and accountability. While it has been difficult to discuss central banking system issues under a common theoretical framework, it has now become possible to discuss them under a framework of general economic theories, at least with respect to public governance issues by applying new institutional economics. The main findings of this paper based on such theories are as follows:

Firstly, when Williamson’s theory of “governance as probity” based on transaction cost economics was applied, it was apparent that probity is very important for central bank transactions—a central bank organization needs ‘governance as probity’ such as a low-incentive scheme in order to maintain the probity of central bank transactions and to minimize transaction cost (ie, probity hazard). Such governance attributes cannot be fulfilled by private organizations (such as private banks) that pursue efficiency and profit maximization. Therefore, central bank transactions should be conducted by a public organization even if efficiency is sacrificed.
And, when Moe’s theory on the autonomy of public bureaucracy was applied, we had the following findings: under “political uncertainty” where there is a likelihood public power would be transferred as the majority political party changes, political parties and politicians may want to install autonomy (independence) in a central bank in order to minimize the cost of policy swings. Based on such a theory, it can be argued that, in Japan, where a change in majority is very rare, the political tendency to reinforce central bank independence may not be as strong as in the US and Europe where a change in majority is more frequent than in Japan.

Secondly, looking at the principal–agent relationship of the central bank based on agency theory, a central bank has multiple principals such as head of the executive branch (president, prime minister) and the legislature. There are criticisms that this is the cause of central bank inefficiency, but, on the other hand, it is clear that the existence of multiple principals prevented the central bank from taking a one-sided monetary policy. And, in the principal–agent relationship of a central bank, the central bank took the position of an independent agency. Discussion on its constitutionality became a big issue when revising the Bank of Japan Act but research concluding that it is in line with the Constitution was introduced in this paper.

In line with the congressional dominance hypothesis based on agency theory, it became apparent that the legislative and executive branches could sanction or threaten a central bank—in this context the authority to appoint central bank officers was of utmost concern—and that a ‘political business cycle’ existed as corroborative evidence. And, according to Fama and Jensen’s compound board theory, private firms established a board of directors and executive board as a mechanism for shareholders to cope with agency problems arising from the separation of ownership and control (a countermeasure dividing authority into monitoring and execution within management). Based on such a theory, the advantages of introducing a compound board in the central bank and at the same time limiting the appointive authority of the executive and legislative branches to the upper board to enhance central bank independence was explained as a measure to counter the agency problem. Moreover, the paper explained that central bank accountability can be considered as a monitoring of an agency by the principal and showed that monitoring with too much emphasis on efficiency accountability would be problematic.
Thirdly, based on public choice theory, considerations were given as to why independence from the legislative and executive branches in a democratic system is necessary for a central bank. Specifically, based on the impossibility theorem proved by Arrow and the cycle theory that applied the impossibility theorem on majority rule as democracy, the fact that democratic government may behave inconsistently and that central bank independence was necessary as a measure against politicians’ vote maximization behavior as illustrated by Downs and Buchanan, were explained.

The various theories under new institutional economics used in this paper share a common perspective in that they consider an economic framework based on a rational choice that in turn is based on self-interest which is the premise of economics. Nevertheless, they are not necessarily consistent in every detail. Therefore, this paper applied the theories individually and did not take a uniform approach to the public governance of central banks using a single theory. And, although application of new institutional economics is useful, it is not sufficient. For example, there is no analysis of an independent agency based on new institutional economics, only legal theories. Should new institutional economics become more developed in this area, discussion on the public governance of central banks could be further pursued.
References


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